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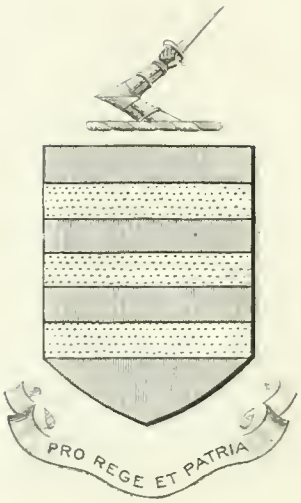

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EDITED BY

THOMAS L. STEDMAN, A.M., M.D.

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Original Articles.

POLIOMYELITIS ANTERIOR AS AN EPIDEMIC DISEASE.*

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NEW YORK.

VISITING PHYSICIAN TO THE WILLARD PARKER AND RIVERSIDE HOSPITALS, ADJUNCT PHYSICIAN TO MT. SINAI HOSPITAL, INSTRUCTOR IN CONTAGIOUS DISEASES, COLUMBIA UNIVERSITY.

COMMENCING at the end of June of the summer of 1907, physicians in New York and surrounding cities saw a constantly increasing number of cases of acutely occurring paralysis in infants and young children. During July, August, and the early part of September the cases became so numerous that most physicians with family practice saw a few and some many cases. The occurrence of the disease was not limited to any class of society, affecting the children of the rich as well as the poor in equal proportion, cases occurring even among the children who were out of town in vacation resorts and were living under the best hygienic surroundings. Being in the city all summer, I had the opportunity to see twenty-five cases, by far the largest part being seen in consultation with fellow practitioners.

The clinical manifestations of the disease were in some cases those classically recognized as infantile spinal paralysis or anterior poliomyelitis. In many of the cases, however, the affection manifested itself, in its clinical symptoms, as a combination of the symptoms characteristic of anterior poliomyelitis and those of acute bulbar paralysis, giving the picture of Landry's paralysis or acute ascending paralysis, a combination which might well be termed pathologically poliomyeloencephalitis, although such a term would at this stage of my discussion be objectionable in that it indicates an involvement not of limited portions of the cord or brain, but a general inflammation of the cerebrospinal axis. To this group characterized by bulbar paralysis, in addition to the paralysis of the extremities, three of my cases belonged, and all of these died. The remaining cases were ordinary cases, corresponding in a general way to classical cases of poliomyelitis anterior, for the most part divisible into two groups, that is to say, cases which I saw less than seventy-two hours from the onset in which the fever was still present, while there was extensive paralysis, and cases seen equally early in the history of the disease in which the paralysis was more or less extensive, with no fever present at the time of my examination, and only a history of fever less than two days in duration. In so far these latter cases resembled in their histories ordinary sporadic cases of infantile spinal paralysis. The cases marked by a fever of long duration suffered from a paralysis of lesser extent than the cases in which the duration of the fever was short. One case in which the only muscles paralyzed were those supplied by the right facial nerve, resembling a Bell's palsy, I saw on the eighth day when the temperature was still 102°.

While I had seen in my experience many hundred cases of paralytic anterior poliomyelitis in hospital and outdoor services with which I was connected, I had seen but very few cases of poliomyelitis anterior in the acute inceptive stage, and these few had been sporadic cases of the disease; even the many cases seen in the paralytic stage had occurred not in epidemics, but as sporadic cases. This epidemic of this disease was the first one of which I had any experience. So much was I impressed by the three bulbar cares of which I have spoken—a new class in my experience, although common in the epidemic form of the disease—that I was led to suspect that epidemic poliomyelitis anterior is a radically different disease from sporadic poliomyelitis anterior, possibly differing as widely as epidemic cerebrospinal meningitis when compared with the various types of non-epidemic or sporadic cerebrospinal meningitis; differing indeed in etiology, pathology, clinical history, prognosis, and treatment. If this distinction can be maintained much that is confusing and contradictory in recent clinical and pathological studies of poliomyelitis anterior as compared with the older and equally comprehensive studies will be explained.

The recent pathological observations are almost exclusively studies of cases that died in epidemics of the disease, while the classical older conceptions are based upon autopsy findings in sporadic cases of the disease. As is well known, one of the accepted dicta concerning the sporadic disease is that it is very rarely fatal; hence the rarity of autopsies in the inception stage of such cases. In the epidemic form of the disease, on the other hand, not only in this but in all epidemics that have occurred, the disease has an appreciable death rate; so that Harbitz and Scheel of Christiania were able to study and report in epidemics occurring in Norway from 1903 to 1906, 19 autopsies. In 1903 there occurred 18 cases with 6 deaths; in 1904, 61 cases, with 12 deaths; in 1905, 719 cases, with 111 deaths; in 1906, 334 cases, with 34 deaths, in all 1,132 cases, with 163 deaths. These cases, although the disease is not accepted as communicable, were all reported to the State Board of Health. So that the death rate of the epidemic poliomyelitis anterior in the Swedish peninsula is about 15 to 20 per cent. Smaller epidemics in various countries have shown a similar death rate, and our present epidemic has probably been no exception. But, inasmuch as our Health Department classifies all cases of meningitis together in its mortuary statistics and since, furthermore, physicians are apt to have reported deaths due to poliomyelitis anterior under various diagnoses, it is not possible to determine the exact number of deaths due to this cause. Comparing, how-

*Read before the Medical Association of the Greater City of New York, December 16, 1907.

ever, the death rate from cerebrospinal meningitis (including simple meningitis and spinal cord diseases) for 1906, when there was no epidemic, and 1907, when the epidemic raged, during the months of August and September, when the death rate due to this epidemic would be at its height, we find:

Number of deaths due to meningitis under 25 years of age in Greater New York, August and September:		*Number of deaths due to spinal cord disease under 25 years of age in Greater New York during August and September:*	
1906	109	1906	40
1907	134	1907	44

While these figures do not permit of any deduction as to the death rate or size of this epidemic, owing to the conditions which the statistics represent, yet they do admit the deduction that there has been a considerable death rate in this epidemic, so that the literature of the epidemic type of the disease need no longer be reproached with a lack of pathological study, owing to a dearth of pathological material. But it would be an obvious *non sequitur* to affirm of sporadic poliomyelitis anterior the results of pathological and bacteriological studies based upon autopsies of cases of epidemic poliomyelitis anterior, particularly if further evidence can be given of the conception that the two conditions while correlated are radically different diseases. On the other hand, such a conception, if confirmed, might materially modify our prognosis concerning the duration of the paralysis in the epidemic cases, and this is by far the most important symptom in the cases which recover.

It has been accepted that, while in the sporadic cases the extreme paralysis of the stage of onset undergoes regression, hence the term regressive paralysis (Barlow), no case absolutely recovers with disappearance of all paralysis. In all cases a more or less extensive paralysis remains for life. On the other hand, in this epidemic in my limited experience—for this epidemic must have numbered two thousand cases in this section of the country—several times my prognosis as to the permanent nature of a part of the paralysis has not been confirmed. Two of the cases recovered entirely within six weeks, no obvious paralysis remaining. These and other points will serve to emphasize the importance of the clinical study of the epidemic as contradistinguished from sporadic cases of this disease, particularly in the light of the renewed interest aroused by the occurrence in this city of this the largest recorded epidemic of this affection.

The first reliable report of an epidemic of this disease, occurring in 1881, was that of Bergenholz in Umea. He reported thirteen cases. The first extensive epidemic was studied by Medin[1] of Stockholm, occurring in that city in 1885. Four of these cases were studied by Rissler[2] pathologically, the patients having died on the sixth, seventh, and eighth day of the disease, and one in the seventh week after the onset. Prof. Medin[3] reported a further epidemic in 1895. Medin described in all sixty-four cases. The next epidemic of any consequence occurred in Otter Creek Valley in Vermont and numbered about 160 cases described by McPhail.[4] No cases of this important epidemic came to autopsy, although there were deaths. Smaller epidemics without pathological study were described by MacKenzie[5] and by Painter[6] (38 cases). In Norway minor epidemics were recounted with careful autopsies, and clinical and pathological observations and studies by Bülow Hansen and Francis Harbitz.[7] Looft[8] and Leegaard,[9] who described 54 cases, gave a clinical account of two minor epidemics. Francis Harbitz and Olaf Scheel[10] of the University of Christiania, Norway, described the epidemics to which I have referred above, the only epidemics that approach in magnitude the recent one in this city, and presented us with a clinical and pathological study of the disease, which in its completeness and thoroughness is worthy of all rivalry.

In the Southern hemisphere the epidemic form of this disease is not unknown. It is interesting to note that here the cases occur during the summer months of those countries, namely, during December, January, and February. Thus Wade[11] of Sydney, Australia, described an epidemic of 34 cases. Litchfield, also of Sydney, describes 25 cases of the same epidemic. Etiological data obtained from a clinical study of these various epidemics yield very little. The main facts are that the cases occur during the hot and dry months of summer, July, August, September, and October. The two largest epidemics seen in this country, the one in Vermont and the recent one in New York, occurred during summer months of exceptional dryness. Through reports furnished from the office of Mr. E. H. Emery of the U. S. Weather Bureau, I find that during July, 1907, the total precipitation of moisture in New York was 1.18 inches, of which .55 occurred on July 20, the remainder being divided over the rest of the month. The average precipitation for July for 37 years past is 4.38 inches, July, 1907, having the lowest precipitation of any July in 37 years past, since 1871. During August, 1907, the total precipitation was 2.48 inches, the average for August for 37 years past is 4.53 inches. On the 11th of September there occurred .73 inches of precipitation, and from that time on the moisture was excessive.

In MacPhail's report of the large epidemic in Vermont, he noted that the season had been exceptionally dry, no rain falling during weeks, while the epidemic was at its height. Medin's epidemic occurred during July, August, and September. He does not mention, however, whether the months of both epidemics described by him were free from moisture. The criticism that the largest epidemics of this disease have occurred in seaboard cities and not in inland and dry countries, and that hence no importance is to be attached to the lack of precipitation coincident with the epidemic, is not valid, when it is recalled that children in dry climates habituated to certain limited variation of moisture and temperature become acclimated to these and will not be affected by conditions which would have a deleterious effect upon those not acclimated to similar variations.

The question of contagion, or rather the communicability of the disease, was studied in some of the epidemics, particularly in Norway and Sweden. Dr. Geiersvold, who studied the epidemic in Norway referred to above (Harbitz and Scheel), reported the results of his investigations to the Swedish government, by whom he had been commissioned for this especial work, and expressed the conviction that the disease was contagious, several families being stricken in the person of more than one member. Harbitz and Scheel agree with this view, although they acknowledge that in the city of Christiania a painstaking investigation failed to demonstrate any connection between the cases. In my own experience in the past summer I did not see more than one case in any one family, nor do I know of any instance in which multiple cases occurred in the same family, although I have heard

of such. Most of my cases were seen in the family practice of other physicians, the cases being in close contact with other children; and these were the conditions under which most of the cases were seen in the city. That under these circumstances no cases pointing to direct contagion should have occurred is strong if negative evidence that this epidemic disease is not contagious.

One peculiarity that stamps the epidemic form of the disease and distinguishes it from the sporadic form is the fact that it occurs in older children as well as in infants. Indeed, young adults have not been free from it. Children from five to eight years of age were not infrequently affected by it, although the vast majority of cases were in children under five, and very many of them infants. One of my cases which terminated fatally after three days' illness was a young girl eleven years of age with bulbar symptoms, which I diagnosticated as a case of acute ascending paralysis, the so-called Landry's paralysis. This case was seen in the hospital and came to autopsy. Another similar case with bulbar symptoms was that of a boy seven years of age, seen on the second day in consultation, and death on the fifth day. All my other cases were under five years of age. Dr. Geiersvold found both children and adults were attacked in the Norwegian epidemics. Of the 19 autopsies on recent epidemic cases studied by Harbitz and Scheel 8 were in adults. Other observations of epidemics found similar conditions with regard to adult susceptibility to the disease. This is a very important distinction between the epidemic and sporadic disease, which owed its name, acute infantile spinal paralysis, to the fact that the sporadic form of the disease was not known to affect adults.

The symptomatology of the epidemic type of this disease is very different in many respects from that of the acute stage in a sporadic case. The fever is of greater duration in the epidemic cases, it is a more prominent factor and is never absent in any of the cases, while sporadic cases frequently occur in which a healthy child has gone to bed at night and waked in the morning with the characteristic spinal paralysis. In all of my cases the fever was present and in most of them it endured many days after the paralysis had appeared. The temperature curve was slightly irregular, but not septic in character, however. Many of the children were delirious and semi-comatose, a condition from which they emerged very slowly. There was no vomiting except at the onset. There was hyperesthesia of all the surface of the body, and in many cases seen on the first, second, or third day there was some rigidity of the neck and spine. Even the paralyzed limbs could not be handled without pain. The patella reflexes were in most of the cases absent. The initial rigidity at the back of the neck soon gave way to a flaccidity of the muscles about the neck, in some cases, particularly those in which the muscles of the back were paralyzed. I saw several cases in older children (three to eight years of age). In some of these there was incontinence of feces and urine, symptoms that do not form a part of the history of sporadic cases of this disease in which the sphincters are never affected. Three of my cases had bulbar symptoms and died of symptoms due to the involvement of the hypoglossal, glossopharyngeal, and pneumogastric nuclei. One of these cases had a comparatively low temperature, mental condition absolutely clear, and yet total paralysis of all the extremities and muscles of the back, together with the muscles of deglutition and speech, and finally died of diaphragmatic and cardiac paralysis. In one or two of the cases in this epidemic there was a temporary, at least, analgesia (pin test) in some of the paralyzed muscles from which the patient recovered about the time when the fever disappeared, so that clinically in these epidemic cases symptoms are present, not met in the sporadic cases of the disease, presupposing for their explanation a general inflammatory disease of the cerebro-spinal axis, including nuclei in the pons and medulla, and longitudinally a more or less extensive myelitis not only of the anterior gray horns, but of the posterior gray horns, the white columns, the anterior and posterior nerve roots, and even the meninges (pia mater). Fortunately, and thanks chiefly to Harbitz and Scheel (op. cit.[10]), Bulow-Hansen (op. cit.[5]), Rissler (op. cit.[2]), and Leegaard,[12] we have many autopsies made on cases dying from epidemic so-called poliomyelitis anterior during the acute stage, with careful microscopic and macroscopic studies of the findings in the cord, brain, and all the other organs of the body, and in cases of Harbitz and those of Bülow-Hansen even bacteriological investigations made during life (lumbar puncture, blood cultures, etc.) and post mortem.

On the sporadic cases of the disease we have four autopsies made on cases dying during the acute stage of the disease, although such autopsies are extremely rare. In two of these the symptoms of acute poliomyelitis anterior complicated measles with bronchopneumonia, of which latter the children died. These were reported by Siemerling.[13] One case by Dauber,[14] an eight and one-half months' child, dead on the sixth day of the disease, and one case by Redlich,[15] a five-months'-old-child, dead on the ninth day, one case of Drummond and one of Goldscheider, sporadic cases of the disease in both which the original disease, pneumonia, was complicated by the paralysis I purposely exclude, because the death was due to the pneumonia, as in the cases of Siemerling, and, as in those cases, the infantile paralysis was a complicating affection, so that to consider them is superfluous. We have large numbers of autopsies on cases of sporadic poliomyelitis anterior dying months and years after the occurrence of the paralysis from some other disease in which the classical lesion of poliomyelitis anterior and secondary changes in the anterior nerve roots were found and nothing else, but such autopsies could not serve for comparison with autopsy findings in cases dying in the acute stage of a recent poliomyelitis anterior epidemica.

With regard to the findings in the sporadic cases. First, Dauber's case: Child of a physician, eight months old. Fever three days; paralysis on third day; death on sixth day. Autopsy showed poliomyelitis anterior acuta. Anterior horns most involved; slight changes in posterior gray horns, especially in columns of Clark. No changes in any other organ of the body. Second, Redlich's case: Girl, age five months; fever and paralysis simultaneously observed; death on ninth day. Autopsy—poliomyelitis acuta. Changes limited to the anterior gray horns (ganglion cells), round cell infiltration, and changes in the blood-vessels of the arteries of the anterior fissure.

Siemerling's two cases: One, boy two and one-half years old, died on the eighth day of the paralysis, which had been preceded by a pneumonia. Another, a boy eight months old; pneumonia a week, then paralysis and a few days later death. In both cases autopsy. Pneumonia. In the cord polio-

myelitis anterior acuta limited as in Redlich's case to the cord and in the same areas of the cord.

Let us compare these cases with some of those dying in epidemics of so-called poliomyelitis anterior.

But before considering these I must not neglect to explain why I have not included among the autopsies on non-epidemic cases of poliomyelitis anterior, the two thoroughly studied cases of Bülow-Hansen. These were all the more interesting in that the affected were two children, brothers, five and four years of age respectively, one dying on the seventh and the other on the fifth day of the disease. These cases were not seen during an epidemic. The autopsies showed in both children poliomyelitis anterior acuta, together with soft, large spleen, hyperemic kidneys, and the post-mortem changes in the intestinal tract characteristic of first week of typhoid fever, such as swelling of the mesenteric glands, intense hyperemia, and swelling of Peyer's patches throughout the small intestine. Large intestine normal.

Curiously enough, Bülow-Hansen based his entire study of the pathology and pathogenesis of acute poliomyelitis anterior upon these two cases; blind to the fact which his own extensive record of the autopsy findings reveals, namely, that he was dealing with two cases of acute, septic typhoid fever, with infection either of the typhoid bacillus or mixed infections in the cord and meninges. These cases occurred before the era of agglutination reactions (Widal) in the diagnosis of typhoid and before blood cultures were customary and frequent. He preferred to look upon these cases as cases of enteritis complicated by bronchopneumonia and poliomyelitis anterior acuta, or rather he considered the latter condition the disease and the enteritis and pneumonia complications.

The inception of the disease in both children was four days apart. The older child began with fever, diarrhea of thin watery stools, and cerebral and cord symptoms. Without the autopsy, one would be tempted to describe the condition as the typhoid state. The excellent account of the autopsy in both cases compels the diagnosis of typhoid. The signs of general infection in these two cases are marked, but unfortunately for those who would establish the view that sporadic poliomyelitis anterior acuta is an infectious disease, the port-mortem evidence that they were both cases of typhoid fever is also in my opinion self-evident.

We come now to the consideration of autopsy findings upon cases of poliomyelitis anterior acuta epidemica. The material we have to select from is considerable, for epidemic infantile paralysis, so-called, is frequently fatal, differing in this respect, as I have already noted, from sporadic poliomyelitis anterior. The best studied and most recent autopsies of this type of the disease are those of Harbitz and Scheel. The study includes 19 cases at necropsy, of which 13 were cases of acute poliomyelitis, including acute bulbar paralysis, 7 children and 6 adults. These cases died after two, three, four, and five days, one of each, and 8 in from seven to ten days. The authors state that in the nervous system the following changes were found: In the spinal cord, a diffuse infiltrating inflammatory process, closely related to the blood-vessels, chiefly in the anterior horns, but involving to a less extent the whole gray matter more or less extensively longitudinally through the whole cord. Inflammation could also be traced in the white matter and in the pia mater with its prolongations; this, however, was demonstrable only by microscopic examination. There was also a cellular infiltration consisting partly of small and large mononuclear lymphocyte-like cells, especially in the pia and white substance, while in the gray substance the cellular infiltration consisted partly of polymorphonuclear leucocytes. There was marked degeneration of the ganglion cells over large areas of the cord. They also state that the inflammation in the cord was more extensive than might be expected from the clinical symptoms, and in cases suffering only from symptoms of acute bulbar paralysis there was found extensive inflammation all along the cord. Occasionally the inflammation was hemorrhagic with small hemorrhagic cavities in the anterior gray cornua.

The inflammation of the pia mater on the cord and in the fissure was demonstrated opposite sections of cord, in which the cord itself was not involved, which Harbitz believes shows that the inflammation begins in the pia and extends to the cord along the vessels. The inflammation is most intense in the anterior gray horns because these are supplied by the largest vessels. There is, therefore, a meningitis which precedes the inflammation in the anterior gray horns. Indeed, the pia mater is inflamed around the medulla and pons, about the cerebellum, along the base of the brain and cranial nerves, and particularly along the Sylvian fossa, exceptionally even over the hemispheres. There was also in many of these cases inflammation of the brain substance, including the medulla and pons, the fourth ventricle and nearly all the cranial nerve nuclei. The white matter, however, was but very slightly or often not at all involved. In nearly all the cases examined, even those giving no bulbar symptoms, all the cranial nerve nuclei were attacked by the inflammation. As a rule the gray matter around the aqueduct of Sylvius with the third and fourth nerve nuclei were involved. The inflammation, however, was more intense in the cord than in the brain. There were even infiltrations in the cortex in some cases, particularly around the central convolutions. These were the severe cases that died, but even the milder cases which recovered but died of subsequent intercurrent disease, when examined showed (four such were examined) degenerated nerve tissue to a much greater extent than had been expected; changes were found in these cases not only in the cord, but in the medulla, basal ganglia, and in a few places in the cortex of the brain. The process even in the milder cases is therefore a general inflammatory one throughout the brain and spinal cord, and the pia mater of the brain and spinal cord.

It is obvious that the bulbar cases correspond closely in their symptom complex to cases of acute ascending paralysis, or what has been described as Landry's paralysis, as shown by Basoe.[16] Such bulbar cases have been quite frequent in our recent epidemic. They differ only in degree from the milder cases; the simple inflammatory changes in these go on to destruction and hemorrhagic infiltration of basic ganglia and bulbar nuclei in the severe bulbar cases. So that epidemic so-called poliomyelitis is in reality a general cerebrospinal leptomeningitis with anterior poliomyeloencephalitis. How different this from sporadic poliomyelitis anterior, which is exactly what the name indicates.

Except for the autopsy findings in the central nervous system, even in the epidemic disease there were no changes in other organs or viscera. There were no changes in heart or blood-vessels, no petechia, no changes in the lungs, liver, spleen, kid-

neys, mouth, nose, pharynx. There was no herpes or skin eruption, nor did I observe any such clinical manifestations in any of my cases. In four of my cases lumbar puncture was made, in two of the cases the fluid was carefully examined and proved sterile. It is true that Schultz[17] diagnosticated a case of poliomyelitis anterior, and found on lumbar puncture the meningococcus, but this was evidently a case of cerebrospinal meningitis epidemica. A similar case was reported by E. Tiedemann,[18] but Sicard,[19] who made such lumbar punctures in poliomyelitis anterior, reports normal cerebrospinal fluid, as did Triboulet and Lippman.[20] Cases observed in other services at Mt. Sinai Hospital, particularly the children's service, have yielded, I am told, sterile fluid on lumbar puncture. Bülow-Hansen made extensive bacteriological examinations on the cord and meninges post mortem. As I have already stated, I consider the cerebrospinal lesion in his cases as secondary to typhoid fever. But it may be of interest to know that he found no microorganism, either in cover glass preparations or cultures from the substance of the spinal marrow. No bacteria or bacterial emboli were found in crosssections made at numerous levels in the spinal cord. The cerebrospinal fluid obtained by lumbar puncture from one of his cases was sterile, cultures made from it were negative, and animals injected with the fluid suffered no pathological change.

It appears, then, from what has been said concerning the differences between sporadic poliomyelitis anterior and so-called epidemic poliomyelitis anterior, or, rather, as I think it should be termed, epidemic meningomyeloencephalitis, that the two conditions are radically different diseases; the latter including among its extensive neurological lesions the pathological changes characteristic of sporadic poliomyelitis anterior. The clinical manifestations of the two diseases differ as markedly as is necessitated by the widely different pathological changes characteristic of each. The two conditions, moreover, differ in their morbidity, in the ages of the patients for which each of the conditions has a predisposition, the sporadic disease being found in children almost exclusively, the epidemic disease affecting adults and children. They probably differ, moreover, in a very important characteristic, for sporadic poliomyelitis anterior cannot be considered an infectious disease, while epidemic meningomyeloencephalitis may be, although positive proof of its infectious nature is still lacking.

The term infectious disease, originally introduced by Virchow, is intended to include such diseases as are caused by the activity in the body of minute organisms, capable of unlimited reproduction, or their toxins, such organisms or their toxins or both being disseminated through the body in the various organs and giving rise to general symptoms, such as fever, etc., as signs of the general infection. This does not exclude the classification among the infections of those diseases in which the pathogenetic organisms or their toxins are unknown, for most of the infectious diseases, even the most contagious, belong to this class. But, on the other hand, in addition to the local lesion and the fever, there must be general symptoms, indicating the more or less general dissemination of the organisms and their toxins by means of the blood-vessels and lymphatics. So that in an infectious disease, in addition to the local and deciding lesion and fever, signs of infection in other organs of the body, such as the spleen, liver, kidney, heart, blood, etc., should occur. In sporadic poliomyelitis anterior we have only the local lesion and the temporary fever. The picture could be reproduced on a non-infectious basis. For instance, in status epilepticus lasting some hours the patient almost invariably has fever with the convulsions, due to irritation of the fever centers in the brain; and yet the condition is not an infection.

It is evident that the conception of an infection requires more than fever and a local lesion; even the epidemic character of an affection does not necessarily classify it among the infectious diseases, but in sporadic poliomyelitis anterior this latter characteristic is entirely absent, and it appears more logical, if the epidemic cases are to be considered as a different disease, to follow the teachings of that astute observer, Charcot, and look upon the changes in the anterior gray horns in the sporadic cases as primary, and the vascular and other inflammatory changes as secondary.

It is interesting to note that lesions similar to sporadic poliomyelitis anterior have been produced by positively noninfectious causes. Thus C. F. Hodge[21] showed that in animals the ganglion cells of the spinal cord suffered a vacuolation and a shrinkage of the cell body, with even a greater diminution in the size of the nucleus as the result of the prolonged action of weak electrical currents. In the study of the effects of electric currents of high potential, Mills and Weisenberg[22] report an interesting case of a typical bulbar paralysis following a shock of 1,000 volts two days before. Dr. Mills and S. W. Morton saw a case of bulbospinal paralysis or myasthenia gravis in the person of a lineman 30 years old, employed in the Philadelphia Electrical Bureau, apparently due to frequently repeated electric stimuli, which the patient had suffered in the pursuit of his occupation for a long period of time.

As to epidemic meningomyeloencephalitis, that is apparently an infectious disease; the causative factor, be it toxin or organism, is unknown. I say apparently infectious, not only because accompanied by fever and because it occurs in epidemics, but chiefly because the lesion is general throughout the cerebrospinal nerve centers. This notwithstanding the fact that but few well-authenticated cases of this epidemic disease as a primary disease have been reported in which concomitant inflammatory disturbances of other important organs were found.

In conclusion, then, I reiterate the belief that sporadic poliomyelitis anterior is entirely distinct from the so-called epidemic poliomyelitis anterior, more properly designated, as I have suggested above; that the sporadic disease is not infectious, and that the epidemic disease is in all probability infectious, but not contagious.

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BACTERIAL VACCINES AND CURATIVE SERA.*

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The discovery of diphtheria antitoxin in 1893 by Behring marked the beginning of the search for specific remedies, especially for specific antisera, and it was not long before a number of such sera were produced and employed clinically. The use of sera for specific therapeutic purposes was very attractive, because it was possible to have some animal, like the horse, manufacture the antibodies, and one needed then merely to transfer the animal's immunity to the patient by injecting some of the animal's serum.

You probably all know that, according to Ehrlich's theory, the antitoxin is nothing more than thrust-off side chains or "receptors" of the susceptible cells. These receptors, circulating in the blood, encounter the invading toxin, and by combining with it prevent it attacking the body cells. It is obvious that such toxin as has already combined with the cells cannot be neutralized by the antitoxin. Hence the antitoxin should always be given as early as possible and in sufficient doses. In desperate cases seen late, the antitoxin should be given in a massive dose intravenously. This method is perfectly safe if attention is paid to asepsis, and it may be the means of saving a life that would otherwise be sacrificed.

The clinical success of diphtheria antitoxin is now no longer open to question. Statistics prepared by the writer,[1] from large cities in this country and Europe, show that a marked decline in the diphtheria mortality coincides with the introduction of diphtheria antitoxin, and that this decline has continued with the more extended use of the remedy.

Most of you are aware that the antitoxin for tetanus has not achieved anywhere near the success of the diphtheria antitoxin. And you may also know that in laboratory experiments on test animals tetanus antitoxin is uniformly effective. The reasons for this difference are mainly two. In the first place, the diagnosis in tetanus is not made until the onset of the tetanus symptoms, that is, not until the tetanus toxin has entered into so firm a combination with the susceptible cells that no amount of antitoxin will prevent the toxic action. In diphtheria, fortunately, attention is usually called to the disease at an early period, owing to the symptoms of mechanical irritation, and before very much toxin has attacked the body cells. The other reason for the failure of tetanus antitoxin is that the toxin has so strong an affinity for cells of such vital importance, those of the central nervous system. There is, however, a distinct field of usefulness for tetanus antitoxin, and its use here should become more general. I refer to the value of prophylactic injections in cases in which tetanus infection may be likely. This includes particularly the Fourth of July wounds, which formerly were often followed by tetanus. Since the more extended use of the antitoxin in these cases, the number of deaths from tetanus after such accidents has markedly diminished. Thus in New York, where we formerly had a considerable number of such cases after each Fourth, there was not a single one after the last Fourth. Too much stress must not be laid, however, on Fourth of July wounds. There are many other crushed and dirty wounds into which earth has been ground which should be considered in this connection. If tetanus antitoxin is used in these cases the results are just as successful as those in our animal experiments.

Following the researches of Nuttall, Buchner, and especially of Pfeiffer, considerable work was done with specific antisera in cholera, typhoid fever, and a number of other diseases. These sera were bactericidal, that is to say, they *killed and dissolved the bacteria* against which they were specifically directed. Clinical trials soon showed, however, that these sera had little therapeutic value, and subsequently laboratory experiments disclosed a large number of difficulties in their practical application. It may be well to remind you that the destruction of bacteria by a bactericidal serum is brought about by the combined action of two substances. One of these, the immune body, is present only in the specific immune serum; the other, called the complement, is present in all sera, normal as well as immune, *while these sera are fresh*. The complement is a very labile body, and disappears from the serum on standing. For obvious reasons it is impracticable to use freshly-drawn serum clinically. When we inject the ordinary immune serum, therefore, we supply only the immune body and rely on the injected body to supply the complement. Unfortunately, it has been found that there is often a marked decrease of complement during infections, or as a result of wasting diseases, or in consequence of other depressing conditions such as overindulgence in alcohol. Yet it is just at this time that we may want an especially large amount of complement in the injected body to destroy the invading bacteria. Furthermore, no way has yet been found to increase the amount of complement in the organism. Another difficulty which may be encountered consists in the fact that with the bactericidal sera one can give too large a dose. There seems to be an optimum dose, and yet we have no way of determining what this dose shall be. Finally, it has been found in animal experiments that the species of animal from which the serum is obtained is also important. Thus in some instances an immune serum from a horse might not act in man, because apparently the harse serum fails to find a fitting complement in the human body. Whatever the reasons for these difficulties, the fact remains that the use of bactericidal sera for curative purposes has not been attended with any marked success. They have, however, been used with some success in immunizing against infection,

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and they are still used in what is called the "combined method" of immunization.

In the past few years it has become more and more apparent that the limitations of serum therapy are, for the present at least, almost insurmountable. Attention has therefore again turned to treatment by active immunization. Perhaps the best known examples of active immunity are the protection naturally conferred by an attack of scarlet fever, or measles, or smallpox, or the protection artificially produced against smallpox by vaccination, against rabies by the Pasteur treatment, or against anthrax by means of bacterial vaccines.

The scientific foundation for active immunization was laid by Pasteur. He showed that a mild attack of an infection, brought about by the use of an attenuated (weakened) virus, protected against subsequent infection with a strong virus. His first experiment was most dramatic. He injected half of a flock of sheep with an attenuated anthrax culture, and then, two weeks later, injected all of them with a virulent culture. All of the sheep not previously injected died, while not one of the others was even dangerously sick.

It was perhaps only natural, in view of his discoveries in fermentation, that Pasteur should have believed that the production of immunity required the action of the living virus. He therefore vigorously combated the idea that immunity could be brought about by means of dead virus, or of lifeless products of growth of the virus. Touissant, as far back as 1880, had held out for the latter possibility. The imperfections of his technique were such, however, that his views were not accepted. To Salmon and Smith of this country belongs the honor of first clearly demonstrating the possibility of immunization with dead cultures.

Active immunization, then, can be carried out in several different ways:

(1) By means of living cultures of the virus. Usually the cultures are attenuated, but there are some exceptions.

(2) By means of dead cultures of the virus. The cultures can be killed either by heat or by the use of chemicals.

(3) By the so-called "combined method," *i.e.* by first administering a dose of the specific immune serum and subsequently the virus. This method has been used in typhoid fever, cholera, and plague.

(4) By means of the products of autolysis of the cultures. This has also been used in typhoid fever, and seems to possess certain advantages over the use of native cultures.

(5) By means of various combinations of the preceding methods.

The attenuation of the virus, as mentioned above, can be accomplished in a number of ways. Thus, by drying, as is done with rabies virus in the Pasteur treatment. Or by growing the virus at a temperature unsuited for the development of virulence, as is done in the case of anthrax; or by passing the virus through a less susceptible animal, as is done in vaccination against smallpox; or by means of chemicals such as the addition of iodine solution to diphtheria toxin, as was formerly done by Behring; or by means of heat, as was also formerly done with diphtheria toxin.

The choice of these various methods of immunization depends on the nature of the infecting virus. With some infections dead cultures apparently are able to cause the production of full protective powers, while in other infections the body seems to require a greater stimulus. In these, the use of attenuated living cultures may bring about the desired immunity. Finally there are infections in which nothing short of fully virulent cultures seems to bring about the development of sufficient immunity. In these cases it is necessary to first prepare the way by the use of dead or of attenuated cultures.

At first active immunization was applied only to prophylactic treatment. The first to attempt to use this method in curing an infection already in progress was Koch. This was his tuberculin treatment of tuberculosis. While the prophylactic use of active immunization is usually easily understood, there often seems to be some difficulty in understanding how active immunization can accomplish anything in the curative treatment of an existing infection. As a matter of fact, we know that it does. The following are some of the explanations:

If the body is being ravaged by an infection, for example with typhoid bacilli, it is possible that the virulence of these is so great that the body cells are unable to produce any antibody against them. By immunization with dead or attenuated cultures of the bacteria, however, it may be possible to accomplish this. In the case of rabies our injections of virus into the more indifferent (*i.e.* less vital) tissue of the abdominal wall causes a production of antibodies possibly by that tissue, before the original infection has a chance to attack the more vital central nervous system. In the case of chronic infections, such as acne, multiple boils, joint tuberculosis, etc., we may assume that these do not tend to heal because there is insufficient absorption of bacterial substances to cause the development of antibodies. Or it may be that substances given off by the body cells immediately around the focus of infection combine with and change the bacterial substances so that these no longer stimulate antibody formation. In these cases, then, our injection of bacterial vaccine would supply this lack and so cause the development of antibodies.

The treatment of infections by means of active immunization has been greatly stimulated by the work of Wright,[2] who has published favorable results in a large number of infections. It may surprise many of you to hear that already several hundred thousand persons have been actively immunized against cholera, and that large bodies of troops have been immunized against typhoid fever. Until recently the method has found application particularly in the prophylactic immunization of persons liable to be exposed to infection. At the present time, however, owing largely to the efforts of Wright, the method has come to be used for curative purposes, *i.e.* for infections already in progress. That author has clearly formulated the conditions in which he thinks this form of treatment is indicated, and he has also devised methods for the more exact determination of doses than were formerly in use. There is no doubt that the possibilities of active immunization have not yet been sufficiently investigated, and Wright deserves great credit for his efforts in behalf of this mode of treatment. In this connection I may call your attention to the recent publication by Richardson,[3] on the treatment of typhoid fever. By using certain bacterial vaccines prepared after the method of Vaughan, he found that the typhoid process was apparently made longer but milder, and by continuing the treatment into convalescence the liability to relapse was diminished.

The advantages and disadvantages of active and of passive immunization may be summarized as follows:

Active immunization is usually more effective, more lasting, and is a general immunity, not merely one particular kind. It is slower, sometimes difficult to bring about, and may involve some risk to the patient.

Passive immunization is often ineffective, is often merely a special kind of immunity, and does not last long. It is instantaneous and convenient, and involves practically no risk to the patient.

A word now as to the term "bacterial vaccines." These, of course, have nothing to do with the real vaccine obtained from calves and used against smallpox. There is nothing of the cow, vacca, about them. The French have long used the term vaccin to denote any virus which is used for immunization, and that is the sense in which the term "bacterial vaccine" is now used. In other words, the material used for immunizing, whether this is a suspension of living or of dead bacteria or the autolytic products of culture growth, is spoken of as a "bacterial vaccine." A commercial firm has introduced the term "bacterine" for these preparations, and but for the fact that this is a copyrighted name, this designation would have been preferable.

In the use of bacterial vaccines, one must constantly keep in mind the nature of the bacterium with which one is working, and the kind of immunity one wishes to bring about. Everything depends on the way in which the vaccine is prepared. With bacteria making considerable quantities of a toxin, it will be necessary, if we wish to immunize against this toxin, to grow the culture for the requisite length of time and under the proper conditions for producing the toxin. In the case of bacteria possessing certain endotoxins, it may be necessary to let the cultures autolyze, so as to set these substances free. On the other hand, we may wish to use these bacteria for producing a specific agglutinating serum. In that case we often try to avoid injecting these toxic substances. Our entire procedure might then have to be quite the reverse of what I have just indicated. In immunizing with the tubercle bacillus, it is well to remember that this organism is encased in a peculiar waxy covering which largely prevents the body fluids from acting on it. Koch therefore crushes the bacilli so as to secure immunizing substances against the entire bacillus. Originally he sought to attain the same result by growing the cultures in a 5 per cent. glycerine broth and subsequently evaporating the filtrate to 1/10 its volume. This extract is now known as "old tuberculin," and is extensively used for diagnostic purposes, especially in cattle. It is also used in humans, but care must be exercised in selecting the cases and in the dosage. It is probable that the technique recently introduced by Pirquet[4] and subsequently modified by Calmette[5] will lead to the more extensive employment in the diagnosis of tuberculosis in humans.

Pirquet's method consists in making a fine scratch in the skin, and then rubbing a little old tuberculin into this. If there be a tubercular infection this will be followed by a characteristic induration or even vesiculation, commencing about twelve hours after the vaccination. In Calmette's method, the so-called "ophthalmo-diagnostic" test, a 1 per cent. solution of the dried alcoholic precipitate of old tuberculin is dropped into the eye under aseptic precautions. The first symptoms of a reaction appear in from three to twelve hours in most cases, but may be delayed twenty-four to forty-eight hours, and continue for a week. The presence of a reaction is indicated by a scratchy feeling, secretion, and redness of the inner canthus, caruncle, or lower lid, which may increase and include the entire conjunctiva with edema of the lids. Grünbaum,[6] Cohn,[7] Squire,[8] Comby,[9] Baldwin,[10] and many others have published favorable results with the ophthalmo-diagnostic test.

Wright's method of preparing a staphylococcus, typhoid, or streptococcus vaccine, is as follows:

Several streak slant agar cultures are planted and incubated for twenty to twenty-four hours. The cultures are then washed off with normal salt solution, using from one to several c.c. for each culture. These suspensions are next heated to 55° C. in order to kill the bacteria, and are then standardized. By this is meant determining the number of organisms per c.c., for Wright always used definite numbers of bacteria in his inoculations. This standardization is readily accomplished by means of the method devised by Wright, which is as follows: From a finger prick a drop of blood is sucked up in a capillary tube to a mark made at any convenient point with a wax pencil. Next an equal amount of the bacterial suspension is drawn into the tube, allowing a tiny air-bubble to intervene. The two fluids are then expelled on a glass slide, and then thoroughly mixed by sucking back and forth a number of times. After this has been done the mixture is spread in the ordinary way of making blood smears. If these blood smears, after staining, are examined with a microscope having a ruled eye-piece it is a simple matter to determine the ratio of bacteria to blood cells. Taking the red blood cells as 5,000 million per c.c., one calculates the number of bacteria per c.c. In practice it is advisable to so dilute the bacterial suspension that the dose to be injected is contained in about one c.c. of fluid. Finally ½ per cent. of carbolic acid is added as a preservative. Such a suspension is a "bacterial vaccine." It goes without saying that the vaccines should be tested by means of cultures to insure sterility, and that contaminations should be excluded by means of microscopical examination.

So far as doses are concerned, these vary with different bacteria, and also according to the indications, opsonic or clinical. The ordinary dose for the staphylococcus vaccine is from 200,000,000 to 1,000,000,000 organisms; for the streptococcus it is from 50 to 75 or 100,000,000, and for typhoid from 750 to 1,000,000,000 bacteria. All the injections are given subcutaneously, and it is well to repeat the injections every three or four days.

The clinical results obtained by means of bacterial vaccines have varied. There seems considerable agreement on the part of most observers that certain localized infections, such as acne, multiple boils, etc., often do very well with this method of treatment. In the treatment of bone tuberculosis the results are not so harmonious, and in the treatment of general infections many failures have been reported. There is no doubt, however, that treatment by means of bacterial vaccines deserves more extended application.

Most of you are aware that Wright guides his bacterial vaccine treatment by means of the "opsonic index." This index is the relative phagocytic power of the patient's serum compared to the average of several normal sera. Without going into the technique of Wright's method, it will suffice to say that these determinations are very difficult to make, and are subject to a number of unavoidable errors. Experiments made by the writer[11] show that the results of duplicate or more determinations made of the same serum at the same time and under apparently identical conditions, frequently yield widely

divergent results. There is also often a considerable variation in the opsonic indices of several normal persons. Finally, the opsonic index and the clinical course of the disease do not always run parallel. A number of investigators have proposed modifications in the technique in order to overcome these inaccuracies. It is possible that in this way opsonic measurements may be obtained more in accord with the clinical data. However, the absence of parallelism referred to is not at all surprising to the student of immunity, for, after all, the opsonic indices measure only one element of the mechanism of immunity. When Gruber and Durham published their observations on agglutinins, the phenomenon was at once hailed and interpreted by many as measuring the degree of immunity possessed by the patient. The same error was made some time later, when the bacteriolytic substances were discovered. In both cases it was soon found that these were but experiments, of greater or less significance, of the complex phenomenon of immunity. It would certainly be surprising if the opsonic power were to prove the real measure of the degree of immunity. At the present time, therefore, the writer believes that opsonic measurements, made according to Wright's method, are unreliable, and should not replace clinical observations in guiding treatment by bacterial vaccines.

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THE EARLY DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.*

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FORMERLY SUPERINTENDENT AND AT PRESENT TRUSTEE OF THE NEW YORK STATE HOSPITAL FOR THE TREATMENT OF INCIPIENT TUBERCULOSIS.

The unquestioned decrease in the death rate from tuberculosis during the last thirty years began before the discovery of the bacillus and the introduction of special direct methods of prevention. The decrease has been relative; that is, in proportion to the population. The actual annual morbidity from tuberculosis in this State has not diminished, but increased. Recent tremendous progress in the nature of sanitary reforms has been almost entirely responsible for the reduction in prevalency and mortality. Consumption continues to cause from 1/10 to 1/11 of all deaths, and the death rate rises and falls with the general death rate.

A successful crusade against consumption will be measured largely by a diminution in the proportion of deaths due to that cause and this result will depend largely on two factors: prevention and saving the lives of those who escaped protection. True, effective prevention is in its infancy. Thus far it has been more or less of a delusion. Little or nothing has been done in this State, excepting in New York City. There great activity is displayed in a comprehensive campaign against the greatest scourge of humanity, and the results may afford the best test of preventive measures to be found in the world.

Ultimately the problem of tuberculosis will have to be solved by the health officers. They have the power and should assume the responsibility. Only organization, effective plans, and continuous, not spasmodic activity, will win. Anti-tuberculosis societies may agitate and support, but the health officers must take the initiative and insure the enforcement of practical measures. Otherwise so-called education of the public by those who are clinically positive, and sometimes acutely, may arouse public sentiment, but not secure action. Of course, upon which comes the proper initiative to [illegible], full duty is apt to accomplish the most lasting good.

We cannot know the direct and most of the contributing causes of tuberculosis and not feel that it is preventible and unnecessary. We know that the disease can be detected early and that about eighty per cent. of those afflicted might recover if rational methods of relief were employed. There are about fifty thousand deaths in this State and the death returns show an annual loss of life of more than fourteen thousand. The vast proportion of these deaths occur between the ages of twenty and forty, when productive power and ability to provide for dependents is at its highest level. Science has not revealed a way of estimating the amount of physical suffering and distress caused by this malady, and, therefore, we estimate the wanton waste of precious lives as a loss of wealth to the State of about $70,000,000 annually.

If these facts are true, and we have told the public that they are true, why does the appalling carnival of suffering continue and the ghastly disgraceful death rate maintains its yearly record? The time to look for reasons seems to have arrived. In the first place we are learning that promises and predictions based on narrow views have not been fulfilled. Consumption has not been eradicated, and there is nothing to show that it will be in the near future. The problem is stupendous and multiform and must be attacked by broad methods. It does not involve a mere bacteriologic question, but a sociologic reformation. The slogan of battle, "sunlight and fresh air," will be changed to "food, sunlight, and fresh air." Eighteen meals of oxygen a minute must be accompanied by three square meals of food a day. The poor cannot live on air and sunlight, and if the cost of existing, not living, continues to increase, consumption will be given greater opportunity to attack the underfed.

But we can save time by two confessions: first, the public is not properly protected: second, the death rate is not diminished as it might be in an enormous proportion by the early recognition of the consumptive and the adoption of well known measures for relief. The responsibility for failure must fall largely on the physician, and the hope of any true progress must depend more on the education of the medical profession. The task is an unpleasant one, but an impartial examination of existing conditions justifies the frank consideration of undeniable facts

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The public has been inoculated with phthisiophobia and hysterical fear has added hardship to affliction, but there are signs of returning sanity. There has been a deluge of literature and an unrestrained flux of garrulity designed to reveal how much we know about tuberculosis. Now, how much has the knowledge been applied and how much has it helped the consumptive? The consumptive is an anomaly in the practice of medicine, and prolonged neglect has made his woe in a manner unique. He is the only sufferer from any known disease who does not receive the full benefit of medical skill and knowledge, and consequently consumption is the saddest thing in the world.

The diagnosis of incipient disease is the transcendent requisite. It means everything to the patient, and yet the early stage is seldom recognized. Until recent years an excuse existed for failure to detect the invasion of tuberculosis. Little or no provision had been made for the care of the curable cases, and it may have seemed useless to promptly find the existence of disease, particularly among the poor. It was assumed that the patient was doomed and he may have received the last new remedy or he was treated on the appropriately styled expectant plan.

About four years ago this State established a hospital for the treatment of incipient tuberculosis at Ray Brook to provide for 200 patients. The opponents of State care for this class prophesied that the demand for relief would be so great that the State would be financially endangered. They insisted that provision for only 200 was a mere flea bite, and in that contention they were right. The largest population ever recorded at Ray Brook has been 145. There is room to-day for more patients. Furthermore, only about 50 per cent. of the inmates can be classified as incipient cases, and consequently an institution devoted to their exclusive care is less than half filled by those who strictly belong there. Of those accepted 40 per cent. on the report of examination made by State examiners are found to be moderately advanced or advanced on admission. Only one-tenth of the applicants for admission could be accepted because 9/10 of those recommended by physicians were too advanced.

The population of all the institutions in the State designed for the treatment of consumption shows that about one per cent. enter an institution at the time when the greatest number of apparent recoveries can be expected. After years of strenuous effort on the part of those interested in procuring promising cases for treatment, it is found that the combined average for a large number of sanatoria in this country is about 20 per cent. of really favorable patients. The vital importance of early recognition and treatment is strikingly illustrated by the tabulated results obtained at Ray Brook for four years. During that time 549 patients were admitted. Of this number 267 were in the incipient state, 145 moderately advanced, and 47 advanced.

Condition	Total Cases	Apparently Recovered	Disease Arrested	Improved	Unimproved	Died
Incipient...	267	219 82.9%	37 13.9%	5 1.87%	5 1.87%	1 Hemorrhage
Moderately advanced	145	32 22.06%	89 61.38%	14 9.65%	10 5.9%	
Advanced..	47	0	26 53.3%	11 23.4%	10 21.27%	

Thus of the incipient cases 82.0 per cent. apparently recovered and 13.9 per cent. were arrested. Of moderately advanced cases 22.06 per cent. apparently recovered and of advanced cases none apparently recovered. It is fair to assume that about 160 patients failed to recover because they were sent to the hospital too late. If there are 50,000 consumptives in this State and the average duration of the disease is about three years, there must be thousands of the afflicted at any given time who are in the early stages of the disease. I appreciate the chances for error in statistics due to personal equation and faulty technique, but imagine what an early diagnosis and vastly increased provision for proper care would mean in the Empire State! Rational care of the early case constitutes ideal and humane prevention. Remember, also, that every inmate is sent home with a liberal education. He knows how to take care of himself, the best his condition and environment will allow, and he ceases to be a source of any danger to his fellow beings. Every graduate is a teacher of hygiene and the gospel of fresh air. The consumptive has a right to insist on this chance. Why doesn't he demand it? Because he does not know, and generally is not told, that he is a consumptive until too late.

Why do such an insignificant number receive an opportunity to recover and why is the disease not recognized in time? There is nothing to be gained by quibbling or evading the answer. A large proportion of the medical profession does not, cannot, or will not detect the presence of pulmonary tuberculosis during the incipient stage. There can be no other explanation of certain deplorable conditions, and the best remedy lies in the honest admission. It has been claimed that many poor patients do not consult a physician at the right time, and this is sometimes true, but the comparative number is small.

With very few exceptions the unfortunate patients who failed to gain admission at Ray Brook had been under the observation of one or more physicians for months, and most of them had been treated for bronchitis, catarrh, and obstinate cold, or something else. Furthermore, the experience of physicians at health resorts frequented by the well-to-do reveals a similar tendency to delay sending patients away until evidence of advanced disease is only too plain.

An unknown percentage of unfortunates fall into the hands of physicians whose practice is more or less tainted by a growing commercial spirit. An overcrowded profession, the cost of living, a superabundant supply of alleged medical colleges, and variegated forms of healing account somewhat for the fact that the sufferer from a long-continued chronic disease is valuable prey. The consumptive has long been the dupe of the quack and the "patent medicine" harpie, effectually aided by a modern and enlightened press whose business manager is usually located nearer the earth than the editorial force.

In a search for reasons why beginning tuberculous disease escapes the notice of the physician, the most natural one seems to be that he has not been taught how to find it, and the fault is to be found in the medical school and the textbooks. Many physicians have never seen, to recognize, or examined an incipient consumptive. Their education was confined to the study of the advanced lesions and the later signs and symptoms.

Probably the greatly exaggerated importance as-

cribed to the presence of the bacillus in the sputa and the dependence on this as the only positive evidence has done more than anything else to distract attention from other reliable clinical signs of disease. As a matter of fact the appearance of the bacillus may usually be regarded as a late manifestation. There are instances when its presence may be one of the first indications of certain obscure forms of the disease, but as a rule with few exceptions definite physical signs are evident some time before it can be found. Usually bacilli are not ejected until considerable destruction of tissue has occurred, and the lesion and its nature may be very apparent long before that time. Much needless inexcusable delay may thus be caused by waiting for its detection.

Cases of closed tuberculosis will escape notice, and large affected areas may progress until an opinion is of little benefit to the patient. Quite frequently a satisfactory diagnosis can be made weeks or months before a search for the bacillus is successful. The belief that tuberculosis is present may be doubted by the laboratory savant, but the evidence is sufficient for the clinician. We often reach a conclusion with less evidence and without waiting for infallible tests. The undue significance given the bacillus has become one of the chief excuses for careless work and a disinclination to acquire clinical aptitude and proficiency. The examination for bacilli is often imperfect and haphazard and leads to a deceptive decision.

If the whole amount of expectoration for twenty-four or forty-eight hours be collected and a sediment obtained by adding a solution of phenol (carbolic acid) or liquor-potassæ and then the deposit be centrifugalized and spread on a number of slides, the bacillus will be found more quickly in the end and also more frequently. Practically all cases of pulmonary tuberculosis observed during life may progress to the state when bacilli are perceived, but the extent of the lesion and its effects may be checked by treatment in the meantime. With the admission that the bacillus should be looked for as a positive aid in diagnosis and that its presence may be quite invaluable in confusing conditions to substantiate or confirm a difficult conclusion, let us dismiss that agent and consider other methods which we are compelled to employ. Most of them were well known to some of the older authorities, but they have assumed added significance as our knowledge of proper care has advanced. Their study and application require more effort, time, and patience than the dispatch of a specimen and the receipt of a report.

When tuberculosis is suspected a careful consideration of the family and individual history becomes more and more important because the diagnosis and prognosis are becoming very closely allied. A case may be incipient and favorable or unfavorable. The importance once assigned to heredity has undergone a decided change. This is apparently somewhat due to the fact that we may call things by other names. The statement that the disease cannot be inherited or directly transmitted is not entirely true, because the bacilli have been found in the placenta and the fetus of the tuberculous mother.

Exactly how predisposition will account for the tendency of the young children of tuberculous parentage to die of tuberculous meningitis and other forms of tuberculous disease is not quite clear, and I fear the last word concerning heredity, predisposition, and latency has not been said. Something is inherited which makes it worth while to scan the family history and remember that types and tendencies should not be overlooked. The recent attempt to discover evidence of immunity conferred by tuberculous parents might be very interesting if it rested on more substantial proof.

Valuable information can often be obtained by investigating the possible or probable opportunity for infection. Has the patient been exposed by occasional or close contact with a consumptive in the same house or shop? This is particularly important when the contact has been prolonged or proper preventive measures neglected. Kaiserling and others have shown that the disease can often be found by examining members of the family thus exposed. Sometimes repeated examinations of the apparently healthy person who lives with a consumptive will reveal the evidences of disease before any symptoms appear or attract the notice of the individual. I offer an illustrative case.

Miss S. lived in close contact with, and cared for, a sister suffering from advanced consumption. To the best of my knowledge proper means for prevention were observed. Miss S. called on me several times at intervals of two weeks, requesting an examination of the chest as a safeguard. In the course of time I discovered signs of an invasion of the left apex. She was apparently in robust health and betrayed no symptoms whatever. Two and one-half weeks after the discovery of the disease a slight cough and an evening rise of temperature developed. There was a very slight loss of flesh and no expectoration. She was sent away and seven weeks later the expectoration contained bacilli. She apparently recovered and remains in good health after the expiration of two years. These cases offer the best opportunity for the study of slight lesions during the stage of invasion. Furthermore, the physician does not perform his full duty if he fails to keep exposed members of a family under careful observation. The importance of repeated examination of individuals exposed to infection has not been sufficiently emphasized.

An effort should be made to learn if the patient's history reveals evidence of a preceding attack. The lesion under observation may be secondary and due to an auto or reinfection. Antecedent attacks and the signs of an old lesion are much more common than is generally supposed. The patient may recall a period of ill health, characterized by fever, loss of flesh, etc., ascribed to a cold or influenza, or possibly the symptoms of a localized pleurisy may have been present. An examination may disclose both the old and the new focus of disease. There may be signs of a healed or quiescent lesion in one apex and active disease in the other. Again, and this happens rather frequently, a quiescent or temporarily closed area of tuberculous lung may, after an indefinite time, display acute exacerbation and be mistaken for a primary infection.

The opinion that all pleurisies are tuberculous in origin is already in process of revision, but the history of attacks not accompanied by pneumonia may be included with suspicious testimony. The presence of bacilli in the pleuritic effusion can sometimes be determined by inoscopy when other procedures fail. Even if we assume that a large percentage of cases of pleurisy with effusion are tuberculous in origin, it does not follow that tuberculosis of the lung will accompany it or even supervene.

The following definition of incipiency has been

adopted by the National Association for the Study and Prevention of Tuberculosis: "Slight initial lesion in the form of infiltration limited to the apex or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent."

Obviously any brief definition will be subject to criticism and cannot for many reasons be employed arbitrarily. Tuberculosis of both apices may be slightly manifest and the condition favorable, but as a rule it is followed and not accompanied by involvement of the other. The inclination to regard incipiency simply in relation to time is quite general. The duration of the disease is quite conjectural, and with few exceptions it has been present much longer than is assumed. A morbid process may also be recent and yet extensive, progressive, or very grave. A slight lesion may produce profound systemic disturbance or the individual resistance be unusually marked.

In considering symptoms it must be remembered that we are dealing with an insidious disease. From the time of infection months may elapse before objective or subjective symptoms are pronounced. Those deserving special study are in the order of their importance hemorrhage, fever, loss of weight, chlorosis or anemia, loss of appetite, and cough, with or without expectoration. All these symptoms are rarely associated in the early stage.

Hemorrhage occurring during the incipient stage or as an initial manifestation seems to be somewhat rare in the eastern States. In my experience it is recorded in about 5 per cent. of this class. At the New York State Hospital an examination of the histories of 285 cases of incipient tuberculosis shows that hemorrhage occurred in 19 per cent. When other causes have been excluded its significance cannot be too strongly emphasized, and the history of a hemorrhage antedating by months or years more recent suspicious symptoms should invite a search for a previous lesion.

A rise of temperature at some time during the twenty-four hours is probably the most frequent symptom on which we may place much reliance. This symptom is more frequently overlooked than any other. There is absolutely nothing to be gained by asking the consumptive if he has fever. The advanced case will visit the physician's office daily, if the physician is foolish enough to allow it, and insist that he has no fever when the thermometer will record a temperature characteristic of typhoid fever. A temperature of 103° or 104° F. is frequently seen. Not more than two per cent. of the early cases will have any sensation of fever. The highest elevation of temperature usually occurs between the hours of 4 P.M. and 7:30 P.M.

The morning temperature, as a rule, is normal or subnormal, even in febrile cases. Consequently little or no dependence can be placed on any observation at that time. If a case is to be closely studied the temperature should be taken every two hours from morning until evening and the rectal temperature is more reliable. There are instances when the presence of fever is entirely overlooked unless this rule is followed. Thus a marked daily rise of temperature may occur only at noon and be absent in the afternoon or evening. It is a wise precaution to examine a suspected patient in the evening. Exposure to cold air, particularly if prolonged, has an influence on the febrile curve. Allow the patient to wait until he is warm on a cold day. Otherwise the thermometer may require from four to ten minutes to register the actual temperature. Many of the new cheap thermometers require an insertion of several minutes instead of one to register properly.

Whether the temperature is taken after exercise or rest will be more noticeable in a consumptive than other patients. Fever is usually more marked in children than in adults suffering from tuberculosis, and it is often temporarily increased during menstruation and an attack of indigestion. A diurnal rise of temperature due to syphilis, intestinal toxemia, or neurasthenia is apt to be most puzzling and sometimes difficult to exclude. To assume that an active lesion is always associated with fever may be misleading at times, but it is often an excellent guide.

Loss of weight is usually slight and gradual, not rapid and great. The standard of weight for the individual should not be fixed at the highest ever attained. Age, habits, and the mode of living should receive attention, and the statements of patients concerning their normal weight is often most unreliable. In view of the chances for error, it seems safe to compare the present with the average weight while in health. There is usually a difference of two or more pounds between the morning and evening weight. The loss of appetite and indigestion are of decidedly relative value, because they are so common in other conditions. Chlorosis and anemia are much overestimated as early symptoms. They are frequently due to other causes and more frequently follow extensive disease than precede the state of invasion. The fact that chlorosis and neurasthenia have an influence on the prognosis is another matter. A decided leucocytosis, however, may be of signal assistance at times in eliminating tuberculosis and directing attention to other forms of infection.

Practically all textbooks lay stress on cough as an early and most constant symptom. Very often it is due to pharyngeal irritation and subsides after local treatment. Many times the so-called hacking cough owes its origin to nervous habit and disappears by an effort of will or as a result of suggestion. It is not nearly so common among men as it is among women. As an early sign of tuberculosis its importance and the frequency of its presence have been much exaggerated, but it performs valuable service by directing attention to the chest. Physicians who visit a sanatorium for the care of incipient consumptives are always surprised by the absence of coughing.

All the symptoms which lead to a suspicion of pulmonary tuberculosis should be considered, so far as possible, in a group, and their chief importance will be found in encouraging thorough and repeated examinations of the chest. We have learned that symptoms formerly ascribed to a pretubercular state are usually caused by post-tubercular conditions. It must be borne in mind that early manifestations, with the exception of hemorrhage, are due to toxemia, and individual resistance will influence the time of their appearance and their character. The earlier the diagnosis the less pronounced will be the symptoms as a rule.

In discussing the physical signs commonly as-

sociated with incipient disease, a few words may well be devoted to the reasons why they are sometimes undetected. Not enough time is spent by the student or physician in the study of normal sounds. The cardinal rule, "compare, always compare," is not always observed. The normal relative difference between the right and left upper lobes is not appreciated. The chest is not thoroughly bared, particularly in women, and the search is not thorough. The ear may not be trained or the hearing acute, and the unmusical ear may be incapable of detecting slight changes or alterations in pitch. The technic of percussion is not an easy art to learn and is only acquired by practice. The finger is not properly applied to the chest wall or the improper stroke elicits only the bony resonance of the physician's finger. The selection of a stethoscope, the fit of the ear-pieces, and the unnecessary length of rubber tubing should be considered. Opportunity for frequent practice gives one an enormous advantage, but even the skilled examiner realizes that absolute concentration of attention and plenty of time are required for careful search. While the immediate application of the ear may be preferred, the spaces above the clavicles cannot be effectively examined by that method.

Experience has shown that any type of chest may be invaded by the bacillus. When invasion is localized and the focus slight in extent, the chest will, as a rule, reveal no significant change in conformation. Depressions in the chest wall and relative lack of movement in certain localities are much more noticeable when the disease has advanced to a more marked degree.

By aptitude and much practice the sense of feeling may become very acute, and some observers rely much on evidence obtained by palpation. The signs elicited by palpation are necessarily of a collateral value. The excursion or modified function of a small portion of the lung can be studied more accurately by other methods, and the transmission of fremitus as revealed by sense of touch at the apex may be very deceptive. Many teachers and textbooks apparently assume that the chest is to be examined while the patient breathes in the natural or accustomed manner.

After an individual has relinquished active exercise the full, deep breath may be a rare event or an exertion. This is particularly true of women. Furthermore, deep expiration very frequently must be taught. Probably one of the principal reasons why the early signs of pulmonary tuberculosis escape attention is the fact that full exercise of the lungs is not enforced to gain information not revealed otherwise. It is quite frequently impossible to find distinctive signs without obliging the patient to breathe in and out forcibly. The movement of the tip of the lung, the extent of impairment or consolidation, the character of the expiratory murmur, and the presence and nature of râles can very often only be determined by this method. A proper examination should include observation during natural and forced respiration. The commonest location of beginning disease is at the apex, and the initial focus is apt to be found about one and one-half or two inches from the tip of the lung posteriorly. An analysis of the histories of 285 incipient cases admitted to the New York State Hospital shows that the lesion was located as follows:

Right	Upper lobe,	171	60.5 per cent.
	Lower lobe,	14	4.9 per cent.
Left	Upper lobe,	98	34.3 per cent.
	Lower lobe,	2	.7 per cent.

Thus in 95 per cent. of cases the lesion was confined to the apex.

When tuberculosis of the lung accompanies or follows pneumonia or pleurisy it is more apt to develop in the middle or lower lobes, but our attention to-day is confined to the insidious incipient variety. Percussion and auscultation should include the apex of the lung which extends during inspiration one to two and one-half inches above the clavicle. The note on percussion will show relative dullness compared with the other apex or another portion of the lung. Strong and light percussion may both be necessary to bring out the sound, and the note can be analyzed or defined as shorter in duration, higher pitched, and quality modified.

Sometimes if the change of pitch cannot be appreciated it is of assistance in comparing to hum and endeavor to imitate the gradation of change. At times a sense of resistance to the finger can be felt. Delimit by percussion the movement of the tip of the apex in the region of the neck and mark with a pencil the height to which it rises on full inspiration. The diseased lung may be restricted by infiltration, consolidation, or adhesions, and the extent of its movement modified proportionately. Of course, one must remember that the right apex is normally relatively dull and higher pitched than the left. A lesion at the right apex is for this reason more difficult to recognize, but the danger of error has been decidedly overestimated by some authorities on physical diagnosis. The note on percussion can be compared with adjacent areas, and by repeated examinations the extension of the dull area can be watched. Again, the play of the apex can be quite accurately determined by Kornigs' method.

The change in the respiratory murmur most frequently revealed by auscultation may be characterized as modifications of bronchovesicular breathing. They are distinguished by slight increase of tubular character, and the expiratory sound which is the essential element to study is relatively higher pitched and prolonged. Decided confirmatory evidence will be found if fine râles can be detected. They must be distinguished from the coarse, distinctly moist râles in the larger tubes. The older English clinicians distinguished between them by the term clicks and râles, and the words are as truly descriptive to-day. The clicks, crepitation, or fine râles are often unobserved for several reasons. They may be very few in number, fugitive, or occur in showers. They may often be heard in the morning before expectoration has cleared the locality of secretion which accumulated during the night. The essential test is to oblige the patient to cough and breathe deeply. Many times they only appear after several efforts in coughing have pulled apart the mucous-coated, agglutinated structures.

Physicians occasionally disagree because one will hear râles and the other will not. The time of day, the temporary condition of the lesion, and the method employed may account for the difference in observation. In some instances the only sounds discovered by auscultation are diminished breath sounds. In such cases signs of activity may be heard over adjacent territory, and particularly near the clavicle. If only suppressed breathing is heard, other signs must be considered to obtain evidences of a deposit, which is almost sure to be tuberculous at the apex if there is no evidence of other thoracic disease. Cogwheel respiration may lead to suspicion, but it is not of distinct diagnostic value. It

can be heard in many nervous patients and may be found on one examination and absent at another. A distinct friction sound, which can surely be designated as such, is rarely heard, except when the lesion is old, and it is much more indicative of a secondary pleurisy when its appearance is temporary.

Finally the transmitted whisper is of decided value in confirming the presence of morbid changes over a small area. Many times the increased audibility and high pitch of the sound will denote infiltration or solidification and remove doubt caused by indefiniteness of other signs. The transmitted whisper affords a much more delicate and reliable test than the speaking voice, particularly if the latter is high pitched, weak, and not penetrating. I have deliberately avoided mentioning roughened breathing during inspiration as a reliable sign. If the word harsh, as employed by the Germans, has been confused, that is another matter, because harsh breathing may be simply a modification of bronchovesicular breathing which becomes more marked later. The differentiation between a recent slight lesion caused by tuberculosis or syphilis or one following influenza is seldom called for, but it can usually be accomplished if the history and all the clinical evidence is closely scrutinized.

The tuberculin test as a positive indication of tuberculosis offers opportunity for difference in opinion and discussion. The tuberculin is injected into the patient, not into the physician. This may explain somewhat its frequent employment when quite unnecessary. The unprejudiced observer who has watched the pendulum swing can still afford to be conservatively skeptical concerning some positive tests. The character of the product, the dose, and the technique certainly require more consideration than has generally been given them. My personal experience has been very slight, because instances when its use might seem necessary or justifiable have been extremely rare. Opportunity to observe its employment by others when it seemed unwarranted and savored of needless interference have been more common.

After the other evidence of pulmonary tuberculosis has been carefully collected and sifted, if doubt still exists, continued watchfulness will practically always remove uncertainty in a short time without detriment to the patient. The most proficient examiners use the test the least or not at all. A reaction may not furnish the knowledge which the clinician desires. If we are willing to assume that the reaction is infallible we must still decide, if possible, where the implantation exists and what is its character.

Allow me to cite two characteristic instances to exhibit the possibility of error if a diagnosis is based upon this test. An opinion was ventured that one man was suffering from aneurysm of the arch of the aorta and another of sarcoma of the mediastinum. Other physicians disagreed and ascribed the manifestations to tuberculosis of the lung. Both patients were given tuberculin and decided reactions followed. A positive diagnosis of tuberculosis of the lung was then made. Both of the patients died within a few months and an autopsy revealed no evidence in either case of any disease in the lungs. The original diagnosis was confirmed. Whether tuberculosis existed elsewhere in these patients I do not know. The uncompromising advocate of the tuberculin test always has the advantage because no tangible evidence is required. These remarks would seem to apply to the test by Calmette's or Pirquet's method.

But the contribution made by Franz is most interesting and suggestive. He tested with tuberculin the members of two Austrian regiments. They were supposed to be in good health. Sixty-one per cent. of those in the first year of service reacted to doses of 1 to 3 mg. and 69 per cent. in the second year of service reacted to similar doses, but not content with these results Franz asserts the belief that the injection of 10 mg. would have shown 100 per cent. of reactions. The purpose of this investigation by Franz was to learn the number free from tuberculosis. Evidently the clinician will have to be content with the recognition of tuberculosis when he can perceive evidence of its location, extent, and character. When the tuberculin test seems to be demanded what conditions which may give a similar reaction shall we exclude? Will the influence of suggestion and the presence of syphilis or chlorosis complete the list or are there other causes still unknown which may mislead?

When the consideration of treatment is limited to the incipient case there is slight room for any controversy. The earliest possible diagnosis should be followed by the immediate employment of the only method or procedure which promises anything. The prime requisites are rest for an indefinite time, pure open air, and a full diet. The patient should be under the care and control of a competent physician, and discipline is an essential attribute of the plan. There are many details in management which influence the result, but time will not allow of their discussion. One very essential part of the treatment is too often disregarded. I refer to the mental condition of the patient.

The patient who can gain admission to a properly conducted sanatorium has a decidedly better chance for recovery than another who is not under close observation. A rigid routine and close supervision of the character and quantity of food are large factors in the result. Most patients reach recovery by the aid of the alimentary tract. A change of climate undoubtedly contributes much toward recovery, especially if it is more favorable for treatment or allows more comfort. The advocate of home treatment does not usually spend his vacation in his back yard.

Certain localities have gained a reputation for supplying conditions exceptionally favorable. Purity of the air and freedom from dust are two of the essentials. The climate of Colorado and some regions of New Mexico and Arizona offer advantages not to be found in the East. Dryness and equability and a much larger amount of sunshine constitute the chief attributes of superiority. The ability to seek a favorable climate and environment is limited to the few, but fortunately experience has demonstrated that the incipient will recover in a large percentage of cases by proper care in his own State or county. In this State there are numerous localities, some known and many untried, where excellent results can be obtained.

The immediate imperative demand is for more extensive care of the poor consumptive. There is little encouragement now to provide greater opportunity for common-sense treatment if the disease is not recognized until too late to secure easily obtainable results. At the present time there are more institutions for the care of incipient cases than seem to be needed. If the demand for enlightened care and greater accommodation for the earlier cases were made by the physician and the sufferer, comprehensive plans for relief could be devised and executed. This State (New York) has inaugurated the movement and the experiment has proved to

be a complete success. More sanatoria designed for curable cases should be erected in this State, and we should count the inmates by thousands instead of hundreds. The buildings and the equipment can be and should be made inexpensive. The model sanitarium for the poor in the future will be the one which costs the least and accommodates the greatest number. The money will be spent for food and not for luxurious buildings and rooms. Every dollar wasted helps to deprive some unfortunate of a chance for his life.

A physician qualified to conduct a sanitarium according to modern methods can obtain better results if you give him a barn with enough openings and a kitchen than some of the county and city hospitals where the old routine is followed. Young men trained in the diagnosis of tuberculosis and the methods of sanatorium care are greatly needed in this country. The development of State care alone will necessitate this new class equipped with expert knowledge. Good results are obtained in apparently unfavorable climates if simple rules of management and the introduction of essential requirements are combined. The place to study methods of control and treatment is at a hospital for incipient consumptives, not a home or boarding house falsely called a hospital, where advanced cases wait for death. There are great advantages to be derived by sending the poor consumptive of the curable class some distance from home to an institution favorably located within relation to helpful influences. Visiting and distraction are obviated, more strict control is possible, and the patient realizes that he must devote months to one object.

I have on several occasions presented arguments to show that the care of the early case should be intrinsically a State problem, and time and experience strengthen the hope and conviction that the State will ultimately be gradually forced to assume the charge. Our battle for improved care of the consumptive is not won, because we lack harmony in ideas and unity of purpose. One urges home treatment, another would devote all care to advanced cases, many would confine all action to prevention, and some in the rear ranks want to try one more alleged remedy or are waiting for the discovery of a specific curative agent.

At present the revival of tuberculin treatment in the form of small doses administered through a long period seems to be gathering force for a wild sweep over the land. At times the history of medicine seems to have been written in vain, and all the grim wrecks strewn along the crooked path of progress are totally disregarded. The widespread, general, and indiscriminate use of tuberculin will cause infinite harm. The fact that the dose advised is so small that no direct ill-effects will follow is not the question involved. A danger lies in reliance on a form of treatment which, if used alone, will prove disappointing. Patients unwisely selected for this treatment are being kept at home, while months are consumed in the trial of a new method, and the fact is unheeded that those who have had sufficient experience to form any judgment of its value have employed the remedy in carefully selected patients, who also enjoy the beneficent hygienic conditions which are known to be the most successful.

The results, when any are claimed, are rather indefinite and to a certain extent assumed. Tuberculosis is preeminently a disease of exacerbations and lulls, and this fact coupled with the mental effect produced by any new treatment accounts largely for remarkable results observed by enthusiasts. It would be difficult to devise a method of treatment more financially remunerative to the unscrupulous and selfish physician. An excuse can be offered for keeping the patient at home indefinitely and the necessity for making a prompt diagnosis and sending the patient elsewhere is avoided.

The great white scourge must be attacked by manifold measures, and the problem is colossal. Science must be blended with pity, charity, and remorse. The results of stupidity, apathy, and neglect must be met and remedied. The dangerous consumptive is the neglected consumptive. The unafflicted must be protected from the living dangerous victim, who typifies the accusing appalling proof of inaction, and the hopeless wreck should have his tottering, weary journey to the grave made as easy and gentle as the "ebbing flow of life" will permit. The hope of redemption and the result of the chief struggle in the conflict will depend principally upon one fixed resolve.

Find the consumptive at the right time and help him in the right way until he is well. If you ignore or neglect him too long pay the full penalty by protecting the public and helping the poor victim until he is dead.

Buildings for the care of the incipient consumptive have been and will be erected in many States. The medical profession must learn to recognize the victims of the disease before these institutions can fulfill their purpose.

At one time most of the consumptives died because they were poor. Now most of them die because of ignorance and apathy. The medical profession needs education as much as the public. "Volleys of eternal babble" will not conquer consumption. There has been plenty of talk—what we want now is action aroused by a saving sense of duty and governed by common sense.

SOME POINTS IN MEDICAL EDUCATION CONSIDERED FROM THE STANDPOINT OF THE STUDENT.

By BENJ MICHAILOVSKY, B.S.,

NEW YORK.

Of late years the members of the medical profession of this country as well as of Europe have begun to feel more keenly the essential similarity of their interests and the advantage of protecting these by concerted and cooperative action. The endeavors to obtain an exact definition of the term "practice of medicine" by the legislative bodies, the defence of the public against quacks and charlatans, the cooperative efforts in protecting physicians from blackmailers, all serve as examples of the new spirit of solidarity in the profession. More important for the progress of medicine in this country, however, has been the growing inclination of the great professional body to take interest in and to supervise the educational institutions that give or claim to give a training in medicine. This spirit has already led to much improvement in obtaining equivalent requirements for admission to the various colleges and in weeding out some few institutions that have carried on their work without proper facilities for instruction—being mere diploma mills to a greater or lesser degree in each individual case. At the same time the methods of instruction in the legitimate institutions have undergone much radical change tending toward a more rational and effective training of the students: didactic lectures have large-

ly given place to recitations, objective and clinical teaching has been enlarged in scope, and better facilities have been introduced for the scientific observation of the phenomena of disease and their study by the newer laboratory methods. This is not the place to recount the great progress obtained by the means outlined above; everyone conversant with the subject has seen the growing success of the American profession in the science of medicine and the increased efficiency of the average college graduate of to-day.

The whole educational system is, however, still in the making, and frank consideration of the methods now in vogue is certainly in order, so that individuals may take stock of the progress made. This article accordingly will be an attempt to consider from the standpoint of the student, however incompletely, some points in the preparation of the student for the medical course, in the recitation versus the lecture system of instruction, and in the qualifications of the teachers of medicine, the material having been gathered by observation of the teaching methods in Europe and America and some experience in the application of them.

Perhaps the most surprising phenomenon presented by an average medical class, consisting for the most part of college graduates or men with an equivalent amount of preliminary training, is the almost total inability of the students to make use of modern languages to the study of which they had previously given from two to five years of their time. It is startling to learn that hardly a student in a class can look up a reference in the German or the French language, or ask of some foreign patient the few words about the symptoms of his disease or the seat of his pain. Often enough one hears that the language ability is a matter of race and nation; this is perhaps true so far as real knowledge of a foreign language is concerned, but it has been the experience of the writer that such national limitations apply but little to the elementary knowledge of languages, and especially to the reading knowledge of them. Moreover, no body of cultured men ought to be satisfied with such a *testimonium paupertalis* as an explanation of their ill-success in one branch of human knowledge. If a few students only were to show this deficiency the explanation might have been individual; because the great majority show it, the explanation is to be sought not in the conscience-easing national disability, but in the one factor more nearly affecting all the students in a similar fashion, in the methods, namely, that are used in teaching foreign languages. Too often the latter are made mere excuses for training in the rules of formal grammar the reverence for which has come down to us from the casuistical days of old, or mere dry-as-dust work with dictionaries and texts is continued to the degree of producing hate for all language study. The real "fruit-bearing stage" is never reached, the love, that is, for the beauties of a foreign literature or the familiarity with the every-day talk of the people. This is not the place to discuss the methods of teaching languages, but certainly the senior college student, who has decided to take up medicine on graduation, ought to be given special opportunity to acquire the reading knowledge of one foreign language at least, namely, German, that forms such an asset in the intellectual, if not commercial, success of a physician.

Another matter often noticed by the instructors of medicine is the weak impression that the academic courses in natural philosophy have apparently left upon the minds of the students in so far as the formation of a scientific attitude of mind is concerned. Many a student well remembers the formal data of science or can reproduce in his mind the vivid picture of some sensational demonstration he had witnessed, the conversion of a diamond into ash, let us say, the oxyhydrogen blow flame consuming a steel sword, or the mass of mercury frozen into a solid cross by the action of liquid carbonic acid gas and triumphantly lifted aloft by the professor of chemistry; yet he is unable to recognize the chemical and physical principles when confronted with them hidden in the structure and functions of a living organism. The phenomena he has watched *in vitro* appear unfamiliar when made manifest *in vivo*, because he has not been taught to realize the application of the principles evolved from the study of formal science, nor helped to bridge over the gap between the laboratory on the one hand and the healthy or the diseased organism on the other. This gap becomes yet more apparent at another period of the medical course, in the transition from the fundamental studies, like anatomy, physiology, and pharmacology of the first two years to the subjects more directly concerned with the human body in disease. Parallel with this may be observed the poor training that the students have had in working things out for themselves, in looking up a subject even in their native tongue, in using indexes, tables of contents, reference books, in availing themselves, in a word, of all the tools of a worker in practical or scientific medicine. It is quite instructive, in this connection, to watch the undergraduate medical student in the libraries connected with the college or in such institutions as the library of the New York Academy of Medicine; usually he may be observed wandering about for a few moments, only to settle down at last with the identical text-book before him, prescribed for him in the college. Lucky he is if that book represent the work of a teacher and an authority in medicine, for often enough it is only a compend of the subject. Nor is such helplessness indicative of lack of interest, for no young man is more enthusiastic than the young student of medicine; the whole trouble lies in inefficient training in just such independent work while in an academic institution.

Turning now to the education in the medical college proper, it will perhaps pay to state at once what in the writer's opinion is the weakest point of the whole system. This is the widespread ignorance of the laws and principles of pedagogics on the part of those whose occupation to a certain degree consists in the exercise of that art. Men usually become teachers of medicine after a hospital course and some years of practice, and their knowledge of the subject matter need not be questioned. But the knowledge of the subject matter is but one-half in the teaching of a subject; if it is not combined with the ability, whether natural or acquired, to impart it to students, it is so much dead ballast as far as its educational possibilities are concerned. It may be of the greatest benefit to the doctor or to his patients, but it will not teach medicine to students. Medical knowledge is written large in many dead books, medical teaching power lies in the brains of living men. Nor is such power anything hard or impossible to attain. There are some that are born teachers and their path is easy; there are some that never can become teachers and their path may be easy too, if they only keep out of the teaching profession; the great majority, however, are men that can learn the science and art of

teaching just as they have learned the science and art of medicine, only they must take the time and have the desire to do so. A teacher of physiology or of biology in a high school, for instance, is required to know his subject and then give fair proof of having studied the art of teaching; a teacher of the same subjects in a medical college, where they are incomparably more important, need only have the knowledge, the teaching power is supposed to go with that.

Let us consider the results that follow such a condition of affairs. The lecture system has been abolished in many departments, because it is too didactic a method and gives least opportunity for individual instruction. How often, however, the only change produced has been that lectures are now delivered to an audience of twenty to thirty students gathered in a "recitation room" instead of to two hundred men gathered in a "lecture hall." In such cases the old lecture system had the advantage of economy in men, time, and space. Such result, of course, is due to the one thing mentioned above, the lack of training, that is, in the art of education on the part of the instructors. In this "recitation room" an earnest worker, who has never, however, considered educational methods, literally dictates the subject matter to his students, using only the last few minutes for the discussion of the subject and the asking of questions. How much better were it to provide the students with a fairly complete *résumé* of the subject, have them read up the matter in the books of reference, thus forming an "apperceptive mechanism" in their minds for the reception of new knowledge, and then deepen and illuminate the facts they have obtained by judicious and logical questioning. Another instructor calls out some favorite name in the class, approaches the owner of it as near as possible, asks him some question, and then spends ten to twenty minutes in discussing it with him. These few minutes may be very profitable to one or two students called up each recitation period, but the rest of the class is meanwhile conscious only of the uncomfortable seats or the bad light, or have fallen into that state of mental vacuity that so often is but the reflection of inefficient teaching in the minds of the students. Yet the pedagogical principles involved are perfectly plain and simple. Let the question be asked first, before any name is called, so that in every mind the almost reflex attempt at formulating an answer may begin. Then call upon some one for the answer, quickly drawing other students into active thinking participation in what now may become a recitation indeed. It is, of course, obvious that every successful teacher must develop the ability to carry on so-called "socratic questioning," the faculty, that is, to frame questions so as to wake up the greatest possible number of associated ideas in the mind of the students, helping them on with the logical answer without giving it away, as is so often done. This requires the power of using the native tongue well—certainly a little thing to ask of a teacher.

Certain conditions surrounding instruction in the higher institutions serve to keep the instructors quite ignorant of the degree of success that attends their teaching efforts as well as of the pedagogical correctness or non-correctness of them. Anyone who has ever spent a few days in an elementary or a high school knows that no instruction is possible there without the maintenance of discipline in the class; everyone knows at the same time that such discipline, in the long run, can be obtained only by correct educational methods that attract the involuntary attention of the children, stimulate their interest in the work, and keep them thus out of mischief. Quite a different state of affairs reigns in the domain of an instructor in a medical college; no "spit-balls" fly about, if his teaching does not attract the attention of the class; no blank caps are exploded, no cat-calls are heard, if he chances to turn his back. A man may thus plod along for years and years in blissful ignorance of his ineffectual work as a teacher, being only occasionally startled in his peaceful career by the number of failures in the year-end examinations. Much is said nowadays against the private "quizzes" that exist about the medical colleges, and it is perhaps true that they tend to separate the student into two camps, and are apt to give too much respect for the "practical knowledge" of medicine and for hospital examinations. Yet quizzes exist largely because instruction in the colleges is not good enough: as they are commercial enterprises, little sentiment is attached to the selection of the quiz-masters, and the men doing the work are among the best teachers of medicine. The same "natural selection" could be well imitated in the college by allowing the students of the last two years to select their own instructors somewhat in the manner of the "privatdozent" system in Germany, whenever parallel courses in the same subject exist for the various sections of the class. Such power of choice may be safely intrusted to the students of the third and the fourth years, if the college authorities extend their endeavors to raise the average mental caliber and preparation of the students more often beyond the admission requirements. At present, after the ordeal of admission is safely passed, the gates of the college are somewhat too widely open for the entire four years to such as are willing to study medicine; perhaps a little more rigorous selection of those that are not only *willing* but *fit* to study medicine at the end of their first or second years might keep the average higher and prevent such a drag upon a class as great differences between its individual sections. No tears need be shed over those that may be compelled to leave the better colleges at the end of their first or second year; just as there are private tutors and special preparatory schools a-plenty for the unsuccessful in the regular institutions, so there will always exist medical colleges satisfied with a lower average of their students, if only their tuition fees be paid regularly, and their ability be not below the "quiz-compends" used in preparing for the State license examinations.

Thus it becomes evident that the knowledge of the pedagogical principles, as they are taught in our normal colleges, and daily used in the schools of the land, are just as important to the teacher of medicine as to the teacher of arithmetic or geography. However different the subject matter, the content of knowledge, the attitude and the processes of the human mind are very much the same, and may be reduced to the two fundamental principles of induction and deduction. Let but the insight into these processes, as they go on in the minds of the students, be acquired by the instructor, the teaching ability will not fail to follow, while the question of method will become easy indeed. There are many workers whose efforts have introduced new and efficient procedures into all branches of teaching. In medicine one might cite the case method: the students are given good histories of real cases of disease and attempt to gather from these the

pathological conditions responsible for the phenomena, until a working diagnosis is arrived at. Using now a more or less deductive method, the students discuss the symptoms that should have been present, if this diagnosis is correct, and compare these with the history. If the case has been followed by an autopsy, the objective findings serve further to justify or break down the diagnosis made. This method, first used by Dr. Cabot in Boston, has been adopted by other workers, and should certainly be tried in connection with the more descriptive and orderly book work. Just the same warning may, however, be repeated: the mere adoption of the method may not be expected to lead to the results desired; behind it must stand the skillful and well-trained teacher, for the sharper and more efficient the tool, the more skillful must be the user thereof.

A few words will suffice as far as lectures are concerned. There certainly ought to be no longer any room for the old didactic type of lecture, written for a former generation, and repeated year in, year out, sentence for sentence, joke for joke, to those that have no access to the usual well-worn copy of them that goes the rounds of each successive class. Such lectures not only waste the time of the students, but give rise, in addition, to a false feeling of security in the subject treated; there is little temptation to go beyond them to books, it being usually assumed that they are sufficient to pass the requirements of the examinations. There is ample room, on the other hand, for another type of lectures that require no note taking, but gain the undivided attention of the hearers by the mere interest of them. I refer to general lectures introducing the science of medicine and its main divisions, or treating of modern ideas and modern progress in that art and science. Presented in a perfunctory way, such lectures are, of course, worse than useless; they require, indeed, mastery of subject and language, but in such a case their value in engendering and stimulating the interest of the students can hardly be overestimated.

When we turn to the later years of the student in a medical college, we meet with about the same picture in a somewhat different setting: the application or the neglect of the principles outlined leads in the one case to a great success in the teaching value of a clinic, in the other makes it a useless procession of patients that accident has brought together in that room at that time. One demonstrator gives the diagnoses away even before the patients are brought in, proceeding to name the symptoms without illustrating them on the real case present; the students, no longer interested since the keyword has been given, passively listen to the demonstrator and promise to look up the matter in their books. Another man, this time a teacher, selects the cases so as to illustrate a few conditions only, shows, perhaps, other cases at the same time, similar in many respects, yet manifesting some differences that throw the others into a striking contrast, has all his hearers on the *qui vive* for the understanding of the phenomena presented, and thus teaches the most difficult and the most important art in medicine, the art of diagnosis. To conduct a clinic thus will require, of course, an extra amount of preparation, a careful selection of material, and in some cases the moral courage to transfer the duty of demonstrating to some younger man, who may have better insight into the difficulties of the students, though his name in the medical directories be followed by little more than the place and the date of his graduation.

Another matter concerns the position of the hospital in medical teaching. No one will deny that at present a great deal of valuable material is not utilized for scientific investigation or for teaching purposes merely from the lack of men to do a certain amount of routine work. Yet what has become mere routine work to a laboratory man or to the "house physician" is new and full of interest to a third or a fourth year man. Moreover, the students ought to do some of the work now left entirely to the nurses, such as the taking of temperatures, the counting of pulses, the tubbing of typhoid cases, perhaps, and the like. The maternity hospitals provide accommodations for the students during the eminently practical course they give, and it would seem feasible for the general hospitals to do the same, so that a few men at a time could be made responsible for the welfare and general management of some specially selected cases in the wards. At present many of the things mentioned are left to be learned during the hospital internship, where the time could be used for better purposes; many students, too, are unable to take the hospital training and would be greatly benefited even by a short stay in the hospitals during their student days.

One more subject remains to be considered, and that is correlation of studies. It may be granted that four years is a short period of time for a modern medical course, but a great economy of time and effort could be obtained by presenting the several branches of study in their proper relations to each other both in time and the manner of teaching. Often enough, to give specific instances, the therapeutics of some diseases are taught before the clinical picture is presented, an outdoor obstetrical course is given before the student has had the opportunity to witness model deliveries in a hospital, or, what is perhaps more important, a class studies "inflammation," let us say, talking glibly of leucocytes, giant cells, etc., knowing these elements by little more than the mere sounds of their names. Of course proper correlation of studies and the use of more objective methods of instruction would do away with such anomalies. Again, the growth of the various branches of medical science, both pure and applied, with the inevitable specialization demanded by it, has in many instances given rise to a curiously narrow disinclination on the part of some instructors to consider any phenomena not directly bearing upon the subject of their department. But the pure scientist or the specialist engaged in the teaching of medicine must never lose sight of the fact that his subject is presented as a part of a general medical course and must be connected in every possible fashion with the other studies, so that a student may obtain as well balanced a course of study as is possible in the present state of our knowledge. The inculcation of love for the pure science of medicine requires enthusiasm on the part of the instructor and special aptitude on the part of the students, while mere narrowness in presenting a subject may only strengthen the deplorable tendency seen in many students to give from the very beginning special attention to some one branch of study to the virtual exclusion of the rest; this tendency may later be responsible for the half-baked specialists or the ill-considered attempts at "research" so frequently met with nowadays. Any legitimate interests of individual students in some special branch of medical work should

be met by providing advanced optional courses in the various departments for the student of the last college year, the time for which could be easily found, if the constant waste due to lack of correlation and to inefficient teaching be done away with. The various scientific, clinical, and pathological laboratories ought to provide opportunities for a few men, who have shown special fitness, to acquaint themselves in a general way with the principles and practice of modern scientific work; nothing could be as effective in bringing out any latent interests or abilities of the students, thus helping to provide future workers in special medical branches and saving many a man the bitter experience of work in an uncongenial field at a time when change may become difficult or impossible. To forestall as much as possible ill-considered selection of special work, an advisory committee of instructors should be formed that would provide every student with the opportunity of obtaining the counsel of men of riper age and experience in regard to his career in the college or on graduation. Such opportunity exists in the private quizzes, and the above provision with the increased efficiency of recitations would serve to incorporate into the regular course the good elements of the quizzes and thus go far in obviating the reasons for their existence.

To recapitulate: the present improved methods of medical teaching fall very far short of the possible achievements that might be obtained for two great reasons. In the first place, the student body is but indifferently prepared for the reception and use of new knowledge; the remedy, of course, lies in more purposeful teaching in the academic courses. In the second place, those who are to make use of the means and methods of instruction are not sufficiently conversant with the general fundamental principles of pedagogics; the remedy for this lies in individual recognition of the fact and attempts to correct it, or in the establishment of special educational courses in the universities, of which the medical college may be a part, and elsewhere. In addition, the general arrangement of the medical course ought to be so modified as to allow the greatest possible opportunities for correlating and harmonizing the various branches of instruction, thus assisting in the final end and aim of the work, the adequate preparation of young men in the art and science of medicine.

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THE TERM "STAUUNGS-HYPERAEMIE."

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Since the advent of Bier's treatment by hyperemia, the English speaking scientific world has been casting about in search of a concise descriptive term in its own tongue, with but questionable success.

We find a number of adjectives used to qualify this hyperemia, such as obstructive, artificial, passive, congestive, and venous, as also the noun, stasis-hyperemia. These terms are all open to the same criticism in that they fail to give a mental picture of the mechanics of Stauungs-Hyperaemie; stasis-hyperemia besides conveys a scientifically wrong impression.

To the philologist there is nothing more apparent than the fact that where one language possesses a single word descriptive of a condition or thing, another language, in order fully to convey the same idea, may have to use a phrase or a whole sentence. The Germans at times apparently avoid this by forming a colossal word by the agglutination of several components.

Now the condition present in the partial obstruction of venous outflow with a retained arterial ingress, the amount of blood thereby being increased in the part, but the circulation thereof never ceasing, is perfectly expressed by the German term *Stauungs-Hyperaemie*, and but inadequately or falsely expressed by the use of any two-word combination in the English language that we have seen so far in literature.

I think for this reason it were well to take over bodily this term into our language rather than use any of the English terms which but ill portray what we desire to express.

Use of a Ventral Bandage During Labor.—Vallee ascribes great assistance in the progress of labor to the use of a firm, wide bandage placed about the abdomen early in labor, combined with the use of the horizontal position in bed from the first true labor pains. The author discovered the value of this method accidentally, but has made use of it with excellent results since then. It is found to expedite labor markedly. The uterus is so placed that the head is applied with the bag of waters in the center of the pelvis. Pains become regular and powerful coming with increased rapidity, and labor is complete in a few hours. The bandage is so placed as to exercise a constant pressure on the uterus, and it forms a point of support for the contractions. No bad effects are found in the infant from the pressure exercised by the bandage. As the last stage begins and the pressure of the bandage is too high up, it should be assisted by pressure from the hands of an assistant, which follow down the body of the child. The pain of the contractions is much lessened by these maneuvers, and the patient is much less fatigued than usual. The bag of waters is kept intact until the last moment, and it is due to its presence and normal dilating action that labor is hastened. The placenta is much flattened and is delivered rapidly, without much hemorrhage. The method has been used with success in all presentations of the fetus.—*Journal des Sciences Médicales de Lille.*

Continuous Generalized Spasms and Acute Encephalitis of Infants.—Orazio D'Allocco describes acute encephalitis in infants as a malady that is generally met with in the chronic stage of paralysis owing to the quickness with which the acute symptoms pass and the obscurity of the symptoms. The disease comes on as a general infection, with fever and symptoms of brain irritation. A continuous, uniform, rhythmical clonic spasm comes on. The limbs are flexed and head extended. This condition is soon followed by paralysis without spastic condition. Electric excitability is increased, and there are no trophic disturbances. There is a stimulation of the central convolutions and central lobules of the one or both hemispheres. As long as the stimulation goes on the spasm continues, but when it is over paralysis supervenes. The condition may be of traumatic origin, or a true infective malady. The single autopsy obtained by the author showed that there was an occlusion of the blood vessels, for the most part venous, sometimes produced by true embolism and followed by acute inflammation or degeneration. The condition is analogous to anterior poliomyelitis. Most of the cases observed by the author were in rachitic babies and in the winter and spring. In the child, the babe, and the fetus, the causes of encephalitis, are not the same as in the adult. The venous system is more developed than the arterial; thrombosis of trunks and secondary branches is frequent and does not destroy life.—*La Riforma Medica.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE MEDICAL OFFICER IN THE NAVY.

THE Government Printing Office has recently issued a pamphlet containing the reports of the sub-boards, composed of officers of the Medical Corps, the Pay Corps, and the Engineer Corps, which the Navy Personnel Board ignored in the report which it made to the Secretary of the Navy. The recommendation of the medical sub-board, composed of Surgeon-General Rixey, Medical Director G. E. H. Harmon, and Surgeon J. F. Leys was that the Surgeon-General and three of the present Medical Directors have the rank and title of Rear Admiral, the remaining twenty Medical Directors to be Captains, the twenty-five Medical Inspectors to be Commanders, one hundred surgeons to be Lieutenant-Commanders, and 197 Passed Assistant and Assistant Surgeons to have the rank and title of Lieutenant and Lieutenant Junior grade, respectively. In making these recommendations the members of the sub-board argue that the withholding of military titles confers an equivocal rank on a medical officer "which places him in an anomalous position in his relations with officers and men of the navy, with officers of the army and other military organizations, and with civilians." They say also of the recommendation that the Surgeon-General and three other medical officers should have the rank of Rear Admiral, that there is no good reason "why flag rank should not be open to officers of the Medical Corps of our navy as in the navies of the other great nations of the world, or why they should be denied a just share in the higher honors toward the end of a lifelong service in the navy."

The publication of these suppressed reports of the sub-boards of the Navy Personnel Board at this particular time is interesting, if not significant, in view of the controversy regarding the medical command of hospital ships which is said to have led to the resignation of Admiral Brownson as Chief of the Bureau of Navigation. The immediate occasion for Admiral Brownson's resignation has not been announced officially, but it is said to be the order assigning Surgeon Charles F. Stokes to the command of the Hospital Ship *Relief*, in spite of the strong protest of the Chief of the Bureau of Navigation against giving command of a ship to a staff officer without military rank or title. This order has brought the dispute over both these subjects to an acute stage.

That the members of the Medical Corps shall be in command of the hospitals of the navy is a statement that can admit of no question. They are held responsible for the care of the sick and wounded, but the idea of responsibility without authority is farcical. The comparison of the medical histories of the Hispano-American and the Russo-Japanese wars is a little hackneyed, but its lessons must not be forgotten. If it is admitted that a naval hospital on shore should be in command of a medical officer it is evident that a hospital on sea should be under the same control. It is not contended that the navigating officer of a hospital ship should be a medical man, though it is as reasonable that he should be as that a line officer should have authorty over the medical treatment. To the civilian mind it seems perfectly feasible to entrust the navigation of the ship to officers of the line while the supreme command rests in a medical officer of superior rank. And this could be if the medical officers had military rank and title equally with the officers of the line, as the sub-board recommends. The *Relief* was formerly an army hospital ship and then was always in command of an officer of the medical corps. Furthermore, as Surgeon-General Rixey has recalled in discussing the appointment of Surgeon Stokes, a joint board of army and navy medical officers, convened by Executive order more than a year ago to attempt to unify the medical service as much as possible, recommended that hospital ships should be commanded by medical officers, and the recommendation was approved by both the Secretary of War and the Secretary of the Navy in general orders. The Japanese naval ships were first commanded by line officers, but later the command was turned over to the medical corps with most satisfactory results. It will, no doubt, ruffle the dignity of some of the young men just out of Annapolis to be placed under the authority of medical officers of twice their years, but after they have recovered from the shock they will find that their dignity has received no fatal wound and that the sick sailors have a better chance of recovery and of an early return to duty when their treatment is not subject to revision by a layman.

A MODERN CORNARO.

"DIVINE sobriety, friend of nature, daughter of reason, sister of virtue. . . . It is the root of life, of health, of joy, of address, of skill, and of every action worthy of a noble mind." In such words did Luigi Cornaro, four hundred years ago, praise the virtue of abstemiousness, to the practice of which for forty years he attributed his hale and hearty condition at the age of eighty. At forty he was a man of ruined life, broken down in health, and condemned by his physicians to speedy dissolution unless he abandoned the habits of gluttony and irregular living which had brought him to this wretched state. After a struggle with his appetite he adopted the counsel of his medical advisers, reduced his daily allowance of food to twelve ounces, and within a year found his reward in the enjoyment of health of body and serenity of mind to which all his life he had been a stranger. "Divine mastication," sings Horace Fletcher to-day, and in less rhapsodical but no less fervent terms lauds his system of thorough chewing and of eating only when hungry, to the practice of which he

attributes the health and really remarkable power of endurance which he enjoys. Ten years ago he was a rejected candidate for life insurance, and to-day, at the age of nearly sixty, without special training, he is able to perform "stunts" which are far and away beyond the power of young athletes in active training.

In the *Popular Science Monthly* for December Professor Chittenden of Yale University publishes a report of certain tests of strength and endurance to which Mr. Fletcher was submitted under the direction of Dr. Anderson, director of the Yale gymnasium. One of the tests was made with the Fisher dynamometer, an instrument designed to measure the endurance of the calf muscles. The strength of the subject is first ascertained by one steady contraction and then the endurance is tested by contracting the muscles against three-fourths of the ascertained limits of his strength as many times as possible at intervals of two or three seconds. Mr. Fletcher's strength was found to be capable of lifting about four hundred pounds in this machine, and in the endurance test he raised three hundred pounds 350 times. The average record of 18 Yale students with the same machine was 87.4 lifts, the extremes being 33 and 175. Thus Mr. Fletcher, with the disadvantage of some forty years, doubled the best record of his youthful competitors. During this test the subject's pulse rose from 75 to 120, but fell within five minutes to 112, and at the completion of the test the hands were steady, and the control of the right foot and leg used in the test was normal. Other tests were made during six days, of quickly climbing 32 spiral steps, trunk raising from 50 to 100 times, trunk bending so as to touch the floor with the fingers without bending the knees 60 to 300 times, lifting 25-pound dumbbells 5 to 10 times, "running in place," that is, alternate knee lifting to the extreme possible height, for one minute at a time, and rapid extension of the arms upward, outward, and downward for three minutes. Neither during nor after these trials, Dr. Anderson reports, were there the slightest evidences of soreness, stiffness, or muscular fatigue, and "during the thirty-five years of my own experience in physical training and teaching," he adds, "I have never tested a man who equaled this record." Mr. Fletcher claimed to have done no training nor to have taken any strenuous exercise since February, 1907; the tests were made in June of the same year. Four years ago, after he had been following his masticating system for five years, Mr. Fletcher was submitted to tests similar to these later ones, and then, it was reported, he was "able to do the work of trained athletes and not give marked evidences of overexertion." Comparing the results of the two tests, Dr. Anderson says: "The latter tests, given in June, 1907, were more taxing than those given in 1903, but Mr. Fletcher underwent the trials with more apparent ease than he did four years ago. What seems to me to be the most remarkable feature of Mr. Fletcher's tests is that a man nearing sixty years of age should show progressive improvement of muscular quality merely as the result of dietetic care and with no systematic physical training."

It seems a little hard that a man who is able to give such remarkable proofs of physical endurance and of progressive improvement therein with increasing age should not be allowed his own pet explanation of the phenomenon. He attributes it to his habit of thorough mastication and automatic swallowing, together with abstention from food until driven thereto by the demands of hunger. Chittenden, however, dismisses this claim with a word and deduces from Anderson's report a proof of his own contention that the real requirements of the system, for protein especially, are only about one-half the amounts called for by the usual dietary standards. Haig, also, commenting in the *Edinburgh Medical Journal* for December upon the result of these tests, makes light of "Fletcherism" as a system and says that it increases power and endurance only because it leads to a diminished intake and a diminished formation of uric acid. "If the success of Fletcherism is due to the chewing," he says, "to what is the similar success of the vegetarians due?" He recalls a long-distance walking match held in Berlin in July, 1907, in which there were twenty-nine starters, fifteen vegetarians and fourteen mixed feeders. Of this number only six came in at the finish, and five of these were vegetarians, the sixth and last being a mixed feeder. The comparison is not very apt, for the tests were different in character, and Fletcher, moreover, is a mixed feeder and not in any sense a vegetarian. We have no record of any endurance tests by Cornaro, except that he lived to the age of 102 years, which is something of an endurance in general; but he, too, was a mixed feeder, his daily ration consisting of rolls, eggs, meat, and soup. The vegetarians, as such, are out of the counting, and the palm for endurance of life and muscular endurance must be given to the abstemious. The advocates of total abstinence from alcoholic beverages will find little comfort from the example of either of these enduring men, for Fletcher makes no pretense to anything more than temperance in the use of alcohol, and Cornaro allowed himself the generous amount of fourteen ounces of wine daily.

Even Chittenden's explanation is far from satisfying the sceptic. If abstemiousness is the only reason for his great endurance, why should Fletcher so far outclass in this respect all those living experimentally on Chittenden's half rations, and why should there not be hosts of his equals or superiors among the many submerged millions in this land of plenty who are chronically underfed—or normally fed according to Chittenden's dietary standard? Until it has been disproved, it is but fair to concede Fletcher's claim that good chewing is at least partly responsible for his condition; it is as worthy of acceptance as Haig's or Chittenden's, and as little proved by Fletcher's endurance tests. The true explanation of the phenomenon probably is that Mr. Fletcher is a somatic freak, comparable to the mathematical prodigies and other mental freaks. His endurance performances are so far ahead of anything on record as to put them outside of the normal and in the class of prodigies for which he is only in a measure responsible; his abstemiousness and his excellent digestion, dependent upon com-

plete mastication, have not created his powers, but have only developed and served to perfect the physical talents with which he was originally endowed above his fellows to an abnormal and so to say freakish degree.

The Prevention of Postanesthetic Pulmonary Complications.

In spite of the undoubted advantages that spinal anesthesia possesses in certain cases, and in spite of the efforts that have been made—particularly in Germany—to extend the indications for its application, it is clearly evident that for routine use the inhalation of ether still forms the most available method of securing insensibility to the pain of major operations. A great deal has been accomplished by means of special apparatus or methods of administration in making the induction of the anesthetic state less disagreeable to the patient and in diminishing the immediate dangers of the procedure, but the risk of postoperative pulmonary complications is still far from insignificant and demands every effort for its reduction. The suggestion of attempting partially to disinfect the mouth and upper air passages by means of washes and inhalations before the operation is not new, but the advantages of this precaution are reiterated with much emphasis by Otte in the *Münchener medizinische Wochenschrift*, December 10, 1907. Since 1900 no cases of ether pneumonia and very few instances of milder bronchial disturbance have occurred in the Osnabrück Institute of Midwifery owing, in the author's opinion, to the fact that on the evening before the operation, immediately preceding and following the anesthesia, and during the convalescence, the mouth is rinsed with an antiseptic solution and steam inhalations with thymol and salicylic acid are practised for a half hour at a time. By this means the mucous membrane of the respiratory passages is said to be rendered less susceptible to the irritant effect of the anesthetic and the secretion of mucus is much reduced. Importance is also attached to the manner in which the ether is administered. This is done by means of the Juillard inhaler, though any other would serve equally well if it possessed the cardinal requisites of permitting accurate control of the concentration of the ether vapor and of absolutely preventing the inhalation of minute droplets of ether. A further advantage claimed for the postoperative steam inhalations, which the patient is encouraged to practise as deeply as possible, is that they favor thorough expansion and aeration of the lung and therefore improve the pulmonary circulation. While such precautions add not inconsiderably to the details of preparation and after-care, they seem theoretically well founded and practically effective, so that the advisability of their more general adoption is worthy of consideration.

The Use of Sulphur in Dermatology.

Although recognized as one of the most valuable remedies for many skin lesions, sulphur is sometimes criticised as being somewhat unreliable in its action. While usually exceedingly effective, it at times falls short of what is expected of it in a manner not wholly explicable by the possible individual variation in different cases. Riecke (*Deutsche medizinische Wochenschrift*, December 12, 1907) ascribes this largely to the difference in the size of the sulphur particles contained in different preparations, the larger the crystals the less active being the application. Stich has investigated this matter and described in the *Pharmaceutische Zeitung*, No. 75, 1907, several methods of obtaining ointments in which the sulphur is in a state of extremely minute subdivision. The one of these that Riecke has found most satisfactory is made by freshly precipitating a solution of sulphurated lime and triturating the still moist precipitate with an ointment base in such proportions as to form a thirty per cent. ointment. Riecke states that this preparation is unusually satisfactory in the treatment of scabies, acne, seborrhea, and parasitic affections, and in fact whenever sulphur is indicated, its increased potency being due to the very minute state of subdivision of the active agent and the large proportion present. The ointment, it is stated, can readily be prepared by any druggist, and the attempt is being made to have it incorporated in the next edition of the German Pharmacopœia.

News of the Week.

Grip Epidemics.—Epidemics of grip of unusual severity have invaded the cities of Baltimore and Pittsburg, and in both places the number of persons ill is so great as to interfere seriously with the conduct of business, while the hospitals are crowded and the physicians overworked. In this city the number of cases is large, but the disease is of comparatively mild form. In Washington also the disease is widely prevalent.

Health Conditions in London.—The report of London's Medical Health Officer shows that for the County of London, with a population of almost five millions, the death rate for 1906 was only 15.1 per one thousand, which is lower than that of any city in England of over 200,000 population excepting Bristol and Leicester. It is also lower than that of Paris, St. Petersburg, Berlin, Vienna, Rome, Copenhagen, and New York. There is a marked difference between the rate in various districts. Hempstead's rate is 9.4 per thousand, while in Finsbury, which is one of the most crowded districts, the rate is 20.7. London shows the lowest infant mortality of all the towns excepting Bristol, but the deaths of children under one year old are 131 per thousand births, due mostly to intestinal disorders. There were no deaths during the year from smallpox, of which there were only 31 cases, the lowest record excepting in 1899. Scarlet fever, diphtheria, and whooping cough are decreasing, and typhus has almost died out. There were only 4 cases of it during the year, none of them fatal. Typhoid fever increased, and caused 290 deaths, as compared with 234 in 1905. The majority of the cases were traceable to the consumption of shellfish, especially cockles, and to the use of watercress. Pulmonary tuberculosis increased. There were 6,775 deaths from it, as compared with 6,622 in 1905. Cancer is also increasing, and was responsible for 4,589 deaths.

The New York Herter Lectures.—Professor Ernest H. Starling, Professor of Physiology in the University of London, will give the Herter Lectures of the year on the subject, "The Fluids of the Body," beginning January 6 at 4 P. M., and continuing at the same hour throughout the week at the Carnegie Laboratory of the University and Bellevue Hospital Medical College, 338 East Twenty-

sixth street. All interested are cordially invited to be present.

A Fund to Secure Christian Science Proselytes.—The officials of the Christian Science organization have announced Mrs. Eddy's intention of devoting the sum of $1,000,000 to the foundation of an institution to be known as "Mary Baker G. Eddy's Charitable Fund" and intended for the free instruction of the indigent in the principles of her cult.

Christian Psychology.—Bishop Samuel Fallows of the Reformed Episcopal Church of Chicago has enunciated the doctrine of what he terms "Christian psychology" by means of which he would have clergymen assist physicians in the treatment of such disorders as are amenable to influence by the patient's mental attitude. Among these he enumerates: Functional nervous disorders, hypochondria, sleeplessness, nervous dyspepsia, melancholia, mental depression, hysteria, neurasthenia, drug habits, want of self-confidence, irritability, worry, anger, fear, weakness of will.

Appendicitis Operation on Ocean Liner.—Another instance of abdominal surgery performed under trying conditions was reported when the Cunarder *Pannonia* arrived last Sunday from Mediterranian ports. A coal trimmer on December 23 manifested symptoms of acute appendicitis, and the ship's surgeon, Dr. J. Fraser Orr, decided that prompt operation was imperative. As there was a heavy sea on, the engines were stopped and the ship allowed to fall into the trough of the waves to lessen the pitching while the surgeon, with the aid of a medical assistant, removed an appendix that was found to be gangrenous. On reaching port the patient seemed in good condition and likely to have an uncomplicated convalescence.

Park Ambulance to Be Discontinued.—The Central Park ambulance that has been maintained by the city for twenty-five years is to be discontinued after January 1. Dr. Charles H. Goldsmith has been ambulance physician for seventeen years. The reason given by Park Commissioner Smith for abolishing the service is that the demands upon the ambulance did not justify the expense required for its maintenance. The average number of calls responded to is said to be about thirty-five a month.

Ambulance Accident in East New York.—A Bradford Street Hospital ambulance last Sunday was run into by a delivery wagon at the corner of Stone avenue. Both drivers were thrown from their seats and both horses ran away, but the surgeon, Dr. Michaelis, climbed out along the shafts of the ambulance, jumped astride the horse, picked up the trailing reins, and stopped the frightened animal. He then drove back to the scene of the accident, dressed the injuries of the two drivers, and proceeded to his original call.

Resignation of the Counsel of the County Medical Society.—Mr. Champe S. Andrews, who has been for many years counsel for the County Medical Society, has sent in his resignation and it has been accepted by the comitia minora.

Hebrew Charities Close.—The United Hebrew Charities, which gives assistance to about 40,000 persons annually, closed its doors temporarily last week because of a lack of funds. It is expected that the main offices, at 350 Second avenue, will be reopened on January 1, but the branches at 185 East Broadway and 149 Rivington street have been closed permanently. The trustees of the organization closed a third branch, at 91 Cannon street, about a month ago. The trustees decided a month or more ago that the resources of the Charities would permit of the expenditure of only $20,000 a month. That appropriation for December has been exhausted, and as a result the doors were closed for the remainder of the month.

Chicago Hospitals to Care for Emergency Cases.—It is said that the transformation of practically every big hospital in Chicago into an emergency institution for the care of the city's and county's patients is to settle the long-standing hospital problem. The county will thus foot the bills for all charity cases and the hospitals will collect from such patients as are able to pay for treatment. Under this plan the city would have more emergency hospitals available than under a plan proposed some time ago. It also would be relieved of the responsibility of paying the expenses. The county, it appears, is better able to pay such expenses than the city. The county is compelled by law to take care of all poor persons who need hospital and medical attention. It is said that many of the Commissioners of Cook County have already expressed themselves as favoring this plan, and it is considered certain that favorable action will be taken. A committee then will be appointed to arrange for the making of necessary contracts with hospitals. When this plan is carried out, the city still will be confronted with the question of a central emergency hospital in the down-town district. The suggestion that an emergency institution be maintained in connection with the Health Department may be acted upon favorably, as it would not interfere in any way with the county's plans for emergency hospital treatment.

Sydenham Hospital.—The following members of the Medical Board of the Sydenham Hospital resigned recently: Drs. E. Beer, H. Boldt, C. G. Kerley, L. La Fétra, S. Oppenheimer, G. Seeligman, A. Strouse, and A. Wiener.

Charges Against State Hospital Groundless.—The State Commission in Lunacy as the result of its investigation into the charges of brutality made against the attendants of the Manhattan State Hospital at Ward's Island has decided that the allegations were unfounded and has recommended that the pay of the attendants be increased.

National Association for the Study and Prevention of Tuberculosis.—The fourth annual meeting of this organization will be held in Chicago June 5 and 6, 1908. The organization of the sections has been arranged as follows: Sociological Section, Mr. Ernest P. Bicknell, Chicago, Chairman; Mr. Alexander M. Wilson, Chicago, Secretary. Clinical and Climatological Section, Dr. Henry Sewall, Denver, Chairman; Dr. H. W. Hoagland, Colorado Springs, Secretary. Pathological and Bacteriological Section, Dr. L. Hektoen, Chicago, Chairman. Surgical Section, Dr. A. E. Halstead, Chicago, Secretary. Section of Tuberculosis in Children, Dr. William F. Cheney, San Francisco, Chairman.

Advisory Tuberculosis Board.—Dr. Eugene H. Porter, Commissioner of the State Department of Health, has invited the following to become members of an advisory board to aid in the combat against tuberculosis: Dr. Thomas Darlington, Livingston Farrand, Homer Folks, and Dr. Alfred Meyer of New York, Dr. E. R. Baldwin of Saranac Lake, Dr. George W. Goler of Rochester, Dr. Willis G. MacDonald of Albany, Dr. V. H. Moore of

Ithaca, Dr. John H. Pryor of Buffalo, and Dr. William H. Watson of Utica. Governor Hughes has promised his assistance in securing an appropriation of $50,000 at the coming session of the legislature for the purpose of furthering the work.

American Sanatorium Association.—At the annual meeting of this organization held on December 14, the election of officers resulted as follows: *President,* Dr. V. Y. Bowditch of Boston, reelected; *Vice-President,* Dr. L. F. Flick of Philadelphia, reelected; *Secretary-Treasurer,* Dr. H. M. King of Liberty, N. Y.

Contribution to the Infirmary for Deformities and Joint Diseases.—At a benefit given at the New Circle Theater on Sunday evening, the sum of $3,500 was raised for this institution.

Southern Surgical and Gynecological Association.—Officers as follows were elected at the meeting of this organization, held in New Orleans on December 20: *President,* Dr. F. W. Parham of New Orleans; *Vice-Presidents,* Dr. W. F. Westmoreland of Atlanta and Dr. H. B. Fry of Washington; *Secretary,* Dr. W. D. Haggard of Nashville; *Treasurer,* Dr. Stuart McGuire of Richmond. Next year's convention is to be held at St. Louis.

Hunt County (Tex.) Medical Association.—Officers as follows were elected at the meeting of this organization, held in Greenville, Tex., on December 17: *President,* Dr. J. H. French; *Vice-President,* Dr. J. F. Arnold; *Secretary,* Dr. D. R. Waddle.

North Kentucky Medical Association.—At the meeting of this association, held in Walton on December 20, officers were elected as follows: *President,* Dr. B. K. Menefee of Walton; *Vice-President,* Dr. C. W. McCullom of Erlanger; *Secretary,* Dr. O. E. Senour of Union.

Creek County (Okla.) Medical Society.—This society has been organized with the following officers: *President,* Dr. Bronaugh of Mounds; *Vice-President,* Dr. Croston of Sapulpa; *Secretary,* Dr. Justice of Sapulpa.

El Paso County (Tex.) Medical Society.—This society has elected the following officers: *President,* Dr. W. H. Anderson; *Vice-President,* Dr. W. L. Brown; *Secretary,* Dr. Herbert Stevenson.

Kent County (R. I.) Medical Association.—The following officers were elected at the meeting of this association, held in East Greenwich: *President,* Dr. F. B. Smith of Washington; *Vice-President,* Dr. C. S. Christy of River Point; *Secretary,* Dr. W. S. Reoch.

Cass County (Neb.) Medical Society.—The following officers were elected at the meeting of this society, held in Atlantic on December 19: *President,* Dr. Weaver of Cumberland; *Vice-President,* Dr. Zook; *Secretary and Treasurer,* Dr. Emmeret of Atlantic.

Guernsey County (O.) Medical Association.—The election of officers for this society at its annual meeting, held in Cambridge on December 10, resulted as follows: *President,* Dr. T. H. Rowles; *Vice-President,* Dr. F. E. Bird; *Secretary,* Dr. Fred Lane; *Treasurer,* Dr. A. B. Hadley.

North District (Tex.) Medical Association.—At the annual meeting of this organization, held in Fort Worth on December 12, the following were elected as officers: *President,* Dr. J. M. Inge of Denton; *Vice-President,* Dr. J. W. Carey of Whitesboro; *Secretary,* Dr. H. L. Moore of Van Alstyne; *Treasurer,* Dr. A. W. Carnes of Hutchins.

Fire at the Hospital for the Ruptured and Crippled.—On Christmas eve a fire broke out in the playroom of the hospital where there was a considerable quantity of easily inflammable material to be used in the Christmas celebration on the following day. The hospital fire corps and the firemen of several companies that were summoned controlled the blaze before it had reached a point making it necessary to move out any of the patients.

Obituary Notes.—Dr. John C. Johnson of Blairstown, N. J., died on December 23, at the age of eighty years. He was graduated in medicine in 1850 and had continued in active practice since that time.

Dr. John Y. Hoffman of Reading, Pa., died suddenly on December 26 at the age of forty-nine years. He was a graduate of Jefferson Medical College and had practised in Reading for many years.

Dr. Frank B. Look of Martha's Vineyard, Mass., died suddenly of cerebral hemorrhage in West Tisbury on December 13 at the age of fifty years. He was graduated from Bowdoin College in 1885, and after serving as interne in the Hartford Hospital at Hartford, Conn., began practice in Middletown, Conn. He remained there until 1896 and then returned for some years to Hartford, Conn. Since 1905 he had been a resident of Vineyard Haven.

Dr. Fred W. Goodwin of Halifax, N. B., died on December 18 at the age of fifty-one years. He was a graduate of the London College of Physicians and Surgeons and had practised in Halifax for many years. He was president of the Halifax branch of the British Medical Association and Professor of Materia Medica at the Halifax Medical College.

Dr. Elmer J. Barney of Berlin, N. H., died on December 18 at the age of thirty-four years. He was a native of East Charleston, Vt., and was graduated from the Medical Department of the University of Vermont in 1905, since which time he had practised in Berlin.

Dr. Worcester E. Boynton of Lowell, Mass., died on December 15 at the age of eighty-three years. He was born in Warren, N. H., and received his medical education from New York University and the Massachusetts Medical College. He practised for a time in East Hopkinton, N. H., and then for a period of thirty-five years in Lawrence, Mass. Since 1896 he had been a resident of Lowell.

Dr. Elmer E. Goodwin of Haverhill, Mass., died on December 19 at the age of forty-two years. He was born in Berwick, Me., and received his medical degree from Dartmouth Medical School.

Dr. George W. Wilson of Montezuma, Ia., died on December 16 of nephritis at the age of sixty years. He was graduated from the University of Michigan in 1870 and had practised for many years in Poweshiek County.

Dr. Charles E. Lippitt of Berryville, Va., died on December 21 at the age of seventy-nine years. He was born in Alexandria, Va., and served through the Civil War as senior surgeon of the Fifty-seventh Virginia Regiment.

Dr. M. C. Cox of Lanford, S. C., died on December 18 at the age of seventy-two years. He had practised in Laurens County for over fifty years, and had served in the Confederate Army as a captain in Goodwin's brigade.

Dr. James H. Blake of Houston, Tex., died suddenly on December 16 in his sixty-first year. Dr. Blake was born in Brenhan, Tex., and was grad-

uated in medicine from the Hahnemann Medical College of Philadelphia in 1870 and three years later from the Medical Department of the University of Maryland. He had practised in Houston for over thirty years.

Dr. Louis R. Pierce of Newburgh, N. Y., died on December 29 of pneumonia at the age of forty-one years. He was a native of Binghamton and received his medical degree from the Long Island College Hospital.

Dr. H. A. Worley of Omaha, Neb., died on December 10, at the age of fifty-eight years. He was born in Cleveland, O., but received his early education in Davenport, Ia., and was graduated from the Iowa State University and the New York Homeopathic Medical College. He had practised in Omaha since 1871.

Dr. William K. Wood of Berkley, Va., died on December 11 of typhoid fever, at the age of thirty-two years. He was a native of Elizabeth City, N. C., and was graduated from the Baltimore Medical College about ten years ago. Since that time he had practised in Berkley and for some years had been the city's health officer.

Dr. R. J. Peare of Pleasanton, Kan., died on December 7, at the age of fifty-nine years. He was born in Ireland and was graduated from the Ann Arbor Medical School in 1869. In 1893 he removed to Canon City, Col., and five years later to Pleasanton.

Dr. Robert I. Thomas of Los Angeles died on November 21 at the age of ninety years. He was surgeon-major in the Civil war and for twenty-five years was government surgeon for the Sioux Indians at Fort Randall, S. D.

Dr. John Fay died at Altoona, Pa., on December 6 at the age of seventy-seven years. He was graduated from Jefferson Medical College in the class of 1855. He served as a surgeon in the United States Army during the Civil War. Subsequently he became a surgeon in the service of the Pennsylvania Railroad Company. On the organization of the Altoona Hospital he was made chief of the medical staff and he retained this position up to the time of his death.

Correspondence.

THE OPTOMETRY BILL.

To the Editor of The Medical Record:

Sir:—During the past few weeks I have received several letters of inquiry from different parts of the State concerning the proposed effort, as reported in the newspapers, on the part of certain opticians to secure the passage of a law creating the profession of optometry. I have thought it well to place my answer to these letters in a general way before the profession, urging concerted action against this effort to secure special privileges on the part of opticians, and know of no better way to do this than through the columns of the popular Medical Record.

The proposed Optometry Bill will probably be a more serious matter at the coming session of the Legislature than at any time in the past. In our hearing before the Governor in June, 1907, two points were raised which defeated the measure. The first was that a board of examiners was authorized, appointed by the Regents, from lists nominated by the Optical Society of the State of New York, and the second that optical schools were authorized, maintaining standards satisfactory to the examining board. We called attention to the fact that these two provisions permitted the Optical Society, which is a voluntary, irresponsible body, to dictate to the State in the appointment of the examining board and also in the determination of standards, defects which existed in the old medical law and were remedied in the new medical law which the present Governor had recently signed.

We who have made a study of this subject were confident that these two errors were vital, and, although the Governor seemed to doubt their importance when presented to him, they were the only two objections he raised in the memorandum filed with his veto. Other arguments were presented at the time to show the dangerous character of the measure, and they are the arguments which must be raised in opposition again, for the bill will doubtless now be more carefully drawn, and our contention must be narrowed down to what I have always considered to be the main issue, namely, that it will be neither wise nor safe to grant to any body of individuals the right to practise, even in a limited way, what is now considered a part of the practice of medicine, unless a prerequisite shall be a compliance with the medical laws of the State. The advocates of the bill will claim, as in the past, (1) that opticians have been doing this work from the time glasses were first used, without molestation or interference, and that they have brought the science of optometry up to its present condition of accuracy and refinement; (2) that they have become established in practice, have large capital invested, and therefore have vested rights; (3) that because of the increased demand for eyeglasses incompetent and unscrupulous people, calling themselves opticians, travel about the State, imposing on the credulity of farmers and others, especially in thinly settled sections, charging exorbitant prices for their wares and even doing harm to the eyes of their dupes; (4) that the opposition to the enactment of the law they desire comes from oculists; (5) that medical colleges devote very little time to the teaching of this subject and in consequence physicians are graduated who have comparatively little or no knowledge of optometry; who do not know how to examine an eye and adjust glasses thereto, and yet are authorized by law to do this work.

These are the arguments dwelt on in the past, and to my mind they should be met fairly and squarely, without prejudice, and the whole subject decided on its merits. The legislators and the Governor are sworn to protect the interests of the State and they will be actuated by this purpose in enacting laws. If the arguments of the opticians who are demanding this bill outweigh those in opposition, the optometry law will be enacted. Let us consider the claims made by the opticians and how we should answer them.

First: That they have been doing this work from the time glasses were first used, without molestation or interference, and have brought the science of optometry up to its present condition of accuracy and refinement. It is true that opticians have been storekeepers, dealers in optical goods, and possibly grinders of lenses for many years, and so far as I know there is no desire on the part of anybody to molest them or interfere with them now if they will adhere to their calling in these respects. The adjusting of lenses when help is needed in advancing age has always been done by opticians to a certain extent, but this does not require ability to diagnose diseased conditions or departures from the normal. A person who thinks he needs glasses has a perfect right to go to a store where glasses are sold and the storekeeper, if he helps his customer in the choice of what seems most comfortable, ought not to be denied the privilege of so doing. And the same might apply with equal force to the shoemaker, the corsetmaker, and so on. For opticians to undertake, however, to make an opthalmoscopic examination of the interior of the eye, to test the ocular muscles, and prescribe prisms for muscular insufficiencies, when these defects may possibly be due to disease of the spinal cord; to prescribe glasses for the relief of headaches which may be due to brain tumors, Bright's disease of the kidneys, etc.; to undertake the treatment of strabismus by the use of lenses, even charging a fee for their examinations and advice over and above the cost of glasses, as the very advocates of this bill are now doing, approaches very closely to the practice of medicine as defined by the present medical law. When they claim any credit for the advancement of the science of ophthalmology—which is the proper term to apply to work of this kind—opticians cannot really expect anyone with knowledge of the facts to endorse them. The development of the science of ophthalmology, beginning with Donders and Helmholtz, has been the work of physicians and the practice should not be separated from the medical profession.

Second: That they are established in business, have large capital invested, and therefore have vested rights. I have no idea what "vested rights" may include in its fullest significance, but if the investment of capital in business that may be harmful to the community constitutes "vested rights" then the quack, charlatan, criminal abortionist, professional gambler, and others may make the same claim. To my mind there can be no "vested rights" so great as to outweigh the "rights" of the people of the State, and if the legislators, elected to protect the rights

of the people, are convinced that the practice of optometry, as at present carried on by opticians, is inimical to the interests of the people, any law passed by it to properly safeguard those interests is not likely to be contested on the ground of being unconstitutional.

Third: That because of the increasing demand for eyeglasses, incompetent and unscrupulous peddlers calling themselves opticians travel about the State, imposing on the credulity of farmers and others in thinly settled sections, charging exorbitant prices for their wares, and even doing harm to the eyes of their dupes. Of course this is true. People are fond of buying "gold bricks" and it is astonishing how intelligent people will listen to the most outrageous yarns told by fakirs of all kinds, and yield to their persuasive arguments, when a reputable licensed physician might talk himself hoarse without convincing them in the least. This is so old and so true that it has become historical, but that is no reason for the enactment of special laws to govern every new phase of this confidence game. There are laws enough now on the statute books which are never enforced without adding to the list because some one has suddenly discovered a fact long ago known to exist.

Fourth: That the opposition to the enactment of this law comes chiefly from oculists. It may seem unfortunate that physicians who devote themselves to the practice of ophthalmology should be the ones who have directed the opposition to this measure, because it has given the advocates of the bill the opportunity to point to their opponents as evidence of the truth of their contention that commercial reasons and the fear of competition prompted the opposition. It is perfectly natural that physicians who practise this specialty—or optometry, as the friends of the bill seem to prefer—should be the ones to point out the dangers of the measure. They of all others know the importance of the work, and they of all others have knowledge of the disastrous consequences of opticians adjusting lenses to the eyes when proper attention on the part of physicians might often have prevented blindness or even prolonged life. The charges of personal interest and of the desire to limit competition have never strengthened the cause of the advocates of this bill. The claim is absurd and does not influence many of the legislators. The physician with his superior training and facilities need not fear the competition of any person with less training, for in the end the best man wins. The one who suffers is the man practised upon by the partially educated practitioner. We need not waste time answering arguments or statements challenging our motives, for the facts speak for themselves. Everybody knows, or ought to know at least, that it would be a most unfortunate thing to divide the practice of medicine into specialties and exact any less preparation for them than is required of all physicians. To create doctors of optometry, of gynecology, of dermatology, of hydropathy, of osteopathy, of allopathy, of homeopathy, and so on, would be disastrous to the dignity and integrity of a learned profession, to say nothing of the dangers to which it would expose the public at large. We who have been through the preparation know that one cannot be proficient in special lines who has not been educated for the general practice of medicine. We know only too well that with the best preparation possible we often feel lamentably incompetent.

Fifth: That medical colleges devote very little time to the teaching of this subject and in consequence physicians are graduated and licensed with comparatively little knowledge of optometry, who do not know how to examine eyes for glasses, and yet are permitted to do this work. This opens up a large field for discussion, but that it is used only to blind the legislators is evidenced by the fact that the opticians, if they are granted their desires, are willing to allow an exemption of all physicians in their bill, despite the charge of their ignorance. The course of instruction in undergraduate colleges is not supposed to fit a graduate to practise as an expert specialist in any line. A doctor just graduated from his medical college could not be expected to perform a cataract operation, or fit lenses to the eyes skillfully, any more than he could operate for an abdominal tumor, for appendicitis, or for mastoid or brain abscess. The course of training in a medical college includes a thorough training in the fundamentals of medical practice. The special lines, including the fitting of glasses and the performing of surgical operations, are taught, but the student does not get the training necessary to make him skillful in any special branch in his college course. The mastery of these details is altogether unnecessary for the physician who enters into family practice. It is impossible for one man to become proficient in all special lines and the man who tries to do it generally ends by being proficient in none. The doctor who desires special training takes up this work in the post-graduate schools now existing in all large cities. Despite the statements of certain people, who are ignorant of the facts, there are many places in this country where physicians can learn all the details of work in special lines. The physician who desires to take up the study of optometry has open to him the various post-graduate schools, as well as the more desirable special institutions, like the Manhattan Eye, Ear, and Throat Hospital, the New York Eye and Ear Infirmary, and other places where efficient schools of instruction are maintained for graduates in medicine.

The question must naturally arise, Is there need for any legislative action in this matter? I believe there is great need for a positive and comprehensive law governing the practice of optometry, so called. The influence of defective eyes on the growth and mental development of children is a subject about which argument is hardly necessary in these days. Educators all over the world are talking and writing about it until the time has arrived when its importance is much more likely to be overestimated than otherwise. The relation of optical defects and muscular imbalance to mental development, epilepsy, chorea, and various other reflex phenomena is so important, and the whole subject is so intricate and variable, that the most skillful and intelligent physicians are not yet entirely agreed on the exact relation of cause and effect. The boards of education and of health are interested to the extent of urging appropriations for the investigation and study of the subject, but so far I have not heard of one who has probed deeply into the subject who would be willing to say that any person other than a physician would be competent to pass on the questions and problems involved.

This law advocated by the Optical Society would give to the optician, whose knowledge at best would be of the most superficial character, the right to present his claim for the position of examiner of the eyes of children in our public schools, if such a position was created. How could the board of education or of health refuse to recognize the right of an optician to such a position when the State, by legislative enactment, had given him the right to do the work this position would call for?

The optician has a most important position, very similar to that of the druggist. He should be controlled by law and compelled to demonstrate his ability to fill prescriptions written by physicians, as the druggist is. There are many storekeepers, jewelers, and others who pose as opticians, who have no knowledge of the mechanical work opticians should be able to do. In consequence of this the benefit which should be obtained from glasses prescribed by physicians is often not obtained because of the bungling work of the one who fills the prescription.

My experience leads me to believe that the lawmakers are anxious to do something to regulate this practice. At the last session they passed a medical bill and the Governor signed it, because the medical profession and the Department of Education united in drafting it. In consequence the State of New York has a medical law more nearly ideal than many thought it possible to obtain. If those who should be interested in this optometry question would unite the same result could be accomplished. In the first place the great universities with medical departments should take the lead in obtaining such legislation. Optometry is the most important and difficult part of the work ophthalmologists are called upon to do. It deals with defects, the recognition and correction of which may determine whether an apparently incorrigible boy in public school shall become a criminal or a useful member of society. It deals with possible conditions in the eye the recognition of which may result in the treatment of disease in other parts of the body, prolonging perhaps the life of a father whose death might mean a family becoming a public charge. It deals with muscular defects the correction of which may mean a life of comfort and usefulness to one who might otherwise become a confirmed invalid or epileptic. Its study involves problems, compared with which the surgical treatment of the eye, the removal of cataracts, of tumors, and so on, is the veriest child's play, for these require only a certain amount of manual dexterity and not necessarily extensive knowledge.

There are hundreds, perhaps thousands, of men studying medicine in our medical colleges to-day who will some day become specialists in eye diseases. If when they arrive at that time they find themselves face to face with men calling themselves doctors of optometry, who, with a trifling knowledge of optics, and possibly no knowledge of anatomy, physiology, chemistry, bacteriology, and so on, which the doctor of medicine has spent years of hard grind and privation to obtain, have the legal right to to do the most important and intricate part of the work

of the physician, the man who has spent his time in the medical college will be apt to consider that he has wasted years of his life. And if the optometrist can become sufficiently proficient with his moderate amount of preparation the doctor of medicine has wasted his time.

So I believe it is up to the deans of medical colleges, the professors of ophthalmology in these colleges, and the chancellors of the universities of which these medical colleges are departments, to take this matter up and give it careful study. If the medical education is not necessary for the intelligent practice of optometry, then let us cease our contention; if a medical education is necessary, then let us demand that the practice be limited to physicians. Of this I am sure: If the educators of the State, the State Education Department, and the medical profession will unite in their petition to the Legislature a law can easily be enacted which will be just to all concerned.

FRANK VAN FLEET, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Special Correspondent.)

SCIATICA—MEDICAL INSPECTION OF SCHOOL CHILDREN—BRISTOL INFIRMARY AND PLEURAL APPOINTMENTS—A "BROWN DOG" ÉMEUTE—TROPICAL SCHOOL'S MEDAL—NURSES' DIPLOMAS—OBITUARY.

LONDON, December 13, 1907.

SCIATICA is so troublesome a malady to both doctor and patient that any attempt to elucidate its origin is pretty sure to interest every practitioner. A paper at the Medical Society of London on its relation to hip-joint disease was read by Dr. Ironside Bruce and elicited a brief discussion. Dr. Bruce showed skiagrams to prove that certain changes in the hip joint are frequently present in cases of sciatica. The results of gouty or other inflammations, he said, could be demonstrated by radiography and it would be well to investigate in this way all cases of sciatica. He exhibited five such skiagrams presenting articular changes from cases with the typical symptoms of sciatica. He did not contend that all cases showed these changes—indeed, the five instances had been obtained from twelve cases. In one of them the head of the femur had been excised and showed the changes usually considered to be characteristic of arthritis deformans. He did not suggest that such changes were constant, but he was convinced that routine examination with *x*-rays of all intractable cases would show that in a large proportion the sciatica was a symptom of chronic rheumatic arthritis.

Dr. de H. Hall remarked that such examination would be helpful in all cases of pain along the course of the sciatic nerve.

Dr. Fortesque Fox expressed his satisfaction with the old view that sciatica was almost always a pure neuritis and had no connection with bones or joints. He admitted, however, that there were cases following injury to joints which formed a secondary class.

Points mentioned by other Fellows were that the diagnosis between the nerve affection and hip-point disease should be attempted; that exposure and incision of the nerve had given immediate relief; that further investigation was needed to exclude disease of the lower part of the vertebral column; that the question whether muscular wasting indicated joint disease required clearing up, and that the pelvic condition was of some importance in obstinate sciatica.

In reply to a question, Dr. Bruce said the patient from whom the head of the femur had been removed was now free from pain and his limb was fairly useful.

The medical inspection of school children has, since the recent Act, been the subject of discussion and even disputation among those interested in either education or public health. Among the disputants were those who looked with suspicion on the Board of Education, some even who were prepared to say that nothing but organized public opinion would overcome the opposition of the permanent officials. The *British Medical Journal* claimed, as usual, the credit of inducing Parliament to pass the measure and as soon as it was passed made an unjustifiable attack on the Board for not appointing its nominee to the medical officership. The tone has changed of late, seeing that the action of the Board so far has secured the approval of almost all the organs of public opinion.

The Board decided to appoint as its own adviser a prominent medical officer of health rather than to initiate a new class of medical officers *ad hoc*, and in a memorandum lately issued for the guidance of local authorities commends this course for adoption. The plan seems the most natural. The Medical Officer of Health will find the additional duties will really facilitate his work in connection with the spread of infectious diseases; he has an interest in children of school age, which is manifest in almost every report of his work, to say nothing of his duties in regard to the school buildings, their ventilation, drainage, and general sanitary conditions, and the outbreaks of measles, scarlet fever, diphtheria, etc., which so often start among the school children.

The memorandum referred to above is of a preliminary nature and deals almost entirely with the new Act at its initiation, for it comes into force on the 1st of January. It points out the respective functions of the Board and the local authorities as defined by the Act. It states that the Board has decided that not less than three inspections during the school life of the child will be necessary; that the inspection is to be conducted in school hours, on school premises, and in such a way as to interfere as little as practicable with school work. Each inspection is to take account of the following matters: (1) Previous disease; (2) general condition and circumstances, height, weight, nutrition, cleanliness, as well as clothing; (3) throat, nose, and articulation; (4) external eye disease and vision testing; (5) ear disease and deafness; (6) teeth; (7) mental capacity, normal, backward, or defective; (8) present disease or defect.

A disagreement between the committee and the staff of the Bristol Royal Infirmary which has gone on for some weeks has been happily closed by a compromise accepted on both sides. I do not propose to discuss it so far as it relates to any local conditions, but will refer to the chief point involved, as it affects the profession everywhere. The committee desired to secure the exclusive services of their staff and to effect this proposed to alter the regulations so as to exclude them from accepting professional posts at other institutions. That is an intelligible wish and might be supported by various arguments. But the committee seem to have thought they could make a rule of that sort retrospective—a thing one would scarcely expect could be proposed or accepted. The staff naturally declined to be placed in such a position and much ink was shed in the conflict. Now it is happily ended and one may consider the question whether it is desirable for hospital physicians and surgeons to hold plural appointments. Something—often a good deal—may depend on the duties involved and of course something on the amount of work demanded by each. In London we have men serving a general and a special hospital and occupying other posts as well. In some cases, where there is great energy and the demands of private practice are not too heavy the plan works well, but in others I must admit there are defects. Men attempt too much for their strength and suffer in reputation and health. Another point, as affecting the profession apart from individuals, is that the pluralists are depriving others of the opportunities they look for. There are many young men who have attained a distinction which should render them eligible for any staff, but who have little prospect of such a position, simply because all the offices are occupied by their seniors. Some of the latter hold two or three, or even more, posts, any one of which the waiting men would gladly take. It is a fact, too, that some of our institutions have been established by such energetic young men or on their behalf, and the multiplication of these smaller hospitals is by no means desirable. From this it is clear that restriction to one appointment might be generally beneficial and any well-managed hospital could afford work enough to satisfy the zeal of its staff.

Some medical and other students having indulged in a raid on the "brown dog" at Battersea and subsequently in a procession to Trafalgar Square have come into collision with the police. You may remember that the brown dog in question is a statue erected by antivivisectionists in memory of the alleged victim, the falsehoods concerning which cost Mr. Coleridge and his supporters £2,000 as damages for libel. This libel is repeated in the inscription on the statue, which declares the dog was "done to death in University College," and that it "endured vivisection extending over more than two months," etc., etc. The raid on the memorial was successfully resisted by the police. But this week a meeting in Trafalgar Square was planned, a large crowd assembled, interfering with the traffic, and the police arrested several students and some passengers who could not make their way through the crowd. Some fines were inflicted on the leaders, others were discharged with the unfortunate passengers who had been arrested by mistake. Some of the newspapers have found good sensational copy in the rather silly escapade and talked of it as a serious riot, blaming the students, who numbered about a dozen, for disturbing the public peace. Yet these organs have no censure for the provocative inscription nor for the Battersea Borough Council, who actually presented the site for the statue.

On the other hand there are a few writers who have

pointed out that the whole blame should rather be laid on those who erected the statue and the Borough Council, for what is in fact a direct provocation to a breach of the peace.

It is pointed out that if Mr. Coleridge provoked a breach of the peace with a flag inscribed as the statue is inscribed it would be the duty of the police to take away the flag and if necessary to arrest him as the cause of the disturbance. It is remarkable, if such be the law, that the police should have interfered with a few students, though they protect the processions of working men.

The Liverpool School of Tropical Medicine has conferred on the Rt. Hon. Joseph Chamberlain the Mary Kingsley medal founded in memory of Miss Kingsley for presentation to those who have specially distinguished themselves in the amelioration of health conditions in the tropics.

Princess Christian, as president of the Royal British Nurses' Association, presented the diplomas to the first batch of successful candidates in the examination recently held by the Association under its charter. It is expected that this diploma will take precedence of the various certificates of training that have been commonly issued by various hospitals.

The death of Dr. C. R. Drysdale in his seventy-eighth year recalls to many an ardent worker for all he thought good for the profession and a zealous advocate of changes which he thought would promote the happiness of the people. He was many years physician to the Metropolitan Hospital and the West London Consumption Hospital and his surviving colleagues know how faithfully he worked with them. As physician to the Rescue Society he also did much good work. He wrote many papers for societies and journals. For the latter numerous leaders and unsigned reports. He published a work on syphilis, on which he was an authority, and another on prostitution medically considered. He supported the doctrine of Malthus and some other rather unpopular theories. He was F.R.C.S., as well as M.D. and M.R.C.P., an alumnus of University College, and spent some time in Paris under Ricord.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

MEDICAL STUDENTS AT THE DIFFERENT COLLEGES—PSYCHIATRIC CLINIC TO BE ESTABLISHED AT TORONTO—PROPOSED JOURNAL OF THE CANADIAN MEDICAL ASSOCIATION—DEATH OF DR. BAYARD, ST. JOHN, N. B.—THE M'GILL COLLEGE BUILDING—FEES FOR LIFE INSURANCE EXAMINATIONS—THE ACADEMY OF MEDICINE AT TORONTO—HONOR TO DR. GEIKIE.

TORONTO, December 21, 1907.

THERE are seven universities in Canada and eight medical colleges. The number of medical students this year is about 2,000, distributed as follows: Halifax Medical College, 100; Laval, Montreal, 325; Laval, Quebec, 100; McGill, Montreal, 425; Queens, Kingston, 325; Toronto University, 650; Western London, 100; Winnipeg Medical College, 100. Toronto, McGill, and Queens have adopted the five years' course. No one can be licensed to practice medicine in the province of Ontario until a five years' course has been taken. This law will probably be soon in force in every province. There are now 6,000 medical men in active practice in Canada. The great need is for a common registration standard for the whole Dominion on somewhat similar lines to that adopted in Great Britain. The question is now being discussed and there is no doubt that in seven of the provinces the sentiment is strongly in favor of establishing a Dominion registration board. Quebec is the only province in Canada that offers opposition to the scheme.

Steps have been taken to establish in connection with the new General Hospital at Toronto a psychiatric clinic, similar to that at Munich, for the treatment of acute cases of insanity. The Ontario Government during the past year appointed a commission to visit Europe and prepare a report on the best modern methods for treating and caring for the insane. The report of the commission has just been issued and action will no doubt follow without delay to carry out many of the recommendations made. The enlargement of institutions set aside for the care of chronic cases and the limitation in the size of the hospitals for acute cases constitute the prominent features of the report. The success of the methods of Kraepelin at Munich is spoken of in terms of the highest commendation, and the methods thus observed will be followed as far as practicable in the new psychiatric clinic to be established at Toronto.

Dr. William Bayard, said to be the oldest practising physician in the world, died December 17, at his home, St. John, N. B., aged ninety-four. Last August Dr. Bayard celebrated the seventieth anniversary of his entry into the medical profession. On that occasion Edinburgh University, of which he was the senior graduate, sent cordial greetings, and the Maritime Medical Association presented him with an address. For the past sixty-seven years Dr. Bayard has practised in St. John, of which city he has always been one of the most prominent and highly honored citizens. The General Hospital, which he founded in that city, is his chief monument. He was a past-president of the Canadian Medical Association and deservedly held a high place in the respect and esteem of the whole profession.

The question of establishing a journal for the Canadian Medical Association is at present being freely discussed. There are at present in Canada seven English and three French medical journals published monthly and circulated among 6,000 physicians. The new constitution of the association aims at the establishment of a journal, and the question of its probable success seems most debatable. Several solutions of the problem are suggested; one of these is that all the existing journals should merge their interests in one national publication. The expense of such an undertaking seems a formidable obstacle to such action, but the committee having the matter in hand is composed of medical men of zeal and earnestness and their report at the meeting next year will be awaited with considerable interest.

The new building for McGill Medical College at Montreal is to have many features that will be of the highest advantage to students and professors. It is calculated that the cost of the new building will be not less than half a million dollars. The location is most suitable, being so close to the Royal Victoria Hospital that professors and students can pass from classroom to hospital ward with a facility that is certain to be appreciated. The general plan is simple, consisting of a central block facing towards the campus and connected on each side with pavilions running parallel with the streets on either side. The whole equipment will be the best obtainable, and the museum and library will be so arranged that the danger of destruction by fire will be reduced to a minimum.

The fees for life insurance examinations in Canada have been receiving considerable attention recently. In many of the large centers the medical men have taken a firm stand and agreed that the fee for medical examinations made for life insurance shall never be less than five dollars. Most of the life insurance companies doing business in Canada have agreed to pay the fee thus fixed as being the minimum one for such work.

The Academy of Medicine recently inaugurated at Toronto promises to be most successful in every respect. The membership is large and represents every section of the city. Toronto has over 450 medical men, and a large majority of these have been enrolled as members. The sectional meetings are well attended and the program for the season has been so arranged that different evenings have been allotted to symposiums on different subjects in medicine and in surgery. The formation of the Toronto Academy of Medicine is a distinct step in advance and its privileges are likely to be highly prized by the whole profession. It is well located in the Queens Park and in a building that is large and commodious.

Dr. Walker B. Geikie of Toronto, founder of Trinity Medical College and its dean for twenty-five years, has been honored by Queens University, which recently conferred upon him the degree of LL.D. in recognition of his long and faithful services to medical education. His many years of laborious and successful discharge of his duties as a medical professor and his having cooperated in founding one of the best known medical colleges in Canada lead his many friends to feel that the honor has been worthily bestowed. The life-work of Dr. Geikie covers the most interesting period in the history of the medical profession in Canada. His work as a professor commenced in 1865 and among the members of the first graduating class of Trinity were several who have become leaders in the profession. Prominent among these was Prof. Wm. Osler, now Regius Professor of Medicine at Oxford. During his many years of consecutive work as dean and professor, Dr. Geikie was ever intense in his devotion to the cause of medical education in Canada.

Moving Pictures and Eyestrain.—The authorities of Berlin have instituted war against moving-picture theaters, of which there are over two hundred in the city. The health department holds that the jumping movement of the film is injurious to the eyesight, and since the shows are patronized to a great extent by children, disastrous results may be foreseen.—*The Physician and Surgeon.*

Progress of Medical Science.

Boston Medical and Surgical Journal, December 19, 1907.

Debility in Jewish Patients.—H. Morrison has made observations on the Hebrew patients applying for treatment at the Massachusetts General Hospital. He finds that debility is a common condition among them. As a rule it is temporary, but apt to recur. The prevalent symptoms are pain, constipation, and apprehension. The etiology of these debilitated conditions is to be traced to the peculiar circumstances under which the Jews have lived and still live in eastern Europe. Here in America the economic strain during the early years after arrival is an important factor. Debility is especially common among the Jewish women of the immigrant class, because the economic strain weighs very heavily on them. With them, also, imitation and tradition and the ease with which medical advice can be obtained are factors to be considered. These debilities are peculiar not to the Jew, but to the abnormal conditions under which he has been living. As soon as he is relieved from these conditions his symptoms are not different from those of other races. Finally, in the treatment of the cases considered it is well to bear in mind the importance of the old sentiment, "not the disease only, but also the man."

New York Medical Journal, December 31, 1907.

Pathology of Icterus Neonatorum.—A. Graves believes that both the liver and the disintegration of the maternal erythrocytes stand in a causal relation to this affection, which is in a certain sense physiological. The disintegration referred to is nature's method of supplying iron chromatin in sufficient quantity to enable the infant to continue the hematopoetic function on its own account and is accomplished in the following manner: In the hematopoetic organs of the new born, along with the formation of erythroblasts, some special body is formed, a cytolysin or hemolysin, which dissolves in the plasma and imparts to the latter globulicidal properties for erythrocytes other than those elaborated by himself, thence the total disintegration of maternal red cells. Now, if the formation of this globulicidal substance goes on at a normal rate, the disintegration of maternal red cells will go on at the same rate and the liver will not be suddenly overcharged with hematic pigment; but should the formation of this cytolysin go on with unusual rapidity, the contrary will happen, the liver will be overloaded with pigments derived from the disintegrated blood cells, the activity of hepatic cells will be overtaxed, and they will elaborate a surplus of biliary pigments. Thus the question is finally reduced to a disturbance of the equilibrium between katabolism and anabolism in this particular function of blood making. Through some cause, so far unknown, the cytolysin becomes more abundant, more red cells are destroyed at a time, more hemochromatin is stored in the liver than can be used up in the process of blood making, and the surplus actuates the hyperactivity of the liver cells which transform more blood pigments into bile pigments. As to the absorption of the surplus of bile pigments which finally causes the jaundice, three possibilities are present: First: As the terminal capillaries which surround the hepatic cells constitute a portal system, the intravascular and perivascular pressure equals zero. Now, if the hepatic cells are overfilled, the pressure within the bile capillaries will forcibly raise after a time, and the biliary pigments will penetrate into the lymph spaces and reach the general circulation through the thoracic duct. Second: Should we assume an increase in the viscidity of the bile duct due to a state of saturation with biliary pigments, the possibility of temporary plugging of the bile capillaries might be considered. In this case the chances of absorption of the bile through the lymph spaces are evident. Third: Another way of absorption, peculiar to the new born, is through the ductus venosus, as pointed out by Quincke: The flow of bile into the intestines not being impaired in icterus neonatorum, but rather increased, part of it is reabsorbed, gathered into the portal vein, and partially poured into the vena cava through the ductus venosus, which remains unobstructed during the first few days of extrauterine life.

Quinine Sulphate.—J. Y. Shearer relates some facts impressed on his mind by forty-five years of medical practice with relation to the effects and properties of quinine sulphate. He regards large doses of morphine sulphate as the proper antidote for quinine toxemia. The author regards quinine as a tonic, stimulant and antipyretic, or depressant. In pneumonia he gives from ten to thirty grains at noon and at bedtime a large dose of thirty to forty grains. He claims to have repeatedly forestalled the crisis by this method. Similar large doses will, he claims, cure hematuria, which he does not believe is ever due to malarial fever except in the more or less neurasthenic, and then only when small doses of the drug have been administered. Small doses frequently repeated may produce convulsions, which the same drug in a thirty to forty grain dose will control. The same reversal of effect from increase in dose has been observed in uterine hemorrhage. In ten to twenty grain doses every evening, alternating the quantity, has apparently cured gastric ulcer. A like result has followed in chronic diarrhea, the most obstinate cases yielding "without even as much as a waver," and again quinine sulphate, ten and twenty grains, alternating every evening for ten days, then ten grains every evening, then ten grains every other evening, for equal periods, and finally ten grains once or twice a week, then eat and drink what tasted best. In syphilis the following rules for administration are given: Primary stage, ten grains three times a week for two months, then twice a week for four months; secondary and tertiary stages, ten grains every evening for one month or six weeks, then twice a week for four months. In this way the author alternates during the entire specific treatment, with quinine sulphate for six months and rest for an equal period intervening.

Etiology and Treatment of Thrombosis.—Basing their views on studies of the coagulation of the blood, and examining mainly the blood of convalescent typhoid patients in whom the dangers of hemorrhage have been passed, H. A. Duncan and G. M. Illman conclude that the most common predisposing cause of thrombosis is the absorption of tissue juices into the circulation and the active cause is the increased coagulability of the blood. Blood which is received from a vein through a cannula into a glass lined with paraffin will not clot because no tissue juices are allowed to mix with the fluid. The authors believe that this absorption of tissue juices into the circulation occurs after a severe hemorrhage. In the infectious diseases the volume of blood is depleted by high fever, profuse sweating, diarrhea, internal hemorrhages, and here again the body juices are absorbed into the general circulation. Almost every delivery is accompanied by at least a slight loss of blood, often quite a decided loss. This is especially true of the primipara, where lacerations are more apt to occur. The authors have found that a high calcium content of the blood does not always mean a quick coagulation, and vice versa. They believe that in all medical or surgical conditions in which hemorrhage proves a factor, the coagulation of the blood should be carefully observed and at the first indication of increased coagulability prompt prophylactic treatment should be instituted. The blood-vessels should be kept well filled by encouraging the patients to drink water freely, by hypodermoclysis and enteroclysis, and by the administration of citric acid in some palatable form.

Recurring Pleural Empyema.—J. H. Pryor gives full details of one case, his patient being a young man, nineteen and a half years old. In 1904 he had pneumonia followed by empyema and the usual rib resection was done. He remained in the best of health for nearly three years, when he began to have a harassing cough, fever, and progressive weakness. Examination showed nothing to account for his symptoms, but in the course of two months it was pretty evident that there was pus in the chest somewhere on the side previously affected, and a second operation revealed a pus sac. The patient fully recovered after a prolonged convalescence. Pryor states that recurring empyema is an extremely rare affection, this being the third case on record, on the basis of an extremely careful search of the literature of empyema, both medical and surgical. Secondary attacks are apt to assume the sacculated or localized form, on account of the pathological changes following a preceding general involvement of a large part of the pleura. The symptoms are confusing, and may be ascribed to tuberculosis. Some time may be required to form an opinion by exclusion. It is conjectured that microbe life may remain latent in a pocket formed in the process of healing after the primary attack and again become active under unknown favorable conditions. In the foregoing case, there was no record of the bacteriological content of the pus removed in the primary operation, performed before the patient came under the author's care. Streptococci were found the second time. Whether the time of closure of the external opening has any relation to recurrence is an unsettled point.

Journal of the American Medical Association, December 28, 1907.

Diverticulum of the Vermiform Appendix.—Isabella C. Herb reports a case of appendicular diverticulum, probably owing its origin to an attack of appendicitis sixteen years prior to its discovery. The appendix was enlarged

and occluded and the diverticulum sprang from its middle portion opposite the mesenteric attachment, in the form of a globular mass nine inches in circumference and containing opaque jelly-like contents. The reasons for considering the cyst to be a diverticulum rather than a dermoid, hydatid or implantation, cyst, etc., are given. The author has found in the literature twenty-four other cases of diverticula of the appendix.

Pathology and Therapeutics.—G. F. Butler points out the errors that result from the prevalent conception of pathology as being simply pathological anatomy. Pathological anatomy deals with the destruction of physiological structure produced by disease, rather than the disorders of biochemistry and physiology produced by any factor that disturbs the previously existing physiological balance of the organism. It is in the treatment of the perversions of physiological function rather than in the treatment of the diseased anatomic conditions that therapy has achieved its great and lasting successes. He illustrates his view by the therapeutic indications for the improvement of the renal, hepatic, and adrenal functions in epilepsy and hysteria instead of merely attempting to suppress the convulsive manifestations, and the pathophysiological phenomena in diabetes, nephritis, etc., which call for therapeutic measures rather than the specific lesions themselves. It is the pathophysiology of the disease that needs attention rather than the nosological label, and more even than the patient himself, otherwise than as viewed from this physiological standpoint.

Phlegmonous Gastritis.—H. E. Robertson reports two cases of this disorder, in both of which streptococci were found in the lesions, and briefly reviews the literature. The etiology, clinical symptoms, diagnosis and treatment, pathology and bacteriology are also discussed and the article is summarized substantially as follows: 1. Phlegmonous gastritis is a rare form of gastric inflammation characterized by diffuse or focal infiltration of the stomach walls by pus and serum. 2. It is due to the entrance into the submucosa of a virulent organism, usually the streptococcus, through some lesion, though in some cases this has not been discovered. 3. It is more common in males of alcoholic habits and at or past middle life. 4. The clinical symptoms are vomiting, thirst, pain and tenderness in the epigastrium, fever, rapid pulse, signs of peritonitis, collapse, and sudden death. 5. Its duration ranges from twenty-four hours to fourteen days, averaging from four to six days. Diagnosis is usually made at autopsy. 6. The prognosis is very grave and treatment, beyond relieving pain, of no avail. 7. The autopsy frequently shows, in addition to the stomach lesions, a purulent peritonitis and associated lesions. 8. Bacteriologic examination usually yields the streptococcus in pure culture. The circumscribed forms of the disease with focal abscesses are, in Robertson's opinion, probably due to a mixed infection or by some other organism, such as the staphylococcus.

Intrapulmonary (Intracavital) Injections.—M. R. Smirnow reports two cases of extensive and otherwise uncontrollable pulmonary hemorrhage in tuberculosis, successfully treated by the injection under antiseptic precautions, of 5 grains of tannic acid dissolved in 5 c.c. of water, directly into the blood-filled cavity in the lung. In one of the patients this was done on two separate occasions, months apart. In every trial of the method it was quickly effective in checking the hemorrhage and relieving the patient. He recommends the procedure to the profession in the following conditions: 1. The hemorrhage must be in a cavity and uncontrollable. 2. It must be definitely located. 3. Judgment as to the size of the cavity and its location and depth from the chest wall must be as accurate as possible, and the best results are obtained when the needle enters directly into the cavity. 4. The danger of infection is great, and, therefore, the most stringent aseptic precautions must be employed. 5. Tannic acid, or any other soluble unirritating substance that will readily form a clot, may be employed. 6. The low condition of the patient is not contraindicatory, as the injection is a last resort.

The Lancet, December 16, 1907.

Extensive Surgical Emphysema.—G. B. Buchanan's patient was a man of 66 years, who fell, striking his chest against the corner of a table and fracturing the seventh and eighth ribs on the left side rather towards the back. About three hours afterwards he noticed that his scrotum was becoming swollen and uncomfortable and this swelling advanced rapidly over the whole body. Twenty-four hours after the injury the body was found to be swollen and puffy all over and the air could be felt crackling under the fingers; it was evidently immediately beneath the skin, which was lifted up in a large soft mass producing the appearance of general dropsy. The entire surface of the body was affected with the following exceptions: the scalp, defined by a line running round the head more or less coronally at the level of the external occipital protuberance, the temporal ridge, and the upper and outer angle of the orbit, and this area of immunity was continued downwards to the malar bones, and thence over the nose as far down as the tip, the eyes and eyelids thus escaping; the point of the chin; the auricles; the hands, back and front, from a line just above the wrist-joint; the region immediately over the patella; and the feet, dorsum, and sole from a line at the ankle-joint. There was no sign of pneumothorax. For the first day or two there was a little dyspnea, with slight cyanosis of the face and lips, and rather rapid respiration, but this soon passed off. There was no pain anywhere except at the site of the fracture, though the swelling of the scrotum and penis gave rise to considerable discomfort. Treatment consisted in restricting the movements of the chest by strapping and the administration of sedatives for the cough. The emphysema gradually subsided and in a fortnight it had quite disappeared. Noteworthy features of the case were the immunity of the areas over the nose and eyelids, as there is a free communication between the subcutaneous tissues of these parts; also the definite limiting line at the wrists.

The Synchronous Movements of the Lower Eyelids with the Tongue and Lower Jaw, Observed in Certain Diseases.—The movements referred to by H. J. Bobson consist of a slight eversion of the lower eyelids, made evident on the protrusion of the tongue or depression of the lower jaw, the lids resuming their normal state when the tongue is retracted or the mouth shut; in other words, the lower lids become displaced from the eyeballs or are protruded from the eyeballs to the extent of one or two millimeters upon protrusion of the tongue or depression of the lower jaw. The author does not think that the phenomenon is a reflex act of disease. It is evidently produced by the contraction of the malaris fibers of the orbicularis palpebrarum muscle—the malaris muscle as described by Henle. From the fact that the facial nerve supplies the malaris muscle and the digastric and mylohyoid muscles, and the hypoglossal nerve supplies the geniohyoid and the geniohyoglossus muscles, and that the facial nerve communicates in the latter muscle with the hypoglossal nerve; and furthermore, from the fact that the nuclei of origin of the hypoglossal nerve and of the facial nerve are in close proximity in the medulla and the pons varolii, respectively, it is easy to see how the coordinate muscular acts of the simultaneous protrusion of the tongue and depression of the lower jaw with the eversion of the lower eyelids are produced. In acute cases Bobson is inclined to think that the presence of the sign may be caused by the circulation in the blood of some toxin, or that at other times it may be some nervous impulse acting directly upon the common nuclei of origin of the hypoglossal nerve and of those fibers of the facial nerve supplying the orbicularis palpebrarum and its offshoot, the malaris muscle. In chronic cases it is obviously caused by some changes in the deeper structures of the skin. It has been observed in acute influenza laryngitis and in chronic maladies of the heart and abdominal viscera. The author declares that the phenomenon is never present in health, but comes and goes with the onset and cure of the disease, of which he thinks it is a clear index or sign.

Some Gastric Conditions in Wasted Infants.—R. Miller and W. H. Willcox make a plea for examining gastric contents in wasting infants. They refer particularly to results in atrophic dyspepsia and hypertrophic pyloric stenosis and acid dyspepsia. The first group shows a diminished activity of both acid and ferment secreting glands. There is no retention of food in the stomach and there is no mucin. In the second class there is, as a rule, a marked increase in the ferment activity, together with excessive secretion of mucin. There is also found to be very obvious retention of food in the stomach. The total acidity is variable, but tends to be below normal, varying doubtless indirectly with the amount of gastritis present. It may be pointed out that after regular gastric lavage has been carried out for a short period the gastric contents begin to lose their abnormalities—the mucin becoming less in amount, the ferment activity diminishing, and the acidity at the same time more closely approaching the normal. In the third variety the gastric contents show an increase in their total acidity, the ferment activity being normal or below normal. There is no mucin, but there is obvious retention of food in the stomach. The clinical symptoms of the various conditions are fully described, together with treatment.

British Medical Journal, December 14, 1907.

Ptomaine Poisoning from Mutton with Marked Bradycardia.—The patient of W. Bryson was a farmer of thirty-nine years, whose symptoms began some three hours after he had eaten the mutton, the weather being warm and sultry but the meat being all right so far as its appearance was concerned. Several others who had partaken of the same meat were attacked, though less violently. The symptoms were the usual ones of gastro-enteric irritation, vomiting, diarrhea, tympanites, and some abdominal tenderness. Later cramps in the extremities were added. The pulse ran down to 48 and was regular. The breath had a peculiar fetid odor. The symptoms lasted in all over five days and recovery ensued.

Treatment of Scabies.—F. J. W. Porter commends the use of balsam of Peru, followed by a hot bath in twenty-four hours. Out of twenty-four cases this proved efficient, no case relapsing and no albumin being found in the urine. Some figures are given as to the frequency of the disease in the English army.

A Note on Nephropexy.—B. Pollard refers to an operation which he has satisfactorily performed, the principle being the support of the kidney by means of a sling fashioned from a part of its own capsule, additional support being ultimately obtained by the union of the decapsulated surface of the kidney with the posterior wall of the abdomen. Full technical details are given in the original paper.

The Part Played by the Pediculus Corporis in the Transmission of Relapsing Fever.—J. P. Mackie gives a general description of the pediculus and then describes a certain epidemic in which it appeared to play a causative factor. The features of this epidemic are thus summarized: (1) An epidemic of relapsing fever broke out in a mixed settlement of boys and girls living under similar conditions. (2) A very high percentage of the boys fell victims to the disease in the course of a few weeks. (3) A much smaller percentage of girls fell ill and at infrequent intervals extending over three months. (4) The most notable factor in which the boys differed from the girls was that they were infested with body lice, from which parasite the girls were almost free. (5) A well-marked percentage of the lice taken from the infected ward contained living and multiplying spirilla. (6) The stomach of the louse was the chief seat of multiplication, and this was carried on in the face of active digestion and after the disappearance of all other cellular elements. Other organs became secondarily infected. The secretion expressed from the mouth of infected lice contained numbers of living spirilla, and they also existed in greater or less numbers in the upper alimentary tract. The ovary was frequently infected, but spirilla were not found in deposited ova. (7) With the increase of the epidemic amongst the girls, body lice became more in evidence. (8) With the subsidence of the epidemic amongst the boys, the percentage of infected lice fell. (9) An attempt to infect a monkey by means of lice failed.

A Possible Explanation of Late Return Cases of Scarlet Fever.—W. Habgood notes that every physician responsible for the discharge of scarlet fever patients from isolation hospitals is beset with the difficulty of knowing when they are free from infection. The time having not yet arrived when he can, as in the case of diphtheria, call in the aid of the bacteriologist, he has to be guided by ordinary clinical examination. Formerly desquamation was the guide; when that was completed the case was discharged. Of recent years it has been recognized that where return cases of scarlet fever occur the discharged patient will be found to have some purulent or mucopurulent discharge. While admitting the impossibility of being sure that all inflammation has ceased in the upper respiratory tract, the author is inclined to believe, from observation at different hospitals in the last two years, that cases are sent out free from any nasal discharge and not infectious, but do again become infectious by the occurrence of an ordinary attack of nasal catarrh, which causes some remaining quiescent scarlet fever germs to renew their activity. An anology may be found in the case of one who sits in a warm room with a current of cold air playing on his neck. He may get an attack of acute nasal catarrh, and he may become infectious to others. The germs that caused the catarrh were already in his nose, but dormant and able to become active only when an interference with the nasal circulation was set up by the cold air driving on to the warm skin. Habgood thinks it may be argued that the scarlet fever convalescent causing a "return case" has in some instances left the house, not in an infectious state, but owing to the change from a healthy, open-air life and freely ventilated wards of a hospital to the stuffy and ill ventilated rooms of a cottage he has become more than usually liable to nasal catarrh—has, indeed, suffered from such an attack and is thereby again made capable of conveying scarlet fever infection.

Berliner klinische Wochenschrift, December 2 *and* 9, 1907.

The Hydrochloric Acid Treatment of Gout.—Falkenstein reports on the results of five years' application of his hydrochloric acid therapy in gout. This is founded on his belief that in gout there is a hereditary abnormality of the gastric mucosa involving the fundus glands and causing diminished hydrochloric acid secretion. The method consists in the continuous administration of considerable quantities of concentrated pure hydrochloric acid, which is given well diluted after meals. The author himself has taken during more than five years without any interruption 50 to 60 drops daily of the concentrated acid without any untoward effects, and with very great relief to his gouty symptoms. He has treated 390 cases of the disease and says that the patients may be divided into three groups. The first category comprises patients who have had the disease for only a few years and who accordingly have only moderate uratic deposits. With these the hydrochloric acid treament is usually very effective and a permanent cure is possible. The second class includes cases of chronic typical or irregular gout in which in the course of years very considerable deposits and tophi have formed. These patients also experience great improvement in the general condition and cessation in the progress of the disease. Further attacks are not altogether prevented, but are usually not severe. The acid is effective only in preventing new deposits and does not cause solution of those already present. In the third group he places the severest cases of chronic gout, and patients of this type apparently benefit but little by the use of the acid. The author also recommends the addition of from 2 to 400 grams of crude hydrochloric acid to a bath tub full of warm water as an efficient means of promoting cutaneous activity in gouty patients. The patients should stay in the bath about ten minutes and repeat it at intervals of one or two weeks.

Dysentery Due to Ciliates.—Rheindorf describes the conditions present in six specimens of large intestine obtained from patients dying of dysentery in the Russian-Japanese war. In these there were found large numbers of organisms which could be identified as ciliates, probably the *Balantidium coli*. There has been doubt in previous instances as to the rôle played by the organism in causing the symptoms, some authors have denied the pathogenicity of the animalcule, but the majority consider it as the etiological factor of this form of colitis. Rheindorf is of the same opinion and states that in microscopic sections the parasites could be found far below the surface of the intestine and unaccompanied by the bacteria. The mucous membrane showed areas of necrosis and ulcers with undermined edges extending to the muscular layer. In some instances there was a considerable inflammatory reaction and in places there was pronounced edema of the submucosa. The parasites were from 50 to 80 microns in diameter and were most numerous in the submucosa at the edges of the ulcers. About 100 cases have been reported with 20 deaths; most of these have been in Russia and Scandinavia. The infection is thought to take place from the pig, which nearly always harbors the parasites in its intestine.

Thyroid Disturbance Caused by Iodine Intoxication.—Warschauer reports an unusual instance of intoxication apparently induced by potassium iodide. The patient was a woman 28 years of age who came under another physician's care on account of a chronic eczema of one leg. This was considered as being syphilitic in nature and inunctions of blue ointment and potassium iodide were administered off and on during four weeks. The patient then began to suffer from great weakness and an erythema appeared over the entire body, the face became edematous, there was loss of appetite, violent diarrhea, subnormal temperature, and a pulse of 100-120. At this time she came under the author's observation and the potassium iodide was stopped and the diarrhea checked with opium. The condition continued to grow worse, however; the skin became very dry and scaly, the hair fell out, the emaciation became extreme, the loss of weight amounting to sixty pounds in seven weeks, and a consultant made the diagnosis of Addison's disease. The pulse could not be counted, at times there was delirium, bed sores appeared, and the urine became albuminous. Earlier in the illness the administration of thyroid tablets had been tried, but had been given up again owing to cardiac distress. Now, as a last resort, this remedy was again resorted to, later

on supplemented by sodium phosphate. At the end of eight days the improvement was very perceptible and at the end of about four months the patient's condition was practically normal in all respects. The author regards the case as an instance of thyroid disturbance due to intoxication by potassium iodide.

Münchener medizinische Wochenschrift, December 3 and 10, 1907.

The Minimum Albumin Requisite.—Forster, in discussing the subject of nutrition, says that it is coming to be realized that there is a danger in reducing the albumin intake to the minimum at which nitrogen balance can be maintained. In addition to albumin, fat, and carbohydrates the human body requires for the growth and maintenance of its organs a sufficiency of other substances such as the inorganic salts. In food stuffs these are found in combination with albuminous bodies or in close relation with these, so that if the amount of proteid ingested is greatly reduced there is also risk of impairing nutrition through deficiency in salts. Furthermore, the breaking up of albumin in the body results in the formation of certain essential substances such as the digestive ferments, protective bodies, internal secretions, etc. It has been proved for some of these, and it is probable for the others, that their production is in proportion to the splitting of albumin in the body, and it is therefore to be expected that with low albumin metabolism disturbances in health may result from deficiency in such bodies. Until the conditions underlying both of these processes have been more fully elucidated it is desirable from the standpoint of general physiology and hygiene to maintain an active proteid metabolism and not to reduce the albuminous food stuffs too low.

Three Thousand Ethyl Chloride Narcoses.—Herrenknecht, who has conducted three thousand anesthesias with ethyl chloride without any mishap, considers that when carefully used by those experienced in its administration it is the safest anesthetic at our disposal, not excepting laughing gas. In five cases of the series anesthesia could not be induced owing to the great restlessness of the patients while in the first stage of excitement. The action of the anesthetic may be divided into four stages: First, the prenarcotic analgesic stage; second, the stage of excitement; third, the stage of deep sleep, and four, the postnarcotic analgesic stage. If the patient shows signs of awakening before the surgical procedure has been finished, a second anesthesia may immediately be begun, but in general for operations that are likely to consume more than five minutes it is preferable to begin with ethylchloride and continue with ether or chloroform. Operations requiring only a half to one minute may be performed in the prenarcotic stage. During this the patient is conscious, but has little or no sensibility to pain. Healthy persons are able to walk home alone immediately after the operation. An important observation is that during the anesthesia erotic delusions are often present, so that especially in dealing with women it is desirable to have witnesses at hand. The author uses an Esmarch chloroform mask with an impermeable covering leaving an empty space between the covering and the flannel. A small circular opening is cut in the covering and through this the anesthetic is sprayed on the flannel. The edge of the rubber covering extends beyond the mask, so that it may be closely adapted to the features of the patient by the fingers of an assistant. Ordinarily 2-3 g. of ethyl chloride are sufficient to produce anesthesia, 5 g. being but rarely necessary.

A Case of Swine Erysipelas in Man Cured by the Use of Serum.—Welzel says that several cases have been reported in which human beings, usually veterinarians, have been infected with the bacilli of swine erysipelas. In performing the immunizations which are now done on a large scale, the antiserum is injected into the animal and also a very small amount of a pure culture of the bacilli. In doing this it not infrequently happens that the operator pricks or scratches himself, owing to the restlessness of the animal. Of five cases of this sort reported one ended fatally and the ordinary surgical measures applied did not appear to modify the course of the disease in the others. Another veterinarian who accidentally inoculated himself promptly injected some of the immune serum, with the result that the symptoms quickly subsided. Welzel's own patient was a veterinarian who inoculated himself in the course of his work and manifested symptoms of a severe infection that threatened to become generalized. A single injection of the ordinary immune serum used for treating pigs sufficed to arrest the infection and produced almost instant relief in regard to both the pain and the local symptoms.

Renal Decapsulation in Eclampsia.—Franck summarizes the histories of nine cases in which Edebohl's suggestion of renal decapsulation for the treatment of eclampsia has been carried out and adds the description of a tenth case of his own. In this instance the patient, who had passed into the status eclampticus and had seizures every ten minutes, did not improve after accouchement forcé and fifteen hours later was practically moribund, with suppression of urine. Double decapsulation was done without anesthesia and a diminution in the attacks very promptly resulted, so that during the succeeding twenty-four hours there were very few and twenty-four hours after the operation they ceased entirely, the patient became conscious, and a considerable amount of urine with only a comparatively moderate albumin content was voided. The improvement in the patient's condition was striking, but she died as the result of a bronchopneumonia on the fourth day. The author considers that while the mortality of the reported cases is about 30 per cent., this is in large measure due to the fact that most of the patients were already in desperate straits, and he believes that in cases in which the seizures persist after the uterus has been emptied, decapsulation should immediately be resorted to.

Employment of Adrenal Extract in Spinal Anesthesia. Michelsson is of the opinion that the addition of adrenal extract to the anesthetic injected in inducing spinal anesthesia is not only useless but even undesirable, and believes that some of the disagreeable sequelæ of the procedure as ordinarily carried out may be referable to this factor. The first impetus to the use of adrenalin for this purpose was given by the work of Dönitz, who found on experimenting with cats that the animals withstood a larger amount of cocaine injected intraspinally if adrenalin was present than if this was omitted. He adopted as a control the figures given by Eden, who gave cocaine alone, but he did not take into account the comparative weights of the animals used in the two sets of experiments, and Michelsson has found that actually the fatal dose per kilogram was practically the same whether adrenalin was used or not. Michelsson's own experience has been that patients anesthetized without the use of suprarenal gland preparations suffer less from headache, backache, etc., than when the drug is used.

French and Italian Journals.

Tubercle Bacilli Entering by Way of the Intact Skin.—V. Babès has shown that the tubercle bacillus may enter the body through the unbroken skin, and that this may happen especially in the infant on account of its more tender skin. The entrance of the bacteria is favored by washing and shaving the skin, and a certain amount of dirt and scales upon the skin act as a protector against their entrance. The germs pass directly to the nearest lymphatic glands. Slight skin lesions in children and eczema favor the entrance of the bacilli. Tuberculosis which has thus reached the glands progresses very slowly and is often found in the glands of the mediastinum and the bronchial glands at autopsy, without having given any signs during life. Such children are called scrofulous.—*La Presse Médicale*, June 15, 1907.

Acute Pulmonary Edema.—H. Mery and L. Badonneix say that acute pulmonary edema is always an active process resulting from a sudden elevation of arterial tension in the pulmonary artery and characterized by a sudden effusion of serum into the alveoli. It is distinguished from passive congestion by the suddenness of its onset and the severity of its results. It is essentially noninflammatory. It results from affections of the kidneys, and of the aorta, in gouty subjects, and in rheumatic conditions, as well as in some forms of intoxication. There is present arterial edema, and an afflux of blood favored by vasodilatation of the arterial system. Various theories are advanced as to its causation; the angioneurotic and toxic are the principal ones. The lungs are rigid, turgescent, and erectile. There is intraalveolar edema, the alveoli being distended with an albuminous fluid without fibrin. Symptoms are urgent dyspnea, respiratory anguish, and pressure of crepitant and bubbling râles. There is no modification of the respiratory rhythm, and no elevation of the temperature is observed. Death occurs rapidly, often after more or less severe convulsions. The treatment of the condition is mainly prophylactic. Sparteine and strophanthus are often of considerable value, but the authors say that the use of digitalis is strongly contraindicated. Morphine is never admissible. Oxygen inhalations will sometimes be found to be of real service.—*Gazette des Hôpitaux*, September 26, 1907.

Book Reviews.

The Practice of Obstetrics by American Authors. Edited by Charles Jewett, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Third Edition, Revised and Enlarged. Illustrated with 484 Engravings, 46 of which are in Colors, and 36 Colored Plates. New York and Philadelphia: Lea Brothers & Co., 1907.

The third edition of this work is very little larger than the previous one; but six of the thirty-four chapters are by new writers. We miss the contributions of Drs. Palmer, Crockett, and Chapin, just as in the former edition we did those of Drs. Browning, Davis, and Etheridge which appeared in the original work. The first chapter, on anatomy, still remains one of the best on the subject. The third chapter, on changes in the maternal organism caused by pregnancy, is a new one and is written by Dr. W. S. Stone; the chief feature of it is a section on the normal metabolism of pregnancy and a page of bibliography (almost exclusively German). The chapters on duration of pregnancy and on hygiene and management of pregnancy are also by Dr. Stone; in the former chapter we miss the section on evidence of former pregnancy; the bibliography (as above) is present. The chapter on toxemia of pregnancy is by the same writer, and is, we think, the best of his contributions. Dr. Bartley contributes the chapter on malformations, injuries, and diseases of the newborn child, but much of it is couched in the same words as were used by Chapin in the previous edition. The book, like all works of composite authorship, contains chapters of very unequal merit. The sections on anatomy, the management of normal labor, eclampsia, and puerperal infection are models of what such work should be. As a whole, the book is exceedingly useful; the illustrations are particularly good, and the shortcomings are few and insignificant beside the many sterling qualities it possesses.

Clinical Therapeutics. A Handbook on the Special Treatment of Internal Diseases. By Alfred C. Croftan. Second Edition, Revised. Chicago: Cleveland Press, 1907.

That a second edition of this work has been demanded within a year speaks well for its popularity. After a careful perusal the reason is not hard to find, for the author has supplied that which is so often lacking in works on materia medica. A knowledge of the physiological action of drugs is properly presupposed and the text deals more with their application and indications. But above all we note the careful attention to the details of methods other than that of administering drugs. Physical therapeutics here have a champion who has used them and is a strong advocate of them. Hydrotherapy is especially prominent, and his technique is excellent and carefully given, including the temperature, duration, and manner of application. Rest, exercise, climate, and many of the smaller comforts such as serve to stem the ravages of disease are fully and rationally presented. The work is extremely interesting, helpful, and readable. Indications are given alongside the contraindications and the reader feels that he is dealing with sick humanity and not with laboratory animals. It is without doubt one of the best expositions of clinical therapeutics that we have seen. Some of the newest and insufficiently tried methods the author has purposely omitted, since they have not yet found their proof or place. This edition does not differ much from the first, except that it has been thoroughly revised.

The Principles and Practice of Modern Surgery. By Roswell Park, A.M., M.D., LL.D. (Yale); Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, N. Y.; Member of the German, Italian, and French Surgical Societies; Ex-President of the American Surgical Association and of the Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1907.

This individual work succeeds the Treatise on Surgery by American Authors, the third edition of which has just been exhausted. The material and illustrations in that treatise have been freely used in this new volume. The object of this present volume, the author states, is to place the subject before students and practitioners in a way to instruct from the beginning through to the operative and post-operative treatment. Obsolete and obsolescent material has therefore been excluded and the pages are devoted to present-day principles and practice, stated as clearly and succinctly as possible. Illustrations have been freely employed wherever a point could be so explained to the eye. A chapter of special value is the one bearing on tumors, in the preparation of which he is indebted to Dr. H. R. Gaylor, who has contributed certain material. Tumors are classified and considered as follows: (1) Cysts, (2) dermoids, (3) teratomas, (4) tumors of connective-tissue type, (5) tumors of nerve elements, (6) tumors derived from epithelium. The author does not feel justified in lauding too highly the newly introduced system of opsonic therapy and holds that suspension of judgment is demanded until more extensive trial is made of it. In considering the treatment of tuberculous arthritis he states that the fundamental idea expressed in all of the methods for enforcing rest by traction is of American origin, and constitutes one of the advances in surgery for which the world is indebted to America. For a long time it was referred to in Germany as the American method, and yet now the Germans claim so much for it that one of their surgeons has written a book of 600 pages devoted to the employment of traction for various surgical purposes, in which but little credit is given to the men who originated it. Of special interest is the chapter on the abdomen and abdominal viscera. One hears to-day of many insisting that the abdomen is too often opened; Dr. Park believes it would be more just to say that it is opened by too many. The book as a whole is one that is in every way an exposition of the present state of surgery and must take its place as an authority.

A Text-book of Physiological Chemistry. For Students of Medicine and Physicians. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology at the Baltimore Medical College. Third Edition, Thoroughly Revised. Philadelphia and New Lork: Lea Brothers & Company, 1907.

In its general arrangement this admirable work remains unchanged, but inspection of the several sections shows that it has undergone careful revision. This is particularly apparent in the first two chapters and in those on the ferments and on the urine, which are fully representative of the many advances that have been made during the past year or two in these departments of physiological chemistry. Most of those interested in this subject are already familiar with Professor Simon's authoritative text-book and those who are not may be strongly urged to remedy what is a real deficiency.

Text-book of Diseases of the Skin. By Arthur Van Harlingen, Ph.B. (Yale), M.D., Emeritus Professor of Dermatology in the Philadelphia Polyclinic, Dermatologist to the Children's Hospital, Fellow of the College of Physicians of Philadelphia, Member of the American Medical Asociation. Fourth Edition, Thoroughly Revised and Rearranged, with 102 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907.

This book differs from previous editions of the work in the arrangement of the description of the various diseases. Instead of being entered alphabetically, as before, these are now arranged according to the classification generally adopted by American teachers, thus making it more useful to the student. After considering the anatomy and physiology of the skin and symptomatology, he treats diseases of the skin according to the following classification: Class I., Hyperemias. Class II., Inflammations. Class III., Hemorrhages. Class IV., Hypertrophies. Class V., Atrophies. Class VI., New Growths. Class VII., Neuroses. Class VIII., Diseases of the Appendages: (1) the nails, (2) the hair and hair follicles, (3) the sebaceous glands, (4) the sweat glands. Class IX., Parasitic Affections: (1) diseases due to vegetable parasites, (2) diseases due to animal parasites. This classification is the one based upon that of Hebra and upon a nomenclature sanctioned by the American Dermatological Association. By its general adoption students all over the country are being taught on the same general scheme. Much of the "confusion of tongues" has arisen from the effort on the part of each writer to put forth such a classification and nomenclature as seemed most perfect, but with little regard to the arrangement of others.

Report on the Advancement of Pharmaceutical Chemistry and Therapeutics. Volume XX., 1906. Darmstadt: E. Merck & Co., 1907.

This annual contains detailed descriptions of the new drugs and new uses of old drugs compiled from the literature of 1906. It will be found useful as a work of reference, containing, as it does, information regarding many of the most recent synthetics and other drugs of German preparation.

Society Reports.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held November 18, 1907.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

Some New Points in the Treatment of Excessive Gastric Secretion.—Dr. L. KAST read this paper.

Report of the Committee on the Death of Dr. Richard H. Derby.—The Chairman, Dr. C. COLE BRADLEY, read this report.

Report of the Committee on the Death of Dr. Francis H. Markoe.—The Chairman, Dr. FRANCIS P. KINNICUTT, read this report.

Gallstone Disease in Its Surgical Aspect.—Dr. FORBES HAWKES said that when a positive diagnosis of gallstones had been made in a given case, the question arose, did the condition belong among those to be treated by medical means or by surgical ones? If we excluded those cases (and he was not at all sure that even those should be excluded) in which gallstones were being constantly passed with slight discomfort to the patient, and those in which the risk of any surgical procedure was very great from cardiac, pulmonary, renal, or arterial changes, or from a marked hyperadiposity, the speaker thought he was voicing the opinion of many conservative surgeons to-day when he said that the remaining conditions might best be treated by surgical methods. Gallstone surgery had been and was still being opposed by many medical men in much the same way that the surgery of the appendix was opposed. Gallstone patients were liable at any time to the following serious complications: (1) Abscess of the gall-bladder, often with subphrenic abscess secondary to it; (2) gangrene of the gall-bladder, with ensuing spreading peritonitis; (3) perforation of the gall-bladder into the duodenum, stomach, or transverse colon, with occasional intestinal obstruction from the contents or from subsequent constriction bands; (4) impaction of one or more of the calculi in the common or hepatic duct, followed by obstructive jaundice and later by ascending infection along the liver ducts, resulting in abscess of the liver, localized and operable, or diffuse and beyond the reach of the surgeon; (5) chronic hepatitis and chronic pancreatitis; (6) cancer developing in the vicinity of the gallstones. Before surgeons could conscientiously recommend operation as a routine measure with gallstones, they had to show that the operation *per se* was not an extra-hazardous one and that their final results were better in the cases operated on than in those treated by medical means alone. This had now been done by many surgeons the world over, and gallstones were being recognized more and more as objects which the surgeon was called upon to remove.

Diseases of the Liver Amenable to Surgical Treatment.—Dr. CLARENCE A. MCWILLIAMS, in this paper, briefly considered some surgical aspects of liver diseases, the indications for operative procedures, and the results. Much of it was borderline surgery, the boundaries of which had not as yet been clearly defined. To accomplish this a sympathetic attitude between the physician and surgeon must be maintained, each realizing his own limitations and the others' good intentions. The first condition discussed by the author was cirrhosis of the liver, in which statistics showed that surgical measures sufficed to relieve from 30 to 40 per cent. of patients affected with this disease of their ascites. Notwithstanding this fact, surgeons in general saw very few cases of ascites. The heavy mortality of about 20 to 30 per cent. in the past probably explained the reluctance of the physician to resort to surgical procedures, which might also possibly be accentuated by ignorance of the good results thus obtained. This mortality would be much reduced when the patients were operated on as soon as the ascites first developed, before the liver cells were too extensively degenerated and before the patients were too enfeebled by malnutrition. It was no fair test of the operation when it was performed as a last desperate chance. The operation was contraindicated when the patient was enfeebled by disease of the heart and of the kidneys, and when the liver had contracted to the extent of producing urobilinuria and acholia and hypocholia of the feces. Very successful results had also been obtained by performing the operation of drainage of the biliary passages (cholecystostomy) in the hypertrophic variety of cirrhosis of the liver, accompanied by icterus. According to Kocher, it would be the rule in all diseases of the liver accompanied by persistent jaundice, in which the latter was not clearly due to an inoperable disease, such as advanced liver and pancreatic cancer, to perform an exploratory laparotomy. In any such procedure, whatever be the ultimate cause, as was the case with calculus in the common duct, it went without saying that the operation should not be put off until the changes in the liver had gone on to such an advanced stage as to threaten the cholemic condition. In abscess of the liver the diagnosis in this climate was often rendered difficult by reason of the absence of any appreciable etiological factor. This was particularly true in the chronic cases, where there might be no fever present. In addition, the general leucocyte count might not be much elevated because of the lack of absorption through the thick walls of the abscess. Some cases, owing to the intermittent type of the fever, were usually mistaken for malaria; in other cases, typhoid fever was suspected. Malignant disease of the liver might also be mistaken for abscess of the liver. In many cases where there was doubt as to whether or not an abscess of the liver was present, the doubt must be cleared away by an exploratory puncture by means of a full-sized needle, always employing a general anesthetic, and with the strictest aseptic precautions. The existence of primary cancer of the liver was at one time denied, yet there could now be no doubt of its occurrence, as was proven by a number of published cases. In the early stage diagnosis was very difficult, and even when the abdomen was opened it might be perplexing to make an exact diagnosis of a malignant growth from gummata, simple tumors, etc. In partial or complete hepatoptosis the treatment in general consisted in the vast majority of cases in applying a well-fitting abdominal supporter of some kind.

Medical Treatment of Gallstone Disease.—Dr. REYNOLD WEBB WILCOX said that about eighteen months ago, when he read a paper on this subject before one of the national societies, one of the surgeons who participated in the discussion had expressed surprise that he had said anything about dissolving gallstones *in situ*. Still, one should not lose sight of the fact that this theory gained a firm foothold among the older writers, and that the use of Durande's mixture of turpentine and ether was sometimes followed by a cessation of symptoms for many years. The speaker said that the use of olive oil followed by high colonic irrigation with ice water had brought relief for long periods. While the number of cases thus relieved was comparatively small, we should bear in mind the fact that in from six to ten per cent. of all cadavers, gallstones were found, and that fully three-fourths of these were in persons over fifty years of age, and that of these not more than five per cent. of the cases in which gallstones were found gave any antecedent history of gallstone disease. Therefore the cessation of symptoms was not evidence that gallstones had been dissolved. The treatment of gallstones, Dr. Wilcox said,

was absolutely surgical, first, last, and always, but the treatment of gallstone disease had nothing whatever to do with surgery. The latter was the treatment of the condition of which gallstones were the final expression, and when the gallstones had been removed by surgical means, then came the treatment that would prevent the formation of more stones. There were two principal varieties of gallstones: (1) The calcium-bilirubin stones, which were formed in the biliary passages in the liver; (2) those of cholesterin, which were undoubtedly formed in the gall-bladder. That the calcium bilirubin calculi were formed in the liver ducts was proven (1) by the fact that after the gall-bladder and ducts had been cleaned out by a cholecystotomy, gallstones of this variety had continued to be passed through the biliary fistula; (2) that in abscess of the liver, gallstones of the calcium-bilirubin variety of such size had been found that they could only have been formed *in situ:* (3) that the Roentgen-ray plates of Dr. Carl Beck showed gallstones of the calcium-bilirubin variety in the liver itself; (4) the gall-bladder having been removed, attacks of biliary colic might continue. As to the modes of infection which gave rise to gallstones, we had (1) those from the intestinal canal, and (2) those from the portal vein, and the problem that we had to solve was to remove all conditions which caused a congestion of the portal system, and particularly those which favored systemic infection of the liver and produced stagnation of viscidity of the bile. The drugs that were indicated were those which caused elimination of the bile through the hepatic cells, and exerted a disinfectant action. Dr. Wilcox then gave a brief outline of his method of treatment in gallstone disease, together with an extensive dietary program. He emphasized the importance of frequent meals in order to secure a pretty free flow of bile. The main point in the medical treatment was to do everything possible to remove all sources of congestion and inflammation of the portal system, and this might be materially aided by massage and exercises, both resistive and mechanical.

Surgical Technique in Diseases of the Biliary Passages.—By Dr. JOHN F. ERDMANN. The author stated that in preparing a patient for any operation connected with the biliary passages he was accustomed to have the abdomen prepared high enough to encroach upon the extreme limits of the costal arch, and low enough to do an appendectomy, should occasion demand, through the usual site. The incision he practised was one through the right rectus muscle, either the outer and middle or the inner and middle third. The incision could be extended downward in a direct line. Free exposure of the cystic and common ducts was readily obtained by rotating the liver. This was done by extending the incision upwards, thereby encroaching upon the diaphragm to quite an extent or by the method of Bevan. Riedel's lobe should always be remembered, as it often resembled or might be mistaken for an inflamed and distended gall-bladder. In cases in which atrophy or apparent absence of the gall-bladder existed, it was advisable to find the main (cystic) fissure, and then trace downward and backward toward the transverse fissure. In these cases, the sandbag or rest, as used in duct work, with free upward extension of the incision in the abdominal wall so that rotation of the liver could readily be obtained, was also of great benefit. In all cases of pericholecystitis accompanying cholecystitis, the adhesions of the omentum, etc., should be carefully released. Gauze packing was then placed between the bladder and the released adhesions or viscera before further search was made. When this was done, search was made for stones in the bladder, cystic duct, and finally in the hepatic and common ducts. It was often impossible in a fully or overdistended gall-bladder that was thickened by either recurring attacks or by the single acute one to feel a stone or stones through the wall. The cystic duct might be hidden in its upper (bladder) portion by the elongation or overdistention of Hartman's pouch. The lower (common duct) portion and the common duct could usually be palpated when the foramen of Winslow was patent, although the speaker said he was never satisfied with palpation of the common duct in a jaundice case, or one recently jaundiced, until he had opened the duct and palpated its interior. This interior palpation should be done, as Mayo had so ably emphasized, with the finger and not with a probe, as stones were often passed by the probe that the finger would reveal. When the bladder was distended he incised the fundus, emptying the contents, and by so doing the pouch of Hartman collapsed, allowing free examination of the upper extremity of the cystic duct to be made. This was also a very decided point to bear in mind when doing a cholecystectomy, as in trying to remove the unemptied bladder, particularly in those who were fat, Hartman's pouch obscured the field of the cystic duct to such a degree as to render the operation not only difficult, but dangerous. Dr. Erdmann then described in detail his technique in performing cholecystotomy, cholecystectomy, and choledochotomy.

Dr. WILLIAM H. THOMSON said he did not know of any diagnostic problem which, on the whole, was so easily solved as a case of single uncomplicated gallstones. In addition to the clinical symptom of the sudden pain with its characteristic radiation, we had physical signs which were as distinctive as those of a calculus in the ureter. With the impaction of a gallstone in the cystic duct there was a point of tenderness which was quite as definite as McBurney's point in appendicitis, and which was located half an inch above and to the right of the umbilicus. In examining a patient for gallstones, he should be asked to sit on the edge of a chair and lean forward, in which posture the abdominal muscles were relaxed. With the examiner standing behind him, the patient should now be instructed to take a full breath, and then, upon expiration, the fingers could be passed underneath the gall-bladder. In obstruction of the common duct, the point of tenderness was at the arch of the false ribs, about two inches above the point of tenderness in cases of involvement of the cystic duct. Another symptom of gallstone colic was the characteristic rigidity of the abdominal muscles, and if the attacks were at all recurrent, we had unmistakable symptoms of a localized gastritis. Then, if there was a history of rigors and jaundice, no diagnosis could be plainer. Dr. Thomson said he protested against calling these biliary concretions stones: they were albuminous mostly in their composition and floated in water, and they were particularly soluble in normal bile before the latter had entered the gall-bladder. Normal bile, when obtained through a biliary fistula, exerted powerful soluble properties on gallstones, but after it entered the gall-bladder it began to be concentrated by absorption of its watery elements, so that its specific gravity rose from 1.010 to 1.030 or even 1.040. Dr. Thomson said the experience of the surgeon with gallstone cases was largely limited to the operating table. The number of cases of actual gallstones—not gallstone disease—was extremely large, and they came under the daily observation of the consultant. The speaker said that in cases in which there were no evidences of any suppurative process nor of any continued inflammatory process, he always advised giving medical treatment a thorough trial. He formerly prescribed ten grains each of sodium benzoate and sodium salicylate to be taken in vichy water an hour after each meal and at bedtime, but more recently he had favored the succinate of sodium, in five-grain doses, taken in the same way. At night he ordered two ounces of olive oil, taken in hot milk.

Dr. A. ERNEST GALLANT said that in his experience with cases of suspected gallstones the diagnosis had not been

as easy as Dr. Thomson's remarks would lead one to believe. He recalled a number of cases of the jaundice recurrent type which were regarded as due to gallstones or cancer of various intraabdominal organs, and in two recent cases so many diagnoses were offered by various consultants that an exploratory operation was done, and in both cases, upon opening the abdomen, the speaker said he found nothing but a movable kidney which was dragging on the common or cystic duct. This condition, the speaker thought, was comparatively frequent as a cause of supposed gallstone colic. His plan of clearing up the diagnosis was to raise the foot of the bed, allowing the patient to rest with the shoulders lower than the hips, and in that position the tension relieved and the pain would disappear. The condition could be permanently relieved by the application of a properly fitting abdominal "stock" binder, the use of plaster strapping, as suggested by Dr. Rose, or in women by wearing a specially designed corset.

Dr. Richard Ward Westbrook of Brooklyn said he failed to comprehend the line of distinction drawn by Dr. Wilcox between gallstone disease and gall-stones. Gallstones occurred as a result of various infections in the bile passages, and in their turn their presence assisted to renewed infection, from which arose symptoms known as gall-stone disease. There was no gallstone disease, as such, although there were well-recognized predisposing causes. The surgeon operated primarily not for the removal of the gall-stones, but for the purpose of draining the biliary tract, and when that was effectually done the infection was removed and there was no recurrence of the gallstones. About three years ago Dr. Mayo reported one thousand cases of gallstone operations without any recurrence where cholecystostomy had been done. In three or two instances where recurrence had taken place, small stones had been overlooked in the common duct. Dr. Westbrook said that gall-stones were formed primarily in the gall-bladder, secondarily in the ducts, and they did not form in the liver ducts to any such extent as Dr. Wilcox would have us suppose. This fact had been frequently confirmed on the operating table, and the *x*-ray plates of Dr. Carl Beck were not as convincing as were the statistics of Mayo and others. The medical treatment of gallstones, the speaker said, should be confined to the prophylactic aspect of the condition and the coexisting inflammatory or other complications. The actual cure of gallstone producing symptoms was surgical, and we could not divide these cases into those that could be cured, or "eliminated," medically as distinguished from those that could be cured surgically. There was no proof, the speaker said, that gallstones had ever been dissolved by medicinal substances taken by the mouth, although such stones may have been dissolved by injections through a sinus directly into the ducts. The operation for the removal of gallstones should be done thoroughly, as statistics showed that they did not recur with complete removal and proper drainage.

Dr. Achilles Rose said that he had had the privilege of listening to the lecture of Dr. Wm. H. Thomson on chololithiasis (not cholelithiasis as it is erroneously spelled by many) and that he remembered well how Dr. Thomson dwelt emphatically on the fact that formation of gallstones could only take place when infection as well as stagnation was present. Experiments on animals had proved that there could be no formation of gallstones without stagnation. Dr. Rose felt disappointed that the two speakers on therapy of gallstone disease, Dr. Hawkes and Dr. Wilcox had hardly considered this important fact, which should form the basis of prophylaxis and even of therapy, as the speaker had demonstrated in numerous writings, when he had shown that the relaxation of the abdominal muscles could be the cause of disorder of abdominal circulation in as far as the abdominal muscles controlled the distribution of the fluids in the abdomen, not only the blood but the water in the tissues and in the viscera—the secretions—among them the flow of bile. Relaxation of the abdominal muscles atonia gastrica, would certainly be apt to cause stagnation of bile. The speaker further said that frequently he had been able to convince himself that by properly supporting the relaxed abdominal muscles the circulatory equilibrium was restored, and that in case of gallstone colic the moving gallstones were set at rest, and pain was thus relieved. Dr. Rose said further that we could not dissolve gallstones by any medical treatment with which he was acquainted, but causing immobility of gallstones was good enough therapy in most cases. Among the medicines recommended salicylate of sodium appeared to him the most rational because it produced increased flow of bile which would have the effect of dislodging the wedged-in concrements and bringing them back into the gall-bladder or of eliminating them through the ducts, and also because this drug was, besides being cholagogue, an antiseptic and an analgesic.

Dr. Wm. Van Valzah Hayes said he had been able to demonstrate the value of the succinate of sodium in a number of cases of gallstone disease, and he now regarded it as his sheet anchor in the treatment of that condition. The only other remedy he had found to be of especial value was salicylic acid in combination with oleate of sodium and phenolphthalein (Bauermeister's formula). In the treatment of gallstone disease it was important to prevent irritation of the stomach and duodenum, as Dr. Wilcox suggested. A test meal should be given in these cases, and the functional condition of the stomach studied, so that any gastric abnormality that existed might be corrected. In certain cases surgical treatment was of course imperative.

Dr. Ransford E. Van Gieson of Brooklyn said there were some curious features connected with gallstone disease. One was that a person might have one attack of gallstones and never have another. He recalled a case that came under his observation thirty-five years ago in which the patient had a typical attack of gallstone colic with the subsequent discharge of the stone, and then had remained free from any recurrence for over thirty years, when he died of typhoid fever. Another interesting fact was that gallstones were frequently found post mortem in persons who had never complained of any symptoms pointing to gallstone disease. It was also a fact that cases of gallstone disease that were left alone or treated non-surgically showed a lower mortality than those that were operated upon. It should also be borne in mind that a thorough operation for gallstone disease was a very serious operation, and it should not be resorted to excepting in the face of one of two conditions, namely, infection or impaction. We might have to deal with obliterative inflammation of the gall-ducts without the presence of stones, and the speaker said he recently saw a case of that kind in which operation was performed against his advice, and which resulted fatally.

Dr. Wilcox, in closing, said there was no physical resemblance between the gallstones originating in the liver and those formed in the gall-bladder. When the gall-bladder was removed, of course that obviated the possibility of the formation of any more gallstones, if all gallstones originated in the gall-bladder.

Stated Meeting, Held December 16, 1907.

The Vice-President, Dr. Ransford E. Van Gieson, in the Chair.

Nomination for Officers.—The following officers were nominated for the ensuing year: *President*, Dr. Robert T. Morris; *Corresponding Secretary*, Dr. Frank C. Raynor of Brooklyn; *Treasurer*, Dr. A. Ernest Gallant;

Chairman for the Borough of Brooklyn, Dr. J. Scott Wood.

Report of the Committee on the Death of Dr. Seth D. Close.—By Dr. NATHAN B. VAN ETTEN, Chairman.

Changes in the Bile Occurring in Certain Infectious Diseases.—Dr. HELEN BALDWIN read a paper on this subject, in which she stated that the causes of gallstone formation were but little understood until about twenty years ago, when it was recognized by Budd, Bristowe, and Naunyn that most of the cholesterin in the bile was derived not from the blood, but from the degeneration of the epithelium lining the gall-bladder and the biliary passages, and that the formation of cholesterin gallstones was due to a local affection of these mucous membranes rather than to any constitutional disturbance. Dr. Baldwin said that during the winters of 1903 and 1904 she had had the opportunity of examining 225 specimens of bile which were obtained from autopsies from the City, Bellevue, Presbyterian, and Flood Wright Hospitals through the kindness of the pathologists in those laboratories. The work was done at the laboratory of Dr. C. A. Herter, under a grant from the Rockefeller Institute. By estimating the cholesterin and calcium present, and by studying the physical characteristics of the different specimens, an attempt was made to determine the relation between certain pathological conditions in the bile itself and the deposition of stones. In the routine examination of specimens of bile it was noteworthy that a large number were definitely abnormal. Of the 225 specimens examined, 72, or nearly one in three, showed definite morbid changes in the bile, although the symptoms were so slightly marked that a diagnosis of cholecystitis or of gallstone formation had been made in only two cases. In the series of cases noted 51 of the patients died of some infectious disease, and in 17, that is, one-third of these, there were characteristic changes in the bile which were not noted in patients dying from chronic diseases. With regard to the cholesterin content of the bile, the following facts were noted: That in an early stage of cholecystitis, where there was free drainage from the gall-bladder, and the epithelial cells were but slightly disintegrated, there was a slight increase in the cholesterin content of the bile. That where there was an obstruction to the flow of bile from the gall-bladder, and the bile was filled with masses of degenerating epithelium, there was a marked increase in the cholesterin. That where there was an excess of cholesterin in the contents of the gall-bladder, the most of this increase over the normal amount was held in suspension rather than in solution. Apart from these observations on the cholesterin in the bile, the most interesting fact noted was that cholecystitis in a mild or more marked degree was a common complication, not only of typhoid fever, as had been frequently observed, but also of pneumonia and of suppuration in other parts of the body. Usually this was so slight that it gave no distinctive symptoms, but a histological study of the wall of the gall-bladder showed the beginning of a chronic inflammation, and on examination of the bile there was found a marked desquamation of the epithelial cells of the mucous membrane. If the cystic duct was freely patulous these would be discharged into the intestine, but if there was a tendency to obstruction or if the desquamation of the epithelial cells was excessive, there would be a retention of degenerating epithelium elements in the gall-bladder, with the formation of cholesterin, or eventually the production of gallstones.

Dr. REYNOLD WEBB WILCOX said that Dr. Baldwin's paper was very interesting and furnished absolute proof of what clinicians had suspected for many years, namely, that gallstone formation in the gall-bladder was not the result of a local infection, but was due to a great variety of general infections, of which enteric fever was one and pneumonia was probably another, with the likelihood that several other infections would be proved to be also causative. The proofs sustaining this theory had never before been so well correlated as they had in Dr. Baldwin's paper to-night.

Dr. A. A. BERG said the results of Dr. Baldwin's investigations threw a great deal of light upon one of the functions of the liver, and the part this organ plays in infective diseases. The author of the paper had conclusively shown that the liver was a large excretory organ, and helped to eliminate bacteria both from the systemic and portal circulation. The speaker said that with this additional light thrown upon the infective character of the bile in cases of severe systemic and portal infection, we should be more favorably inclined toward relieving the liver by proper drainage of the bile, and when the symptoms indicated deep-seated septic involvement of the liver we should not hesitate to attempt to relieve the condition by proper drainage of the biliary apparatus through a cholecystostomy. He has had favorable results from such drainage in one case of systemic pneumococcus infection attended with cholecystitic manifestations, in one case of coli infection with similar gall-bladder inflammation. He regrets that in one case of systemic paracolon and typhoid infection, attended with gall bladder infection, he did not similarly drain the biliary passages, for he thinks the fatal issue might have been avoided by such procedure.

Blood Reactions of Inflammations.—Dr. E. E. SMITH read this paper, which will be published later.

Bacterial Vaccines and Curative Sera.—By Dr CHARLES F. BOLDUAN. (See page 6.)

Dr. N. B. POTTER said that Dr. Bolduan's paper contained a very able presentation of this subject, and he had only a few words to add regarding some practical experiences in the use of bacterial vaccines. Without entering into an extended review of different infections, he might say that the staphylococcus infections, particularly the more strictly localized ones like furuncles, acne, boils, and septic conditions were decidedly improved with appropriate doses of bacterial inoculations given at proper intervals. General diseases were apparently not helped as much by the inoculations as were the localized conditions. Nevertheless, the speaker said, he had seen a number of cases of generalized bacterial infection in which striking cures resulted and apparently from the use of the appropriate vaccines. Wright of London had published six cases of streptococcus infection in which the organisms were found in the circulating blood; of these six cases, three were cured after the use of the vaccine treatment and three died. Dr. Algernon T. Bristow of Brooklyn had also reported two cases in which the streptococci were recovered from the blood, and both of these patients were apparently cured by the use of appropriate doses of streptococcus vaccines. Dr. Potter said he had administered the vaccine to Dr. Bristow's cases, and in both the effects of the administrations were so striking that one could not but be impressed with the idea that the vaccine was distinctly curative in its action. Among the other cases seen by the speaker were the following: Dr. J. M. Vancott had also reported two streptococcus cases and Dr. Charles Jewett two puerperal cases, in all four of which the streptococci were recovered from the circulating blood. A number of cases had also been reported in Boston. All of these cases were apparently benefited by the inoculation of the bacterial vaccines. Bassett Smith recently reported a series of cases of Malta fever in which he employed cultures of the organism in small doses, and as the result of his experience he arrived at these conclusions: In the more chronic cases the symptoms were relieved, the course of the disease was shortened, and the opsonic index was correspondingly raised. In the acute cases vaccines had not been found so helpful—in fact, they were injurious oftener than help-

ful. His findings were interesting in view of the relationship between Malta fever and typhoid.

Poliomyelitis Anterior as an Epidemic Disease.—By Dr. Henry W. Berg. (See page 1.)

Dr. B. Sachs said he had hoped that further discussion on this subject of epidemic anterior poliomyelitis would be deferred for at least a year, in view of the investigation that was being made of the subject by a committee appointed for that purpose. This committee was now engaged in the work of analyzing many of the cases that had been reported during the recent epidemic, and when its labors were completed we could expect to learn a great many facts which would render the subject riper for discussion. Dr. Sachs said he could not agree with the idea promulgated by Dr. Berg that the epidemic cases of poliomyelitis anterior were necessarily different from the sporadic, any more than a sporadic case of scarlatina or diphtheria should differ from those seen during an epidemic of those diseases. During an epidemic the virus or toxin of the disease was perhaps more intense or widespread, but we could not make a distinction between the two merely because of the multiplicity of the cases. The chief distinction between the two was that when these cases occurred sporadically we usually had a very imperfect opportunity to study the initial symptoms, while on the other hand during an epidemic the cases were seen earlier and were perhaps more severe. Our earlier conceptions of anterior poliomyelitis were based largely on the late manifestations of the disease, but we were now convinced that it was not at all the same sort of an affection that Charcot and his followers had made us acquainted with. In poliomyelitis anterior there was evidently a very intense infection of the central nervous system, affecting the meninges, the anterior horns of the spinal cord, and at times even the pons and medulla and the central axis of the nervous system. Dr. Sachs said that this fact was hinted at by some writers—including himself—in former years, but it was not until the present epidemic that we had evidence of it. We now had to accept the fact that it was a general infectious disease, and that the form which the infection took varied in different cases. He recalled some cases which had all the features of a multiple neuritis, and a few days ago he saw a boy who had a hemiplegia which came on in the form of an acute infectious disease. He had a facial paralysis, which was part of his hemiplegia, but of the nuclear type, showing involvement of the gray matter of the pons. In relation to the amount of rainfall to the development of these epidemics, to which Dr. Berg had referred, the speaker said that in order to substantiate or disprove that theory Dr. Strauss had communicated with the weather bureau in Washington, asking them to give the amount of rainfall in Sweden for a long number of years. These figures failed to show any marked difference in the amount of rainfall in those years in which the epidemics of anterior poliomyelitis occurred in Sweden and those in which the epidemics failed to occur. This particular point, therefore, required further investigation before any definite inferences could be drawn.

Dr. William M. Leszynsky said he had seen upwards of thirty cases during the present epidemic, and, basing his opinion upon his past experience, it had seemed to him that the cases observed during this epidemic, so far as their clinical manifestations were concerned, were entirely different from the sporadic cases he had seen during the last twenty years. Both in their early and late manifestations they failed to correspond. It was a peculiar fact that while we called this an epidemic of anterior poliomyelitis a very large proportion of the cases, had they occurred sporadically, would not come under that classification. The speaker reported in detail several such cases coming under his observation, in which the symptoms were so anomalous that under ordinary conditions they would never be classified as examples of anterior poliomyelitis.

Dr. Nathan B. Van Etten said that last September he saw six cases of anterior poliomyelitis, four of them in one day and three of them in a single family. The four cases that he saw in one day were in widely separated parts of the city. The three in the same family occurred three days apart. Three of the six cases were severe, although none ended fatally. One patient was still unable to walk, but was making a slow recovery.

Dr. Berg, in closing, said he did not say in his paper that the epidemic cases were different from the sporadic cases; on the contrary, he said that the former were not examples of poliomyelitis anterior at all. He had tried to show by the report of autopsy findings on the early sporadic cases that there was no infection of any organ of the body nor involvement of the central nervous system, except the anterior gray horns in the cord, whereas in epidemic cases there was a general encephalitis and myelitis, with infection of the pia mater and basal ganglia. He intended to indicate that the epidemic cases had not the slightest similarity to the sporadic cases, excepting that the lesion of the latter was in the general pathology of the former. As to etiology, the only point he tried to emphasize was that these various epidemics had apparently occurred in unusually dry seasons. He called attention to the fact that sporadic anterior poliomyelitis was largely limited to children; in fact, it was formerly known as infantile spinal myelitis, whereas 34 per cent. of the epidemic cases occurred in adults. The late Dr. E. C. Seguin, in his lectures on this subject, explained our scant knowledge of the pathology of anterior poliomyelitis by the fact that very few of the patients died, whereas the mortality of these epidemic cases ranged from 18 to 20 per cent. The more closely clinicians studied these cases, the more firmly they became convinced that they were not cases of anterior poliomyelitis at all. They were apparently examples of an acute infectious disease of the cerebrospinal axis involving the meninges, cord, and brain.

Philadelphia County Medical Society.

At a stated meeting held November 13, Dr. C. A. Veasey read a paper entitled "The Treatment of Trachoma." Dr. Alfred Gordon presented a communication entitled "The Pathogenesis of Stump-hallucination apropos of a Case of Twenty-seven Years' Duration," and he exhibited the patient. He pointed out that there are two views as to the origin of the sensation of the presence of an amputated member, one of which attributes it to peripheral irritation resulting from changes in the terminations of the divided nerves; and the other that it has its origin in the cerebrum, representing the memories of sensations received at earlier periods. The hallucination in question lasts for varying periods of time, the longest that Dr. Gordon had been able to find recorded having been twelve years. In his own case a railway laborer had had his arm crushed and amputation at the shoulder-joint had been necessary. The sensation of the presence of the amputated member had persisted during all of the twenty-seven years that had elapsed since the operation, despite the intervention of an attack of hemiplegia affecting the side on which the member had been removed. Dr. Hobart A. Hare read a paper entitled "Some Investigations which Place Well-known Therapeutic Measures upon a Scientific Basis." He cited the fact that experimental observations have been made showing the power of moderate, tonic doses of quinine to increase the phagocytic activity of the polymorphonuclear leucocytes, thus confirming the practice of administering this drug in states of infection. Large doses, on the other hand, diminish phagocytic activity, and are thus capable of doing harm. Dr. Hare himself has demonstrated that moderate doses of alcohol appear to be capable of increasing the bacteriolytic power of the blood. Dr. E. J. G. Beardsley read a paper entitled "The Toxic Effect of Urotropin."

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF COLORADO.

Denver, October 1 and 2, 1907.

TOXICOLOGY.

1. Give symptoms and treatment of chronic poisoning by acetanilid.
2. Name two antidotes to carbolic acid poisoning, and state mode of action of each.
3. Give symptoms of an overdose of wood alcohol.
4. State the toxic effects of the local use of iodoform.
5. Discuss the symptoms and treatment of a patient with mercurial ptyalism or salivation.
6. Mention the treatment of a case of strychnine poisoning.
7. Give symptoms of poisoning by atropine.
8. Name the symptoms of too long continued administration of Fowler's solution.
9. Treatment of an acute case of lead poisoning.
10. Give the symptoms and treatment of poisoning by aconite.

CHEMISTRY.

1. Define (*a*) analysis, (*b*) synthesis.
2. What are (*a*) bases, (*b*) acids, (*c*) salts.
3. Give the preparation and properties of HNO_3.
4. Name the standards based on water.
5. Illustrate why a salt of mercury is incompatible with potassium iodide.
6. What do you understand by carbohydrates?
7. Proteins are compounds of what?
8. How is glycerin prepared?
9. How would you test the gastric contents for morphine?
10. Give a test for indican in urine.

PHYSIOLOGY.

1. Define the science of physiology.
2. Define the terms metabolism, anabolism, and catabolism.
3. Name the digestive ferments, giving origin and function of each.
4. Name the eliminative organs of the body, and tell what is eliminated by each.
5. Define the purpose, chemistry, and mechanism of respiration.
6. What are the functions of the lymphatic system?
7. Define a reflex arc.
8. Give the amount of urine passed per diem by an adult, together with the normal color, reaction, and constituents.
9. How may the amount of urine be physiologically increased or diminished?
10. Give the functions of the skin.

ANATOMY.

1. Give brief description of the vascular anatomy of the arm and forearm.
2. What is the origin of the ovarian arteries?
3. What does the pudic artery supply?
4. Bound Scarpa's triangle.
5. Name the different kinds of joints, giving examples of each.
6. What anatomical structures are divided in making a McBurney incision?
7. What is the nerve supply of the flexor group of muscles of the forearm?
8. What is the origin of the spermatic arteries?
9. What is the origin and insertion of the sartorius muscle?
10. What muscles are attached to the greater trochanter of the femur?

PATHOLOGY.

1. Define pathology.
2. Give the pathological lesions which may result from syphilitic or rheumatic iritis.
3. Define osteomyelitis, and give cause of same.
4. How would you recognize cerebrospinal fluid, and how would you test it in tuberculous meningitis?
5. Give a cause and pathology of pulmonary edema.
6. (*a*) What is necrosis? (*b*) What prevents hemorrhage in gangrenous lesions?
7. What is thrombosis?
8. Give pathology of smallpox.
9. What diseases produce albumin in the urine?
10. Give pathology of lobar pneumonia.

SYMPTOMATOLOGY.

1. Differentiate between tenia solium and tenia mediocanellata, and describe the symptoms which they produce.
2. Give the causes and symptoms of acute intestinal obstruction.
3. Describe the symptoms and conditions that may be observed in a case of sunstroke.
4. Give symptomatology, diagnosis, and prognosis of chronic lead poisoning.
5. Give the symptoms and physical signs of aortic stenosis and mitral regurgitation.
6. Describe symptoms and course of acute lobar pneumonia. Differentiate between lobar and bronchopneumonia.
7. Give the causes, symptoms, diagnosis, and prognosis of acute nephritis.
8. Give the symptoms and diagnosis of renal calculus.
9. Give etiology, symptomatology, diagnosis, and prognosis of arthritis deformans.
10. Give the causes, symptoms, diagnosis, and prognosis of leukemia.

SURGERY.

1. Give the etiology and symptoms of erysipelas.
2. What are the symptoms and treatment of tuberculous peritonitis?
3. Describe a subphrenic abscess, and give the causes and symptoms.
4. Give the early symptoms of hip joint disease.
5. Give the symptoms and cause of hypertrophy of the prostate gland.
6. What is leucocytosis, and its value in surgery?
7. What are the symptoms of fracture of the internal condyle of the humerus, and mention a deformity that may follow.
8. Give differential diagnosis between malignant and benign tumors.
9. What is the cause of dry gangrene?
10. Give differential diagnosis between synovitis of knee-joint and housemaid's knee.

OBSTETRICS.

1. (*a*) What is pregnancy? (*b*) What is fecundation? (*c*) What changes take place in the ovum after fecundation?
2. (*a*) What is the funis? (*b*) What are the dimensions of the placenta and funis at full term?
3. (*a*) What is extrauterine pregnancy? (*b*) Give the symptoms. (*c*) Give the diagnosis.
4. (*a*) What is hydatid pregnancy? (*b*) What are its symptoms and termination?
5. What are the causes of albuminuria and edema?
6. (*a*) What is labor? (*b*) How many stages is it divided into? (*c*) What is the best method of delivering the placenta?
7. How may a child be resuscitated when apparently stillborn?
8. What is meant by "mechanism of labor"?
9. What forms of hemorrhage are met with before, during, or after labor, and treatment of each?
10. (*a*) What are the causes of rupture of the uterus? (*b*) What are the symptoms and what treatment is indicated?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS

BOARD OF MEDICAL EXAMINERS, STATE OF COLORADO

Denver, October 1 and 2, 1907

TOXICOLOGY.

1. Chronic poisoning by acetanilid may give rise to decrease in the number of red blood cells; the face is livid and covered with perspiration, the respirations become slow and shallow, the pulse soft, compressible, and gradually weaker.

Treatment: Stop further administration of the drug, then support the patient by stimulants, warmth, and strychnine.

2. The chemical antidotes to carbolic acid are the soluble sulphates, such as magnesium or sodium sulphate. With the carbolic acid these salts form insoluble sulphocarbolates.

Milk or white of egg is also an antidote, and acts as such by combining with the carbolic acid to form insoluble or nearly insoluble compounds.

3. Symptoms of an overdose of wood alcohol are: Nausea, vomiting, headache, vertigo, dilated pupils, profuse sweating, delirium, coma, and partial or complete blindness.

4. The toxic effects of the local use of iodoform are: Redness, pain, swelling, fever, eruption, general malaise, headache, vertigo, depression of spirits, delusions, mania, drowsiness, coma, death.

5. Symptoms of mercurial ptyalism or salivation are: Profuse secretion of saliva, fetid breath, spongy and tender gums, tender and swollen tongue and salivary glands, may be a blue line on the gums near the teeth, and the teeth may become loosened; there may be nausea, vomiting, diarrhea, cachexia, and collapse.

Treatment consists in removing the patient from the influence of mercury; mouth washes of potassium chlorate or borax, hot baths, mild purgatives and diuretics, potassium iodide, general tonics, and proper hygiene are all indicated.

6. *Treatment of strychnine poisoning*: "The convulsions are to be arrested or mitigated by bringing the patient under the influence of chloral or chloroform as rapidly as possible; the stomach is to be washed out, and the patient is to be kept as quiet as possible." (Witthaus' *Essentials of Chemistry.*)

7. *Symptoms of poisoning by atropine*: Dryness of the mouth and throat, thirst, drowsiness, dysphagia, face flushed, pupils much dilated, eyes prominent, numbness and partial paralysis of the extremities, and there may be delirium and coma.

8. *Symptoms of too long continued administration of Fowler's solution* are: Puffiness of the eyelids, diarrhea, colic, and general abdominal pain, erythema, and possibly neuritis and paralysis.

9. *Treatment of acute lead poisoning* consists in removing the cause and administering the antidote, "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic, or by the use of the stomach tube." (Witthaus' *Essentials of Chemistry.*)

10. Poisoning by Aconite: "*The symptoms* usually manifest themselves within a few minutes; sometimes are delayed for an hour. There is numbness and tingling, first of the mouth and fauces, later becoming general. There is a sense of dryness and of constriction in the throat. Persistent vomiting usually occurs, but is absent in some cases. There is diminished sensibility, with numbness, great muscular feebleness, giddiness, loss of speech, irregularity and failure of the heart's action. Death may result from shock if a large dose of the alkaloid be taken, but more usually it is by syncope.

"The *treatment* should be directed to the removal of unabsorbed poison by the stomach pump, and washing out of the stomach with infusion of tea holding powdered charcoal in suspension. Stimulants should be freely administered." (Witthaus' *Essentials of Chemistry.*)

CHEMISTRY.

1. (*a*) *Analysis* is the splitting up of a compound into its elements or into simpler compounds.

(*b*) *Synthesis* is the building up of a compound from elements or from simpler compounds.

2. (*a*) *Bases* are ternary compounds capable of entering into double decomposition with an acid to produce a salt and water. *Examples*: Potassium hydroxide, KOH; Calcium hydroxide, $Ca(OH)_2$.

(*b*) *Acids* are compounds of an electronegative element or radical with hydrogen, part or all of which hydrogen they can part with in exchange for an electropositive element, with the formation of a base. *Examples*: Sulphuric acid, H_2SO_4; nitric acid, HNO_3.

(*c*) *Solts* are substances formed by the substitution of an electropositive element for part or all of the replaceable hydrogen of an acid. *Examples*: Sodium nitrate, $NaNO_3$; Monopotassic sulphate, $KHSO_4$.

3. HNO_3 is prepared by the action of strong sulphuric acid on potassium or sodium nitrate:

$$KNO_3+H_2SO_4=KHSO_4+HNO_3.$$

HNO_3 is a colorless liquid, with a strong acid taste and reaction. It is a strong oxidizing agent, and dissolves most metals, with the formation of nitrates. With hydrochloric acid, it forms aqua regia, which is capable of dissolving the so-called "noble metals." In damp air it gives off white fumes When strongly heated it is decomposed into H_2O, N_2O_4 and oxygen.

4. The standards based on water are: (1) The freezing point on the thermometer; (2) the boiling point on the thermometer; (3) specific gravity of solids and liquids; (4) the gram (the unit of weight) and the liter (the unit of volume), with their multiples and fractions; (5) specific heat.

5. Both mercurous and mercuric salts enter into double decomposition with potassium iodide, and a soluble iodide of mercury is produced.

6. *Carbohydrates* were formerly defined as substances of unknown constitution, composed of carbon, hydrogen, and oxygen; the last two being in the proportion to form water.

7. *Proteins* consist of carbon, hydrogen, oxygen, nitrogen, and sulphur, some also contain phosphorus, and a few iron.

8. Glycerin is obtained as a by-product in the manufacture of soap:

$$\underset{\text{Tristearin,}}{(C_3H_5)'''(C_{18}H_{35}O)'_3} + 3\underset{\text{Potassium hydroxid,}}{KOH} = \underset{\text{Glycerin,}}{(C_3H_5)'''H_3} + 3\underset{\text{Potassium stearate,}}{(C_{18}H_{35}O)K}$$

10. *Test for indican in the urine*: The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chlorid, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess. (From Witthaus' *Essentials of Chemistry.*)

PHYSIOLOGY.

1. *Physiology* is that branch of science which treats of the functions of living tissues and organisms in a state of health.

2. *Metabolism* is a name given to the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Assimilative, or constructive, called *anabolism*, and (2) destructive, called *catabolism*.

3.—

Digestive Ferments	Origin	Functions
Ptyalin	Saliva	Changes starches into dextrin and sugar.
Pepsin	Gastric juice	Changes proteids into proteoses and peptones in an acid medium.
A curdling ferment	Gastric juice	Curdles the casein of milk.
Trypsin	Pancreatic juice	Changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; in an alkaline medium.
Amylopsin	Pancreatic juice	Converts starches into maltose.
Steapsin	Pancreatic juice	Emulsifies and saponifies fats.
A curdling ferment	Pancreatic juice	Curdles the casein of milk.
Invertin	Succus entericus	Converts maltose into glucose.

4.—

Eliminative Organs	Substances Eliminated
Kidneys	Urine; which consists of water, urea, uric acid, hippuric acid, creatinine, extractives chlorides, phosphates and sulphates, and other salts.
Skin	Perspiration; which consists of water, urea, sodium chloride, other salts, fats, and fatty acids.
Lungs	Carbon dioxide and water.
Intestines	Feces; which consist of water, nitrogen, hydrogen, carbon dioxide, hydrogen sulphide, methane, undigested food, indigestible matter, bacteria and the products of their decomposition of foods, bile residues, excretin and inorganic salts.
Liver	Bile.

7. A *reflex arc* is a complex made up of: (1) A surface capable of receiving an impression; (2) an afferent nerve; (3) a nerve cell capable of receiving and also of sending out impulses; (4) an efferent nerve, and (5) a surface capable of responding in some way to the impulse convcyed by the efferent nerve.

8. An adult normally passes about 50 ounces of urine daily; the normal color is some shade of yellow; the reaction is acid; for constituents, see above, Question 4.

9. The amount of urine may be physiologically increased by increasing the amount of liquids ingested; and decreased by anything which increases the secretion of perspiration.

10. *The functions of the skin* are: Protection, sense of touch, excretion, regulation of body temperature, absorption, and respiration.

ANATOMY.

2. The ovarian arteries arise from the abdominal aorta.

3. The *superficial external pudic artery* supplies the skin of the lower part of the abdomen and of the penis and scrotum in the male and the labia in the female.

The *deep external pudic artery* supplies the skin of the scrotum in the male and the labia in the female.

The *internal pudic artery* supplies the external organs of generation.

4. *Scarpa's triangle* is bounded *above* by Poupart's ligament; *externally* by the Sartorius; and *internally* by the

inner margin of the Adductor longus; its *apex* is formed by the junction of the Adductor longus and Sartorius. The *floor* is formed, from without inward, by the Iliacus, Psoas, Pectineus, Adductor brevis, and Adductor longus.

6. In making a McBurney incision the following structures are divided: Skin, superficial and deep layers of the subcutaneous fascia, External oblique, Internal oblique, and Transversalis muscles, Transversalis fascia, Subserous areolar tissue, and the Peritoneum.

7. The flexor group of muscles of the forearm is supplied by the median and ulnar nerves.

8. The spermatic arteries arise from the abdominal aorta.

10. The muscles attached to the greater trochanter of the femur are: Gluteus medius, Gluteus minimus, Pyriformis, Obturator internus, Obturator externus, Gemellus superior, Gemellus inferior, and Quadratus femoris.

PATHOLOGY.

1. Pathology is that branch of science which treats of disease; it includes the causes, nature, manifestations, structural changes, and results.

3. *Osteomyelitis* is inflammation of the bone and marrow.

It is *caused* by infection by microorganisms, which may gain entrance by a wound, through neighboring tissues, or through the blood.

4. Cerebrospinal fluid can be recognized by its ability to reduce Fehling's solution.

In tuberculous meningitis the fluid should be centrifugalized and examined microscopically (by stained films); cultures may also be made and a bacteriological examination will indicate the presence of the tubercle bacillus.

5. PULMONARY EDEMA. *Cause*: The cause of edema of the lung is frequently a loss of power in the left ventricle while the right continues to functionate, the extreme degree of stasis attained leading to rapid transudation.

Pathology: The lung is paler than usual, unless at the same time congested; it feels firm, parts of it even resembling hepatized lung, and on section a frothy fluid escapes in quantity; both lungs or a part of one may be involved. With inflammation of part of a lung the rest is apt to become edematous. Pulmonary edema occurs as the final stage of heart and kidney disease and occasionally in alcoholic and insane patients. (From Thayer's *Pathology*.)

6. (*a*) *Necrosis* is the complete and permanent arrest of nutrition in a part; or local death of tissues.

(*b*) In *dry gangrene* hemorrhage is prevented by embolism or thrombosis of the vessels.

In *moist gangrene* hemorrhages are fairly common; in some cases the vessels being eroded the thrombi are expelled; in others there is a hemorrhagic condition due to toxemia.

7. *Thrombosis* is the coagulation of the blood within the vessels during life.

9. Albumin is found in the urine: "(1) In fevers, as typhoid and pneumonia. (2) In valvular heart lesions, degeneration of the heart muscle, diseases of the coronary arteries, impeded pulmonary circulation, in pregnancy by pressure upon the renal veins, in intestinal catarrh and in Asiatic cholera. (3) In purpura, scurvy, leukemia, pernicious anemia, jaundice, diabetes, and syphilis. (4) After taking lead, mercury, iodine, phosphorus, arsenic, antimony, chloroform, cantharides, oxalic, carbolic, salicylic, or the mineral acids, turpentine, and nitrates. (5) In large amounts in acute nephritis, and chronic parenchymatous nephritis; in small amount in chronic interstitial nephritis and amyloid kidney." (Witthaus' *Essentials of Chemistry*.)

SYMPTOMATOLOGY.

1. *Tænia solium*: "The mature worm measures two or three yards in length; a ripe proglottis is about ten mm. long and six mm. broad, with the sexual opening placed laterally; the uterus is coarsely branched. The head, whose size is about the same as the head of a large ordinary pin, has four suckers, often pigmented, and a small rostellum, with a ring of twenty to thirty hooklets. The ova, which are nearly spherical, are readily recognized by their thick shell, with radiating striations. Inside the ovum, when mature, the six hooklets of the embryo may be visible.

"*Tænia mediocanellata* is larger than T. solium, and attains a length of five to nine yards. The ripe proglottides measure sixteen mm. in length by five mm. in breadth, but immature segments are broader than they are long. Very often they exhibit movements after they have been detached from the strobilus and have passed from the bowel. The sexual opening is lateral and the uterus is finely ramified, with frequent dichotomous divisions of the primary branches. The head is rather square in outline and is larger than that of T. solium. It has four suckers, but is devoid of hooklets. The ova closely resemble those of T. solium, but are slightly longer in proportion to their breadth." (From Hutchinson and Rainy's *Clinical Methods*.)

Symptoms are similar in both cases. Often there are no subjective symptoms; there may be dyspepsia, emaciation, ravenous appetite, fetid breath, headache, diarrhea, nausea, vomiting, colicky pains, vertigo, chorea, itching of the nose, and about the anus. The diagnosis is made from finding segments or eggs in the dejecta.

2. The *causes* of acute intestinal obstruction are: Strangulation, intussusception, volvulus, gallstones, tumors, strictures, fecal impaction, foreign bodies, and intestinal paralysis.

The *symptoms* are well shown in the following table (from Gould and Pyle's *Cyclopedia of Medicine and Surgery*):

STRANGULATION	INTUSSUSCEPTION	TWISTS (VOLVULUS)
Subjective Symptoms	*Subjective Symptoms*	*Subjective Symptoms*
1. Generally occurs after age of 20.	1. Most frequent in childhood	1. Most frequent after age of 30.
2. Pain localized, rapid collapse.	2. Constant tenesmus.	2. Pain diffuse
3. Pain intense, paroxysmal in character.	3. Pain develops suddenly and is continuous.	3. Pain paroxysmal, recurs less often than in strangulation
4. Constipation complete.	4. Frequent diarrhea passage of bloody mucus	4. Constipation complete
Objective Symptoms	*Objective Symptoms*	*Objective Symptoms*
1. Temperature often subnormal.	1. Temperature normal or subnormal	1. Temperature slightly elevated
2. Pulse very weak.	2. Same as in strangulation.	2. Same as in strangulation.
3. Stercoraceous vomiting comes on early	3. Same as in strangulation.	3. Same as in strangulation
4. Location in small intestine.	4. Localization in small intestine, bowel frequently protrudes at rectum	4. Location, small intestine, abdomen often protrudes, in certain areas, giving dullness on percussion

6.—

ACUTE LOBAR PNEUMONIA	BRONCHOPNEUMONIA
Generally a primary disease.	Generally secondary to bronchitis or an infectious disease.
Age has little influence.	Generally found in very young or very old.
Sudden onset.	Gradual onset.
Fever is high and regular	Fever is not so high, and is irregular
Ends by crisis between sixth and tenth day.	Ends by lysis, at no particular date.
Generally only one lung affected.	Generally both lungs affected.
The physical signs are distinct; and there is a large area of consolidation.	Physical signs indistinct; and the evidences of consolidation are indefinite.
Sputum is rusty.	Sputum is rather streaked with blood

SURGERY.

3. *Subphrenic abscess*: "A subphrenic abscess is a collection of pus beneath the diaphragm. The pus, as a rule, occupies a part of the lesser peritoneal cavity; in rare instances it is extraperitoneal (when it is of renal origin); in some cases it is contained in the area between the diaphragm, cardiac end of the stomach, and liver or spleen. It is an unusual thing for such an abscess to break into the general cavity of the peritoneum, but it may break into the pleural sac.

"*Causes*: Perforation of a gastric ulcer, perforation of the gall-bladder or gall-ducts, ulceration of the duodenum, diseases of the liver, spleen, pancreas, intestine, appendix, or kidney, hydatid disease, internal injury, metastasis, external injury, caries of rib, or disease of the pleura may be responsible for a subphrenic abscess.

"*Symptoms*: These are the constitutional symptoms of suppuration and a swelling in the subdiaphragmatic region, these symptoms ensuing upon one of the causative conditions before mentioned. In many cases the abscess cavity contains gas as well as fluid. Empyema and subphrenic abscess resemble each other. In empyema the upper limit of the fluid is concave; in subphrenic abscess it is convex. In empyema the flow of pus through an aspirating needle will be most marked during inspiration; in abscess during expiration—the same is true of the rush of gas. In empyema the needle does not oscillate; in abscess it does. The fact that an abscess contains gas is shown by the existence of a tympanic percussion-note over a part of the cavity and an alteration in the area of tympany with an alteration in the position of the patient. An abscess of the liver does not contain gas and alters decidedly the outlines of the organ." (From Da Costa's *Modern Surgery*.)

4. *The early symptoms of hip-joint disease* are: Night cries (in a child); lameness in the morning; a slight limp; tendency to become tired on slight exertion; wasting; spasm; pain; swelling; and deformity (either real or apparent).

5. *Symptoms of hypertrophy of the prostate gland*:

Slowness in starting urination; difficult micturition; frequency of micturition, particularly at night; the presence of residual urine; dull, aching pain in the perineum and above the pubes; enlargement of the lateral lobes of the prostate; there may be cystitis and retention of urine.

The *cause*: It is a senile change, and may be due to increase of the glandular substance or of the interstitial fibrous or muscular tissue.

7. *In fracture of the internal condyle of the humerus*: The fragment forms a projection at the back of the elbow; if the swelling is not too great, crepitus may be elicited by flexing and extending the forearm; preternatural mobility exists; the space between the condyles is increased; the forearm bends towards the ulnar side; and the "carrying function" is lost.

8. *Malignant tumors* are not encapsulated, tend to infiltrate the surrounding tissues, give rise to metastatic growths, have a tendency to recur after removal, give a cachexia, have a fatal tendency.

Benign tumors are encapsulated, do not tend to infiltrate the surrounding tissues, do not give rise to metastatic growths, do not tend to recur after removal, do not produce cachexia, and do not have a fatal tendency (except from their location).

9. The *cause of dry gangrene* is: Deficiency of arterial blood.

10. In *synovitis of the knee-joint* the effusion is behind the patella, the patella is lifted up by the effusion, and floats.

In *housemaid's knee* the swelling is in front of the patella, the patella does not float, and the joint is not affected.

OBSTETRICS.

1. (*a*) *Pregnancy* is the state of being with child, or the state of the woman from conception till the product of conception is expelled.

(*b*) *Fecundation* is the union of the spermatozoon with the ovum.

2. (*a*) The *funis*, or umbilical cord, is a cord-like structure extending from the umbilicus of the fetus to the placenta.

(*b*) At full term the *placenta* is from six to nine inches in diameter, about three-quarters of an inch in thickness at the central point, and weighs about one pound; the *funis* is about eighteen inches long, and about a quarter of an inch in thickness. All of these measurements are liable to considerable variations.

3. *Extrauterine pregnancy* is a pregnancy in which the ovum is developed outside of the uterine cavity.

"When extrauterine pregnancy exists there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility; nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy; pains are often very severe, with marked tenderness within the pelvis; such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating; this tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The *os uteri* is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*" (*American Text-book of Obstetrics.*)

4. (*a*) *Hydatid pregnancy* is a pregnancy in which the chorionic villi undergo a proliferating degeneration with the production of a mass of cysts attached to the placenta. These cysts look like bunches of grapes.

(*b*) The pregnancy begins as in normal cases, but in about the third month the uterus becomes suddenly and rapidly enlarged; irregular uterine hemorrhages occur; and there is a discharge of fluid containing the vesicular growths; labor occurs, and the mass of cysts is expelled.

6. (*a*) *Labor* is the process by which a pregnant woman expels the product of conception at or near term.

(*b*) Three stages.

(*c*) Crede's is the best method of delivering the placenta.

8. "By the *mechanism of labor* we understand the operation of the mechanical *forces* and the execution of the mechanical *movements* necessary to secure the passage of the child through and its exit from the parturient canal." (From King's *Obstetrics.*)

9. The following (from Gould and Pyle's *Cyclopedia of Medicine and Surgery*) is a useful classification of the hemorrhages in question:

A. Hemorrhages of Pregnancy: Caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) apoplexy of the decidua or placenta.

B. Hemorrhages of Labor: Caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) relaxation of the uterus; (4) laceration of the cervix; (5) rupture or inversion of the uterus.

C. Hemorrhages of the Puerperium: Caused by (1) retained secundines; (2) displaced uterus; (3) displaced thrombi; (4) fibroid tumors; (5) hypertrophied decidua; (6) carcinoma.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H Sanders, Montgomery	Montgomery	Jan. 7
Arizona*	Ancil Martin, Phoenix	Phoenix	Jan. 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	Jan. 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April 7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	Jan. 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March 10
Delaware	J. H Wilson, Dover	Dover	June 16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	Jan. 9
Florida*	J. D. Fernandez, Jacksonville	Ocala	April 13
Georgia	E. R. Anthony, Griffin	Atlanta	May —
Idaho	J. L. Conant, Jr., Genessee	Boise	April 7
Illinois	J. A. Egan, Springfield	Chicago	Jan. —
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May 26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March —
Kansas	T. E. Raines, Concordia	Topeka	Feb. 11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April 28
Louisiana	F. A LaRue, 211 Camp Street, New Orleans	New Orleans	May 21
Maine	Wm. J. Maybury, Saco	Portland	March 17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June 9
Minnesota	W S. Fullerton, St. Paul	St. Paul	Jan. 7
Mississippi	J F Hunter, Jackson	Jackson	May 12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City / St. Louis	April
Montana*	Wm C. Riddell, Helena	Helena	April 7
Nebraska	E. J. C. Sward, Oakland	Lincoln	Feb. 5
Nevada	S. L. Lee, Carson City	Carson City	Feb. 3
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	Jan. 14
New Jersey	J. W. Bennett, Long Branch	Trenton	June 16
New Mexico	B. D. Black, Las Vegas	Santa Fe	June 1
New York	C.F Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Feb. 4
N. Carolina*	G T. Sikes, Grissom	Winston, Salem	May —
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	Jan. 7
Ohio	Geo. H. Matson, Columbus	Columbus	June 9
Oklahoma*	J. W. Baker, Enid	Guthrie	
Oregon	B E. Miller, Portland	Portland	Jan. 8
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June —
Rhode Island	G. T. Swartz, Providence	Providence	April 2
S. Carolina	W. M. Lester, Columbia	Columbia	June 9
S. Dakota	H E McNutt, Aberdeen	Mitchell	Jan. 8
Tennessee*	T J. Happel, Trenton	Memphis / Nashville / Knoxville	May —
Texas	G B Foscue, Waco	Waco	June 16
Utah*	R. W Fisher, Salt Lake City	Salt Lake City	Jan. 6
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 14
Virginia	R S Martin, Stuart	Richmond	June 24
Washington*	C W. Sharples, Seattle	Spokane	Jan. 7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	April 14
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	Jan. 14
Wyoming	S B Miller, Laramie	Laramie	Feb. 12

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

North Carolina.—The North Carolina State Board of Medical Examiners recently adopted the following rules governing reciprocity in accordance with a State amendment to the Practice Act: (1) The applicant must have a diploma from a medical college requiring a three years' course of study for such degree. (2) He must have a license from a State Board of Examiners requiring the same per cent. as this State, which is 80. (3) He must present a sworn affidavit from two practising physicians as to his professional standing in his community. (4) The burden of proof shall rest on the applicant. (5) He shall attend the meeting of the Board at the time of application and make application in person. (6) He shall pay a fee of $10 for his license.

New York and Ohio.—An agreement in reciprocity in medical licensure between the States of Ohio and New York has been signed by the authorities of these States. Certificates gained by examination only are to be considered. Each State reserves the right to examine into the qualifications of the applicant, and may also demand the original credentials and papers before granting a license.

New Instruments.

A NEW BONE-DRILL AND BONE-WRENCH.

By CARL BECK, M.D.,
NEW YORK.

WHILE modern techniques show a decided tendency towards eliminating force from its strategy everywhere, great allowances are still made in regard to bone-surgery, many bone-instruments carrying the expression of brutal tendencies on their exterior. Their manipulation generally requires more or less force, as for instance the well-known and otherwise useful drills of von Langenbeck, Hamilton, Brainard, Collin, etc., especially if they are employed in large bones and if there is much calcareous matter in the cortical layer. A drill, therefore, which would obey the intentions of the surgeon by light-handed motion would surely be preferable. I find

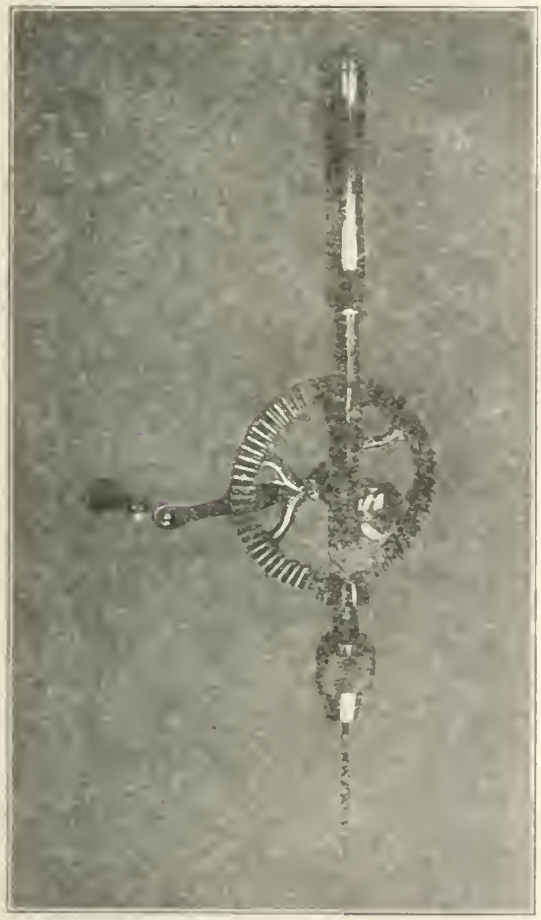

FIG. 1.

that a modified carpenter's gear-drill (Fig. 1) answers this purpose admirably, as it is not worked by pressure but by simply rotating the handle. Thus, rapid motion is made possible. Instead of the common carpenter handles, I utilized the Collin principle, also providing the crank handle with a ball and socket joint so that the instrument can be folded. In place of the drills which are commonly used by plumbers, I selected the spiral shape of the carpenter's drill, which permits of much easier penetration of the bone substance. The tips of the drills are sharp, as we see them in drill trephines. They are fastened to the holder by a large spiral ring, not by the traditional lateral screw. Thus a firm attachment is secured, the drill never becoming loose or displaced, as so frequently happens if the usual combination is used. Three drills of various sizes answer the purpose. As I use bronze-aluminum wire exclusively, I find the smallest size large enough to bore the hole required for introducing the thin wire. A circular screw is to be attached as a guard for the regulation of the penetrating distance in special cases, as for instance in trephining. For the latter purpose, however, a larger drill trephine is used, which is constructed after the same principle. The danger of breaking the drill is excluded, since force is not applied.

FIG. 2.

Fig. 2 represents a bone-wrench, the jaws of which are elongated in a beak-like shape in order to grasp the bone in its entirety as well as in sections. The grasp is absolutely firm, and the assistant does not need to use any amount of force after the instrument is attached, so that he is able to hold it as long as required without unnecessarily augmenting the insult to the bone, and last but not least, without exhausting himself. In severing bones by saw or chisel, or by performing partial resections, and especially in operations for malunion of fractured bones, this instrument has done me splendid service.

Both instruments are of nickel-plated metal and can be sterilized without interfering with their usefulness. They were made by the Kny-Scheerer Company.

I take this opportunity to mention that in severing deformed bones by the chisel, as is sometimes required in malunion at the lower end of the radius, the larger as well as the smaller handle of my abdominal spoon (see MEDICAL RECORD, February 4, 1905) may be conveniently used as a protection of the soft tissues against the chisel when introduced underneath the exposed bone.

Ankylostomoanemia in Children.—Olimpio Cozzolino classes *Ankylostoma duodenale* as one of the intestinal parasites that are dangerous to the life of the host. Parasites may do harm by subtraction of albumin from the organism in sucking blood from the intestines and cause hemorrhage from the wounds. They may migrate into the internal organs. They may act mechanically as extraneous bodies. They may poison the patient by absorption of their life products, or they may aggravate any intercurrent affection by the debility which they produce. The author describes two fatal cases observed by him. They came from a family, all the members of which showed the presence of ankylostoma in the stools. Their presence caused a high grade of anemia. The parasite is cylindrical, grayish-red, measuring from 8-12 millimeters in length. It is provided with four hooks, by which it fastens to the intestinal wall for the purpose of sucking the blood. The number of eggs is enormous, four million having been found in one stool. As larvæ they maintain their vitality outside the body for about fifty days. They are carried to the new host by means of unclean hands and infected water. According to some the anemia is produced by constant abstraction of blood from the system, while others think that they produce a poison which is a source of intoxication to the body. The white blood corpuscles are many of them destroyed, and there is eosinophilia and increase of leucocytes. The diagnosis is based on the anemia and the presence of the parasites in the stools, and of eosinophilia. The treatment consists of an energetic course of anthelmintics. Even after the parasites are removed the anemia may cause death. *La Pediatria.*

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Principles and Practice of Modern Otology. By John F. Barnhill, M.D., and Ernest deWolfe Wales, B.S., M.D. Large 8vo, 575 pages, illustrated, muslin, $5.50 net. W. B. Saunders Co., Philadelphia.

Syphilis, in Its Medical, Medico-Legal, and Sociological Aspects. By A. Ravogli, M.D. 8vo, 518 pages, muslin, illustrated. The Grafton Press, New York.

A Manual for Boards of Health and Health Officers. By Lewis Balch, M.D., Ph.D. 12mo, 242 pages, muslin. Banks & Company, Albany, N. Y.

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D. 12mo, 558 pages, illustrated, flexible leather, $2.50 net. W. B. Saunders Company, Philadelphia.

The Life of Nathan Smith Davis, A.M., M.D., LL.D. By I. N. Danforth, A.M., M.D. 4to, 193 pages, muslin, illustrated. Cleveland Press, Chicago.

Commoner Diseases of the Eye. By Casey A. Wood, M.D., C.M., D.C.L., and Thomas A. Woodruff, M.D., C.M., L.R.C.P. (Lond.). 8vo, 598 pages, illustrated, half morocco, $2.50 net. W. T. Keener & Co., Chicago.

A Text-book of Pathology. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D., LL.D. 8vo, 1,075 pages illustrated muslin, $5.50 net. William Wood & Company, New York.

A Text-book of Physiology. By Isaac Ott, A.M., M.D. Large 8vo, 815 pages, illustrated, muslin $3.50 net. F. A. Davis Company, Philadelphia.

Cutaneous Therapeutics. By W. A. Hardaway and Joseph Grindon, Ph.B., M.D. 8vo, 606 pages, muslin. Lea Brothers & Co., Philadelphia.

Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund von Neusser, M.D. 8vo, 203 pages, muslin. E. B. Treat & Company, New York.

Diseases of the Skin. By Henry W. Stelwagon, M.D., Ph.D. Large 8vo, 1,150 pages, illustrated, $6 net. W. B. Saunders Company, Philadelphia.

Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Large 8vo, 1,317 pages, illustrated, cloth $5.50 net. W. B. Saunders Company, Philadelphia.

Die Salzsäuretherapie auf Theoretischer und Praktischer Grundlage. Von Prof. Dr. Hans Leo. 8vo, 138 pages, paper, 3 marks 20 pfg. Verlag von August Hirschwald, Berlin.

Labyrintheiterung und Gehör. Von Dr. Heinrich Herzog. 8vo, 131 pages, illustrated, paper, 5 marks. J. F. Lehmanns Verlag, München.

Nierendiagnostik und Nierenchirurgie. Von Dr. G. Kapsammer. (I. Teil.) Large 8vo, 432 pages, illustrated, paper. Wilhelm BBraBumüller, Wien und Leipsig.

Nierendiagnostik und Nierenchirurgie. Von Dr. G. Kapsammer. (II. Teil.) Large 8vo, illustrated, paper. Wilhelm Braumüller, Wien und Leipsig.

Transactions of the Twenty-ninth Annual Meeting of the American Laryngological Association. 8vo, 268 pages, illustrated.

Die Röntgentechnik, ein Hilfsbuch für Ärzte. Von Dr. med. F. Davidsohn. Large 8vo, 80 pages, illustrated, paper. Verlag von S. Karger, Berlin.

Technique Oto-Rhino-Laryngologique. Par E. Escat. 8vo, 596 pages, paper, illustrated. A. Maloine, editor, Paris.

Auscultation and Percussion. By Samuel Gee, M.D. 16mo, 325 pages, half morocco, $1.50. University Press, Oxford.

Diseases of the Larynx. By Harold Barwell, M.B. Lond., F.R.C.S. Eng. 12mo, 266 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Surgical Emergencies. By Percy Sargent, M.A., M.B. (Cantab.), F.R.C.S. 12mo, 256 pages, half morocco, $1.50. University Press, Oxford.

Diseases of the Nose. By Ernest B. Waggett, M.A., B.C. (Cantab.). 12mo, 282 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Diseases of the Ear. By Hunter Tod, M.A., M.B., B.C. (Cantab.), F.R.C.S. (Eng.). 12mo, 317 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Department of Neurology (Cornell). Large 8vo, 381 pages, paper, illustrated.

Des Maladies de l'Appareil Respiratoire. Par C. Garrière. Large 8vo, 683 pages, paper. Vigot Frères, Paris.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending December 21 and 28, 1907:

	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	354	174	308	191
Diphtheria	338	37	347	30
Measles	517	30	346	26
Scarlet Fever	417	22	426	22
Smallpox	3	..	2	..
Varicella	198	..	123	..
Typhoid Fever	35	13	42	18
Whooping Cough	19	2	3	2
Cerebrospinal Meningitis	7	7	6	6
Malarial Fever	..	..	..	..
Totals	1888	285	1603	295

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending December 27, 1907:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, Los Angeles	Dec.	1–14	24	..
San Francisco	Dec.	1–14	16	1
Illinois, Chicago	Dec.	8–14	2	..
Springfield	Dec.	6–12	14	..
Indiana, Seven Counties	Oct.	1–31	75	..
Elkhart	Dec.	8–21	4	..
Lafayette	Dec.	10–16	1	..
Georgia, Augusta	Nov.	27–Dec. 3	1	..
Kansas, Kansas City	Dec.	8–14	1	..
Topeka	Dec.	11–17	1	..
Kentucky, Lexington	Nov.	24–30	1	..
Massachusetts, Everett	Dec.	8–14	2	..
Fall River	Dec.	8–14	1	..
Waltham	Dec.	15–21	1	..
Michigan, Saginaw	Dec.	1–14	9	..
Minnesota, Winona	Dec.	8–14	1	..
Missouri, St. Louis	Dec.	8–14	1	..
New York, New York	Dec.	8–14	4	2
Ohio, Dayton	Dec.	8–14	5	..
Pennsylvania, Harrisburg	Dec.	17	1	Imported
Note.—Dec. 6, two cases were erroneously reported at Altoona.				
South Dakota, Vermillion	Oct.	1–Dec. 13	30	..
Tennessee, Nashville	Dec.	8–14	12	..
Texas, San Antonio	Dec.	8–14	1	..
Washington, Port Townsend	Dec.	7	1	From S. S. *Alaskan*
Spokane	Dec.	8–14	9	..
Tacoma	Dec.	8–14	2	..
Wisconsin, La Crosse	Dec.	8–14	2	..

SMALLPOX—FOREIGN.

Africa, Lorenzo Marquez	Oct.	1–31	..	2
Belgium, Ghent	Nov.	17–23	..	2
Brazil, Rio de Janeiro	Nov.	4–17	25	9
Canada, New Brunswick—				
Milltown	Dec.	14	1	..
Chile, Iquique	To Nov.	20	Still present	
China, Amoy and Kulangsu	To Nov.	9		Present
Shanghai	Nov.	4–17	..	20 Native population
Ecuado, Guayaquil	Nov.	24–30	..	4
France, Marscille	Nov.	1–30	..	27
Paris	Nov.	24–30	2	..
Great Britain, Bristol	Dec.	1–7	1	..
Liverpool	Dec.	1–7	1	..
India, Bombay	Nov.	13–26	..	4
Calcutta	Oct.	22–Nov. 2	..	4
Madras	Nov.	10–22	..	2
Italy, General	Sept.	30–Dec. 5	30	..
Genoa	Oct.	1–31	1	..
Japan, Kobe	Nov.	10–16	7	..
Mexico, Aguas Calientes	Nov.	24–30	—	5
Monterey	Dec.	2–8	..	1
Peru, Lima	Nov.	23	Still present	
Portugal, Lisbon	Nov.	24–30	1	..
Russia, Moscow	Nov.	17–23	4	1
Riga	Nov.	24–30	4	..
St. Petersburg	Nov.	9–30	3	..
Spain, Valencia	Nov.	25–Dec. 1	32	2
Turkey in Asia, Bagdad	Oct.	26–Nov. 2	79	19
Venezuela, Caracas	Nov.	22–Dec. 8	800 estimated;	83 in hospital

CHOLERA.

Hawaii, Honolulu	Dec.	19–21	1	1
India, Bombay	Nov	13–28	..	8
Calcutta	Nov.	2–6	..	267
Cochin	Oct.	5–25	..	30
Madras	Nov.	9–22	..	11
Negapatam	Oct.	1–30	..	28
Japan, General	Aug.	4–Nov. 27	3,049	1,873
Kobe	Nov.	10–16	4	1
From outbreak to Nov. 16			472	332
Shinagawa	Nov.	23	..	Present on two torpedo-boat destroyers
Nagasaki	Nov.	11–17	1	1
Sasebo	Nov.	20	Still present	
Yokahama	Nov.	19–25	7	4
Philippine Islands, Bocaue	Nov.	2	..	Present
Calumpit	Nov	2	..	..
Manila	Oct.	27–Nov. 9	17	18
Russia, General	July	3–Nov. 6	11,472	5,493
Turkey in Asia, Sinope	Nov.	27–Nov. 5	68	51 From S. S. *Gregory Merck*

YELLOW FEVER.

Brazil, Rio de Janeiro	Nov.	4–17	2	.

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Original Articles.

PLAGUE.

BY ALVAH H. DOTY, M.D.,

HEALTH OFFICER PORT OF NEW YORK.

THE unfavorable reports which are frequently published relative to the presence of plague in India and other sections of the East have caused some uneasiness in this country, particularly as outbreaks of this disease have occurred in San Francisco and vicinity during the past four or five years. While there is probably no doubt as to the accuracy of these reports or that the plague has caused great loss of life in the countries above referred to, it must not be assumed that the same result would follow its appearance in the United States, or in any other civilized country where modern sanitary regulations are enforced and where the people are intelligent, and not only observe, but aid in the enforcement of sanitary regulations. As the result of ignorance and a peculiar religious creed, the native population of India deliberately and seriously obstruct health officials in the performance of their duties; besides the individual resisting power of these people against disease is at the lowest ebb, owing to the existing poverty, overcrowding, etc. Therefore, it is not strange that plague in India and elsewhere in the East should extend with great rapidity and involve a very large mortality.

History presents reliable evidence to show that plague was recognized soon after the beginning of the Christian era, and probably before this period, and that it has frequently appeared in different sections of the East and occasionally in Western Europe. It is undoubtedly the disease which swept over Europe during the fourteenth century under the name of the "black death" and caused great loss of life and led to the establishment of the first official quarantine, which occurred in Venice in 1348, and was followed by similar regulations at other Mediterranean ports for the purpose of securing protection against this disease on its way from the East. Until 1896 plague had not appeared in Western Europe for many years. The outbreak at this time followed an active revival of the disease in India and China, particularly in Hong Kong, in 1894. Prior to this period we possessed practically no scientific knowledge of this disease either in regard to its cause or means of transmission. During the Hong Kong epidemic, Kitasato and Yersin, working independently of each other, discovered the specific organism of plague. Subsequent investigation has presented numerous theories as to the means by which this disease is transmitted, the most prominent one being that it is the rat through the medium of fleas. Some believe that the disease is transmitted to man only in this way and not from one person to another, while other investigators declare that the disease may in various ways be transmitted from one person to another and that the rat is not always responsible for its appearance. Recent experiments have also shown that monkeys, squirrels, cats, and other animals, and also bugs, cockroaches, flies, mosquitos, etc., may directly or indirectly act as a medium of transmission. It is also claimed that infection takes place through the respiratory and digestive tracts. This mass of evidence, some of which is contradictory, will require considerable time for careful analysis. In the meantime I believe it to be unsafe to give undue prominence to any theory which may minimize the danger of the transmission of this disease from one person to another. Plague frequently appears in a mild or unrecognized form; as an instance of the former, I may cite the following:

On November 18, 1899, the steamship *James W. Taylor*, a freight vessel, arrived at the New York quarantine station from Rio Janeiro, where an epidemic of plague existed. The captain reported that a member of the crew had died in transit and was buried at sea, but that otherwise all were well on board. A visual examination alone would probably have confirmed this statement, as all reported well and appeared on deck for inspection, but when the temperatures of the crew were taken, their clothing removed, and a glandular examination made, a mild case of bubonic plague was detected. The patient not only recovered, but at no time during his detention at Swinburne Island was it necessary, so far as his physical condition was concerned, to confine him in bed, and he repeatedly stated that he did not feel very sick. If this case had not been detected, and if as a result secondary cases had occurred after the patient had reached New York, the outbreak would undoubtedly have been attributed to some other means of infection. It may be added that the cargo of this vessel was removed at quarantine and all dead rats which were found after sulphur dioxide had been generated in the hold of the vessel were carefully placed in metallic receptacles and taken to the laboratory for examination, but no evidence of plague was found among them.

While every sane and practical means should be taken to protect against the presence of presumably infected rats, either on shipboard or on land, we are not justified in carrying out regulations which are unreasonable and which unnecessarily cripple commerce or the public, besides we must not forget that plague may be transmitted in other ways than by the rat.

The history of outbreaks of plague and other infectious disease furnishes conclusive evidence that the results which follow their appearance depend principally on the means which are taken to prevent their extension. Even simple measures of protection are sometimes followed by the most satisfactory results. A notable and well authenticated instance of this occurred in 1656, during the out-

break of plague in Italy, particularly in Naples and Rome, both populous cities. In the latter place the measures which were carried out for the protection of the city were under the personal supervision of Cardinal Gastaldi, who was exceedingly energetic in his efforts to enforce cleanliness, prevent overcrowding, etc. The result of his work was very significant. While plague caused 300,000 deaths in Naples, it caused but 14,000 deaths in Rome. There can be no reasonable doubt that the measures taken by Cardinal Gastaldi were largely responsible for this result, as the mortality at Naples corresponded to the mortality which occurred during outbreaks of this disease at this period in other sections of Europe.

The outbreak of plague in Europe in 1896 involved within a comparatively short time ports in Scotland, Portugal, Australia, South America, and other places. These outbreaks were met by regulations dictated by modern sanitation and not in one instance did the disease get beyond the control of the health officials in charge, and the outbreaks disappeared without serious loss of life, whereas the appearance of plague in Europe during the fourteenth century is estimated to have destroyed about one-quarter of the population and extended over a period of twenty years or more.

The present outbreak of plague in San Francisco appeared in August of this year. Thus far there have been only 112 cases. The treatment of this outbreak has been under the supervision of the United States Public Health and Marine Hospital Service, and the results are very creditable to those in charge and show what modern sanitary methods can accomplish even in a community which has not yet recovered from a recent serious disorganization.

There is no doubt that outbreaks of typhus fever, commonly known as "ship-fever," etc., a disease more actively infectious than plague, have in earlier times been mistaken for plague and have under certain conditions caused loss of life almost equal to the latter disease.

The horrors of the Irish famine, which occurred between 1813 and 1818 are probably forgotten. The unusually cold weather during these years had practically destroyed the potato and other crops; thousands of families were rendered homeless and obliged to seek food wherever they could, and many cases of destitution and starvation occurred. Typhus fever appeared during the latter part of 1816, and rapidly increased. It is estimated that 800,000 cases occurred in Ireland during this epidemic representing about one-eighth of its population. Seventy thousand, or about one-third of the population of Dublin, contracted the disease. It is a significant fact that this disease did not disappear until after the abundant harvest of 1818. I am quite sure that plague during the fourteenth century did not cause much greater local devastation than that which occurred in the outbreak already referred to. Typhus fever has a number of times visited New York City. The last outbreak occurred in 1892-3. It appeared abruptly among the foreign population in the closely packed tenement houses in the lower section of the city on the east side, and subsequently in the Bowery lodging houses, which were filled with men of the lowest class, who were without homes and who were constantly moving from one place to another, constituting a most dangerous medium of infection. The Department of Health began at once an exhaustive inspection to trace the origin of each case brought under observation and also to detect the whereabouts of new cases. Disinfection and other sanitary measures were rigidly enforced, and as a result the disease completely disappeared within a few months. This outbreak was limited to about 700 cases and all but a very few of them were among the lower class. The latter illustrates the fact familiar to all practical sanitarians that epidemics of plague, typhus fever, etc., are almost always confined to sections where filth, overcrowding, and poverty exist. This was shown in the London outbreak of plague in 1664, when the disease was so noticeably confined to the lower classes that it was called the "poor man's plague," and in the outbreak of plague which occurred in Canton in 1894, which caused the death of 30,000 natives, while none of the 300 American and English residents were affected. This proves that when modern sanitary regulations are carefully enforced, particularly in communities where people aid rather than obstruct the efforts of public health officers in the performance of their duties, outbreaks of infectious disease can surely be brought under control and that the ravages which they have caused in the past need never occur again. Practical experience has presented indisputable evidence of this, and the lesson to be learned is that proper sanitary regulations should be enforced in every city and town, and that the latter should be equipped and prepared to meet emergencies, and not to depend on organizations formed for this purpose after the disease has appeared.

In referring to this subject, it is not my intention to belittle in any way the danger that outbreaks of infectious disease may involve, but to emphasize the fact that the results which follow their appearance depend principally on the means which are taken to prevent their extension, and that so far as plague is concerned, the very unfavorable reports which come to us from India and other sections of the East must not be accepted as an indication of what would follow an outbreak of this disease in the United States, or in any other part of the world where modern sanitary regulations are enforced.

THE RENAL COMPLICATIONS AND SEQUELÆ OF INFLUENZA.

By HEINRICH STERN, M.D.,

NEW YORK.

Renal disease as the sequence of the influenzal poison has not as yet found that consideration which its importance demands. Two reasons may be assigned for this evident disregard, first, the neglect to recognize the minor renal affections which, for convenience sake, we may group together as "congestion" and, second, the little attention habitually bestowed upon the patient as soon as the more prominent phenomena of the influenza have disappeared.

Acute nephritis in its pronounced forms, it is true, is a comparatively infrequent concomitant of the influenzal affection. Nephritic conditions of as pronounced a character as we are wont to find them in scarlatina, diphtheria, pneumonia, and other acute infectious diseases are not every-day occurrences in influenza. The morbid changes in the kidneys during or shortly after an attack of the grippe are, if they occur at all, mostly of a lesser degree. This fact must be ascribed to the slight virulence of the influenza poison for the kidneys. While, however, the influenza poison possesses no great toxicity for

the kidneys its influence upon them seems to endure; at least, the more pronounced renal lesions are usually not observed until long after the subsidence of the acute syndrome of the infection.

I distinguish three forms of renal complications of influenza: (1) Cases with acute symptoms of renal involvement; (2) Cases in which occurs an aggravation of pre-existing renal disease; (3) Post-influenzal nephritis.

The *acute renal involvement*, as stated before, is mostly of a decidedly milder character than in some other infectious diseases. At the height ot an attack of influenza the renal symptoms are, as a rule, less pronounced than when the attack has somewhat abated. Degree and character of the acute renal symptoms point to a state of active congestion in the great majority of the cases. This active hyperemia of the kidneys, as a matter of course, is nothing else but a toxic irritation, the very first stage of an inflammatory process, which may subside as soon as the influenza poison has become definitely eliminated from the organism. However, while the influenza poison is not apt to inflict great injury upon the kidneys by its direct toxicity, we have abundant evidence that influenza bacilli may be retained in the body in a latent state for months and even years, that they may become periodically active, and that they may thus keep up—spasmodically so to speak—the inflammation of an organ which may ultimately lead to its destruction. Fortunately, the influenza germs and toxins are eradicated from the organism, or are rendered innocuous within a comparatively short period and the normal renal circulation is soon reestablished in the vast proportion of all the instances.

Active renal hyperemia of influenzal origin manifests itself in a similar manner as if it occurred on the basis of any other toxic invasion. There is the dull aching soreness in the infrascapular and lumbar regions which becomes more acute and circumscribed upon pressure, there is the rather frequent and occasionally tenesmic urination, the slight hematuria, the insignificant serum-albuminuria and globulinuria, the smaller or larger number of renal epithelia and last but not least an occasional narrow hyaline cast.

The moment the influenza poison is eliminated or neutralized, all these phenomena disappear as a rule, and the renal incident of influenza closes there and then.

In other cases, probably not more than from 2 to 4 per cent. of all instances of influenza, the active renal congestion assumes the character of the catarrhal nephritis of Virchow or turns into a genuine glomerulonephritis. These severer forms of active renal hyperemia do not differ much clinically from simple congestion excepting that the various urinary abnormalities may become somewhat accentuated. All the urinary solids, including urea, are continued to be excreted in normal amounts, although the output of urinary water may become increased or decreased as the case may be. Again, clinical differentiation between the various degrees of active renal hyperemia cannot be attempted in many instances.

Acute diffuse nephritis, the genuine acute Bright's disease, according to all available statistics, is a rather infrequent complication of the pyretic stage of influenza. It appears somewhat more frequently at the termination of the influenzal process when it may be the result of a protracted renal congestion. Its presence is characterized by anasarca of the limbs and trunk, effusion into the serous cavities, a recrudescence of the febrile condition, violent headache, hard pulse and high arterial tension, and pain and pressure pain similar to that of active renal hyperemia in the lumbar region. Uremic manifestations may be also not missing. The urine is very much diminished in quantity, its density at the outset is increased; in color it is very dark, resembling Vogel's urinary tints Nos. 7 and 8. Its transparency is decidedly impaired and it deposits on standing a sediment not unlike that from beef-tea. The total urinary solids excreted in the twenty-four hours are invariably diminished, urea being that urinary constituent the elimination of which is most markedly reduced. Serum-albuminuria is profuse, and hematuria in various and varying degrees is always present. Large numbers of renal epithelia and casts (the latter carrying epithelia and blood constituents) are found without fail in the urinary sediment.

In other instances, the renal affection may assume the character of an acute diffuse nephritis in a more direct manner, namely, by the rapid invasion of the kidneys by virulent influenza microbes. In such cases, simple renal congestion lasts but a very brief period.

The second variety of renal complication of influenza, the *aggravation of preexisting renal disease*, is of decided importance as far as prognosis is concerned. An intercurrent renal congestion—such which is liable to occur during an attack of influenza or when it declines—may often arouse a latent nephritic condition into an active, progressive and destructive process. Again, when there exists an active nephritis its complication by influenza is apt to bring about a speedy fatal issue.

I remember some cases in children in which the apparently healed nephritis of scarlatinal origin had been stimulated into renewed activity by an intercurrent influenza. I know of a case of nephritis which had followed a lobar pneumonia and which had been entirely quiescent for three years until an attack of influenza caused its recrudescence. A second attack of influenza a year later again caused an aggravation of the nephritic symptoms. Many cases of transitory or intermittent albuminuria really belong to this category. In such cases there is often a history of an antecedant acute renal disease which to all appearances had vanished, but a close observation will show that recurrence or augmentation of the albuminuria oftentimes takes place in the wake of intercurrent affections.

Patients with inherent or acquired predisposition to renal disease often perplex the most experienced practitioner. To-day, the patient may not exhibit any nephritic symptoms whatsoever, and next week after a slight febrile condition he may present all the earmarks of acute uremia. The uremic symptoms may subside and the former latency of the nephritis may be reestablished, but, must the physician ask himself, what caused this aggravation; was the intercurrent pyrectic affection at its foundation or was this pyrexia nothing but an expression of the renewed activity of the nephritic process?

As a matter of fact, recrudescence of latent nephritis is called forth by intervening diseases in a goodly proportion of the cases. The conscientious and thorough examiner for life insurance is well aware of this when he asks the applicant, whose nephritic condition seems rather young, to present himself for another examination after a certain period. For the past ten years I have had a very large experience with applicants for life insurance who were rejected or whose acceptance was post-

poned on account of renal disease. Most of these proposers for life insurance were unaware of their kidney affection when they underwent the first examination by the company's physician, and their family physician, in many instances assured me that up to a few weeks ago there was absolutely no evidence of a renal lesion. That the applicant for insurance had been meantime in the throes of the grippe or another acute disease which may have given rise to the impairment of the kidneys or to an aggravation of a latent symptomless nephritic state, had not been taken into consideration. And, of course, to the drugs which were administered for the acute disease and which act often as renal irritants no influence whatsoever was ascribed as regards the production or the aggravation of the renal phenomena.

Patients upon whose system chronic nephritis of whatever kind has made deep inroads frequently succumb to intercurrent influenza. This, however, is an occurrence which, strictly speaking, does not belong to the present consideration, as here the influenza is a complication of a progressive and destructive nephritic process, and not, as in aforementioned instances, in which the renewed activity of a quiescent renal affection is a concomitant or a sequela of influenzal invasion.

The *third class* of renal complications of influenza may be regarded as post-influenzal in its production. In a certain sense, the nephritides of the first class also belong to this category in as far as they hardly ever originate during the increment but most always at the decline of the acute grippal symptoms. Still, there is that difference that post-influenzal nephritis appears as a rule after all the symptoms of influenza have subsided, often even after the patient has materially recuperated from the attack, and that its course tends to chronicity. Post-grippal nephritis should therefore be looked upon as a phenomenon of re-infection in many instances.

Post-influenzal nephritis is less of a complication than a sequela. It may disappear after two or three months but it is usually of a persistent and chronic nature. If it becomes permanent it assumes mostly the character of chronic interstitial degeneration. I have seen a few cases of undoubted post-influenzal nephritis in which occurred considerable suppuration. Some other cases exhibited the clinical and urinary features of a combination of diffuse and interstitial inflammation. In not a single instance, however, of chronic renal disease with no etiological history excepting an antecedent influenza, did I find the specific characters of chronic parenchymatous nephritis *per se*.

I am verily of the opinion that the majority of chronic interstitial nephritides, not due to constitutional causes, is the consequence of an acute infectious disease. As chronic interstitial nephritis does not make itself evident by large amounts of serum-albumin or by the inevitable presence of tubular casts, or by pronounced edematous swellings, its existence is often not suspected for a long time. Renal disease with no or but vague clinical symptoms can often be demonstrated by functional diagnosis alone, that is by the determination of the degree of renal activity. In cases of long protracted convalescence from an attack of influenza, or in instances of gradual bodily decline after this infection, I think it imperative to ascertain the state of renal efficiency. This is readily accomplished by the phloridzin method. I inject hypodermatically 0.01 gram phloridzin and expect to obtain thereby from the normally functionating kidneys a minimum of about 1.6 gram glucose within three and a half to four and a half hours. Fourteen cases of protracted convalescence and general systemic decline after influenza examined by me from three to ten weeks after abatement of the acute syndrome during last winter and spring showed the following results as regards their renal efficiency:

Sex	Age	Duration of Acute Symptoms	Time elapsed since abatement of acute symptoms	Urinary Features	Phloridzin Glucose, Gm.	Renal Efficiency
F.	31	8 days	5 weeks	Nothing abnormal.....	0.58	Impaired.
F.	35	4 "	3 "	Slight alb. renal epith.	1.25	Sl'tly imp'd
M.	47	14 "	3 "	Normal.....	0.5	Impaired.
M.	29	10 "	10 "	Alb. casts. epith.....	None	Insufficient
M.	33	5 "	3 "	Nothing abnormal....	2.39	Good.
M.	58	16 "	5 "	Nothing abnormal....	0.8	Impaired.
M.	48	14 "	4 "	Nothing abnormal....	2.08	Good.
F.	37	6 "	4 "	Slight albuminuria....	0.68	Impaired.
M.	28	7 "	6 "	Nothing abnormal..	1.28	Slt'ly imp'd
M.	18	4 "	3 "	Slight albuminuria....	1.72	Normal.
F.	30	12 "	5 "	Pus, pelvic epith	0.43	Impaired.
F.	44	10 "	4 "	Nothing abnormal	0.64	Impaired.
M.	61	14 "	4 "	Alb. casts, ren. epith.	None	Insuff'nt.
M.	60	8 "	3 "	Nothing abnormal...	1.06	Impaired.

Of these fourteen sets of kidneys only three pairs functionated properly, two pairs exhibited slightly diminished activity, in seven instances the efficiency was decidedly impaired, and in two instances the renal function proved entirely insufficient. The slow convalescence, or the systemic decline, could be accounted for—in part at least—by the renal insufficiency or, in other words, by the invasion of the kidneys on the part of the influenzal poison.

250 West Seventy-third Street.

INFLUENZA OF THE NOSE, THROAT, AND LARYNX.

By W. SOHIER BRYANT, A.M., M.D.,

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This disease is due to a specific infection caused by the influenza bacillus and is distinctly contagious. The bacilli gain entrance to the body through the mucous membrane of the upper air tract, usually passing in *via* the lymphoid tissue of the nasopharynx or of the lateral wall of the pharynx and tonsils.

The pathological changes caused by the influenza bacillus are due to local infection and general toxemia and septicemia. Locally there is a submucous serous exudation and edema of the mucous membrane, with occasionally a thin loosely adherent fibrous exudate. Small hemorrhages sometimes occur in the mucous membrane. In the later stages, the mucous secretion becomes purulent and contains a variety of pathogenic organisms. There may be some loss of epithelium and the expectoration may be slightly tinged with blood.

The period of incubation is short and the immunity following an attack is also of short duration. The onset is rapid, ushered in with local pain and swelling and tenderness, with high temperature and marked general prostration.

There are pains in various parts of the body, chiefly in the head, throat, and back of neck. The pains in the head and face appear to be due to acute swelling of the mucous membrane of the various sinuses and closure of their ostia. The mucous membrane is moist, pale, and edematous without much change in the mucous secretion. From the point of entrance, the infection passes both up and down through the mucous membrane, sometimes widely extending. After from thirty-six to seventy-two hours, the violence of the acute symptoms be-

gins to decrease; mucous secretion increases and becomes more or less purulent; the edema diminishes, the mucous membrane becomes red, and sometimes its surface is slightly abraded. The progress to recovery is slow and marked by the continuance of mental and muscular weakness and general depression.

The diagnosis is easily made on the clinical picture. In atypical cases or cases due to mixed infection the diagnosis is sometimes difficult. If the influenza bacillus is found in abundance in the expectoration or tissues, the diagnosis is positive.

Complications or sequelæ frequently occur. The complications that fall within the scope of this paper do not include those affecting the alimentary tract, the general nervous system, the kidneys, the lungs, or the ears. Metastatic infections sometimes occur. We may consider, however, those complications which not infrequently appear in the nose and its accessory cavities, in the throat, and sometimes in the larynx. In the nose, influenza often causes sufficient engorgement and edema to close the fossæ and prevent nasal breathing, and to interfere with the normal olfactory functions. The contact and pressure within the nose cause reflex nervous symptoms of the higher centers and cortex of the brain, with aprosexia and kindred phenomena. The swelling of the nasal mucosa may close the ostia of the various air sinuses and ear. Severe headaches or face aches characteristic of the sinuses affected, result. The inflammation of the sinus may go on to suppuration which may become chronic. A mixed infection is found in these cases. The severity of the complications arising in the accessory sinuses of the nose is usually in proportion to the malformation of the bony and cartilaginous structures of this region or to hypertrophy of the soft parts. The inflammation may be confined to one sinus but usually affects many, all on one side and one or two on the other side. Usually at first there is more or less pain referable to the sinuses, which subsides in a day or two to reappear a few days later with more definite symptoms of sinusitis and empyema involving several sinuses. The pains are now more severe and are more definite in location and tenderness is usually marked. The frontal and maxillary sinuses give definite signs, local pain and tenderness, and opacity on transillumination. The ethmoid and sphenoidal sinuses, however, are more difficult of access owing to their comparatively deep location. The symptoms of involvement of these sinuses are extreme local intranasal tenderness and increased discharge, sometimes associated with pain deep in the head and in the vertex or back of head and neck.

In the throat, the influenza may cause inflammation of the tonsils and when certain other pathogenic bacteria are present, tonsillar or peritonsillar abscess may result.

In the larynx, the edematous swelling is sometimes sufficient to make tracheotomy imperative. Usually pain and cough are the only local symptoms which distress the patient. Aphonia is not the rule.

The prognosis is good for entire recovery in one to six weeks, except when complications arise or when the infection is specially virulent and the patient is previously debilitated. In the latter case, a fatal issue may occur from exhaustion or as a result of complications. The prognosis of complications in the accessory sinuses is good in all except neglected cases. When treatment is commenced early, surgical necessities are usually avoided and the chronic condition is prevented. If treatment is not commenced in the incipiency of the complication, minor nasal operations are usually sufficient to prevent the establishment of a chronic empyema. After the chronic condition has commenced more or less radical surgical means are necessary for a cure, to relieve the local and general strain on the patient, and to avoid the danger to life from cranial extension or metastatic or systemic infection.

The treatment is abortive, local and general, besides the treatment of the complications. The abortive treatment consists in the local use of astringent antiseptics which sometimes abort and often ameliorate the virulence of the infection if they are applied immediately on the appearance of the first sign of local discomfort, pain, or edema. Nitrate of silver in ten per cent. solution, painted on the affected area has given me much satisfaction. Alcohol 99 per cent. with equal parts of glycerin has worked nearly as well.

Local treatment is directed to the relief of the edema, assuaging pain and tenderness, and cleansing and partially sterilizing the mucous surfaces. In the nose and throat this may be accomplished with nitrate of silver; a solution in strength of from 2 to 5 per cent. applied with a swab has given me the best results. Argyrol, up to 30 per cent., on a swab is good. When there is a false membrane, a spray of hydrogen peroxide is indicated. After the acute stage is passed and the edema gone, a spray of Dobell's solution seems to facilitate expectoration of the mucopurulent secretion. When the discharge has lessened, an alkaline aromatic spray is desirable to finish up with. A peroxide of hydrogen gargle is indicated for the throat if a purulent condition exists there. In the larynx, the applications must be considerably reduced in strength. Silver nitrate in 2 per cent. solution can be applied with a swab or spray after cocainization. Alcohol 95 per cent., and glycerin, each one ounce, ferric chloride, 15 grains, and water, two ounces, make a good spray.

The general treatment demands absolute rest in bed and light purgation followed by stimulation, especially circulatory, to keep up the failing strength. Special attention must be paid to keeping up nutrition. The ingestion of large quantities of physiological salt solution is desirable to help the naturally increased diaphoresis and stimulate diuresis for the purpose of washing out the toxins. Small doses of salol (gr. iii), calomel (gr. 1/8) and sodium bicarbonate (gr. x.) tend to keep the alimentary canal in good order.

General anodynes and hypnotics are to be chosen with care to avoid the weakening of the heart's action. Dover's powder or codein seems to be satisfactory. Trional can be used with care. The pains may be greatly relieved by the application of heat or counter-irritation.

Treatment of Complications.—The nasal occlusion is best managed with a 2 per cent. cocaine spray followed by adrenal powder and an alkaline aromatic spray.

Treatment of Sinus Complications.—We will consider the non-operative treatment for the sinus complications along medical lines. The sinus complications are treated by keeping the nose free by the method already described. If that is not sufficient, the hot nasal douche should be used; take two quarts of salt solution as hot as can be borne with half an ounce of sodium bicarbonate, and use a fountain syringe at an elevation of six inches, allowing the solution to run into one nostril and out the other, slowly. The patient should hold the head over a basin. If the ethmoid cells are involved, the head

should be bent down to raise the water level in the nose to cover the ethmoids. If the sphenoids are invaded, the head should be depressed as much as possible on the sternum and the back bent forward. The mouth must be kept open and the patient should breathe through it. Avoid backing up of the water; keep the outlet free lest the water be driven into non-infected sinuses, or the ears and infect them. After the douche use some aromatic spray.

The surgical treatment for the air sinuses is removal of nasal irregularities and hypertrophies interfering with natural drainage, which together with the hot douche will usually relieve the severe pain. We have not the space to consider further the more radical surgical treatment.

The tonsillar condition can be treated by strong applications of nitrate of silver up to 15 per cent. or by hydrogen peroxide gargle or spray preceded by a hot water gargling. If there is an accumulation of pus, an incision is indicated to evacuate it.

Surgical interference in case of obstructed larynx is tracheotomy or scarification, and intubation, in rare cases.

Summary.—Influenza is infectious. The bacillus enters through the mucous membrane of the pharynx. The diagnosis is readily made in the great majority of cases as soon as symptoms appear. It is amenable to appropriate treatment. The complications of the upper air tract can be avoided by prophylactic care of the nose, or serious results can be prevented by early operation, after infection has taken place.

57 West Fifty-third Street.

DUCHENNE OF BOULOGNE.

A BIOGRAPHY AND AN APPRECIATION.

By JOSEPH COLLINS, M.D.,

NEW YORK.

There is scarcely a physician of similar renown in the annals of modern medicine of whom there is so little known as Duchenne of Boulogne. For some years I have been gathering material relative to his life and searching for a portrait or photograph of him. The former has been obtained slowly, much of it by word of mouth from those who knew him, and the latter from his grand-nephew, with whom I was so fortunate as to become acquainted in Boulogne last summer. A résumé of this material should be interesting, for time has put the seal of immortality upon the name of Duchenne. In medical annals, Boulogne is a city of the East. Its most distinguished physician found one branch of medical science, disorders of the nervous system, a sprawling infant of unknown parentage which he succored to a lusty youth. He accomplished this task apparently without aid of fortune or favored feature, in the face of obstacles that would to-day be unsurmountable. He did not go forth to the world a favored being, knowing no desire that Genius did not hallow. On the contrary, the son of a father who followed the sea, he was in feature and in figure, in speech and in manner, a replica of the common people from whom he had descended. When he left his native city and went to Paris to do the work that is a monument to his industry, an earnest of his enthusiasm, and a testimony to his tact, he had already made serious inroad into the period of time allotted to us in which to do creative work. He was thirty-six and he had practised his profession without distinction for eleven years. He went to Paris to live in 1842, and there he worked apparently without cessation for thirty years.

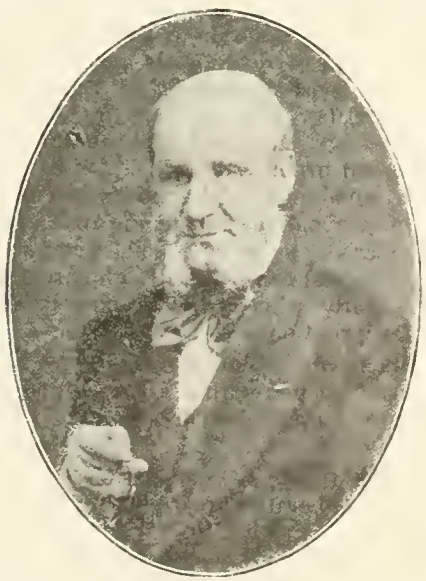

Fig. 1.—Portrait of Duchenne taken about 1866.

There is nothing in Duchenne's early life, so far as I have been able to learn, that would seem to indicate that Wordsworth had him in mind when he said the child is father of the man. His childhood, youth, and early manhood seem to have been singularly uneventful. William-Benjamin-Amant Duchenne was born on the 18th of November, 1806, at 89 rue Neuve Chaussée (now rue Thiers), Boulogne, the second of four sons of Jean Duchenne and his wife, Denise Lasalle. He studied at a college founded by his cousin, Monsignor Haffreinque, and passed his baccalaureate at Douai in 1829, he being then 19 years old. In school he showed an inclination and aptitude for the natural sciences, and the captivation that they had for him led him to study medicine instead of following the sea, which was his father's desire. When he entered the medical school of the University of Paris, Laennec, Dupuytren, Majendie, Velpeau, Cruveilhier, and others whose names have become very familiar to the medical world, were teaching there. Duchenne here formed a habit, which lasted to the end of his days; that of putting into written words everything which he heard, thought, or saw that he wished to remember. It is related of him that he had great repugnance to practical work in anatomy, but as a matter of fact very little is known of his student days. He graduated in April, 1831, the subject of his thesis being "Essay on Burns," and at once returned to Boulogne and in December of the same year he married Barbe Boutroy of Boulogne, who died two years later, leaving one son, William-Maxime-Emile. He is said to have acquired a desirable clientèle, but the death of his wife, to whom he seems to have been ideally devoted, the separation from his son, who was brought up by his maternal grandmother, and the fact that some of his confrères were openly hostile to him determined him to go to Paris, particularly, as he was encouraged by his former schoolmate and friend, Dr. Charles Gros, who had assisted him in the treatment of certain diseases by electropuncture, a procedure suggested by Majendie and Sarlandières, and which now began to interest and absorb him. Meanwhile he had married his cousin, Honorine-Robertine Cornu, a widow. From this union such happiness as he had experienced on his first marriage did not flow.

After taking up his residence in Paris he began

to subscribe himself Duchenne de Boulogne, that he should not be confounded with Duchesne of Paris, and it is this designation that has taken its place in literature. And now began the display of those possessions or qualities of character, industry, poise, and self-confidence which made for his success.

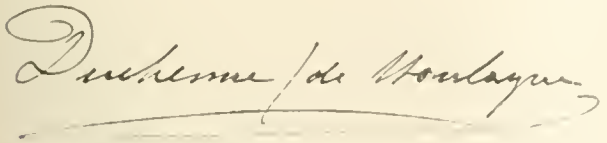

Fig. 2.—Signature in a presentation copy of one of his books.

Apparently it was not appreciated by those among whom he worked in the almshouses and hospitals of Paris that he was booking a box-seat in the coach going to Posterity. Indeed, he was during his entire life without honor in his own country. A few of the mighty in medicine of that day recognized the merit of his work, notably Trousseau, who in his voluminous writings gave circulation to some of Duchenne's discoveries. Besides an appreciation of his merits, Trousseau had also a real fondness for Duchenne. Anecdotes that are still recounted testify to this. Duchenne was not eloquent, and his natural timidity prevented him from expressing adequately and convincingly his thought. Trousseau would often take the word from him, as it were, and with incomparable verbal facility portray the ideas to which Duchenne had been trying to give expression. The latter, recognizing them as his own, would glow with satisfaction and pride to see them appear in the brilliant light which this almost unique clinician, this combination of strong, clear, cool head and warm heart radiated about him. But by the majority of those in whose hospital wards he worked he was looked upon as a poacher in the open or as errant and bizarre. His industry, his perseverance, his sagacity, his frank disregard of conventionality, his unfamiliarity with discouragement, his insensitiveness to the slights of those who hadn't time, finally won out for him in the arena that was open to him, viz., the *Revue Médicale* and the Foreign Medical Societies, in which he ardently sought, and apparently always obtained, corresponding membership.

In Paris he lived at 21 Boulevard des Italiens, where, with the assistance of his servant Alexis and Dr. Chrysaphis, he treated many patients by electricity, meanwhile studying the immediate and remote results of its application. His clientèle was mainly poor persons, but later it must have been of a more lucrative class for some years before his death, *i.e.* at the outbreak of the Franco-Prussian war, he was in the possession of a competency.

He regulated his mode of life so that nothing should interfere with his study. Every morning he went as a visitor to one or two hospitals, chose the most favorable cases for study, and devoted his time to them. The afternoon he devoted to experiments with electricity and photography, both of which were then in their infancy. In many instances he pursued the investigation of a case for years, following the patient from hospital to hospital. The large public hospitals of Paris to-day are, in their arrangement and equipment, far behind the hospitals of most highly prosperous civilized countries. What they were three generations ago we do not have to conjecture, for there is no dearth of testimony to prove that a large part of the clinical material, especially in the big hospitals devoted to the treatment of chronic diseases of the nervous system, like the Salpêtrière, Bicêtre, Hotel Dieu, etc., was not classified or interpreted. Patients were rarely examined fundamentally, and clinical histories, as the designation is understood to-day, were unknown. All motor incompetencies were classified as "paralysis" and functional and organic diseases were almost hopelessly jumbled. The physician or physicians in charge of these hospitals were monarchs of all they surveyed, and their assistants were little monarchs, especially when the big monarch was away. It was a difficult task that Duchenne set himself to interpret to these men disease manifest in patients under their care, and particularly as his aid was unsolicited. Indeed, in many instances he was laughed at by the chief, tolerated by the subordinates, and looked down upon by all. Of course, all this was changed as soon as he began to publish those articles that have since immortalized his name. But it is evident that it often required a combination of tact and insensitiveness vouchsafed to but few successfully to calm the turmoil which his acts often engendered. It is scarcely contributory to the *amour propre* of the physician who says that a patient is bedridden from paralysis to find this patient a few days later not only standing, but carrying a full-grown man upon his back, in order that the observer, and anyone else who will take the trouble to look, may be convinced that there is no real paralysis, especially if the one who instigates the demonstration is an interloper, and really has no right, and scarcely a welcome, in the place! But Duchenne stuck to his task, explaining to anyone who would listen, and arguing with anyone who would deign.

His method of obtaining clinical material accounts, in a measure, for the numerous disputes in which he became involved, as to the priority of some of his discoveries. He was not a pugnacious individual, but he didn't lack opponents, and enemies who looked upon him as a therapeutic specialist, and not a scientist, and who did not hesitate to say so in language more plain than convincing. But the fruit of his labors he submitted with confidence to the medical profession at home and abroad who, not distracted by the sight of the travail or prejudiced by the aggressiveness of the creator, sat in calm judgment upon it and bestowed praise whenever it was merited and gave credit whenever it was due. Indeed, there is much in Duchenne that reminds of Plato. The self-belief, the equanimity, the desire to abide by the collective judgment of his fellow men, the willingness to argue his contention with every comer, and his abiding faith in his own observations and deductions, all suggest the immortal Æginian.

Apparently it was his interest in electricity which first led him to the study of nervous diseases, and although electricity has not justified any of the high hopes that he had of it therapeutically, he really laid the foundation for much of the work which was afterward done by such investigators as Erb. Convinced as he was of the necessity of taking the muscular system for the basis of his scientific investigations with electricity, Duchenne prepared a series of works on the physiology and anatomy of the muscular apparatus. Before his work the physiological function of isolated muscles, the coordination and synergetic effect of their contractions, the relative part that each muscle played in movements of various kinds and of different parts such as the extremities, the trunk and the face, were known vaguely and imperfectly. He classified, defined, and formulated our knowledge concerning them.

Duchenne was struck with the fact that if one placed two poles or electrodes which had been properly wet on moist skin, the current traversed the skin without exciting any appreciable cutaneous sensibility, but localized its action on the muscles or the nerve subjacent. His first publication, entitled "The Art of Limiting the Electrical Excitation in the Organs Without Pricking and Incising the Skin; a New Method of Electrization with Equal Localized Electrization," was published in Comptes Rendus de l'Académie des Sciences, 1847. In 1851, in his communication to the Academy of Medicine, he presented his first observation on the muscles of the face, but it was not until eleven years later, in 1862, that he published his first essay on this subject. This was a veritable storehouse of accurate information. Many articles had been written by philosophers, physiologists, and physiognomists, but only Lebrun had pointed out the resemblance of certain types of human physiognomy to that of animals. Leonardo da Vinci, Camper, Gratiolet, *et al.*, had left some ingenious observations, perhaps even formulated them for utilization in art, and likewise some rules, but these were purely empirical, the results of observation, incomplete, incoordinate, unscientific. But here were the results of experimentation, and results that could be demonstrated by anyone! He was struck with the insight revealed by a statement of Buffon: "When the soul is agitated the human face becomes a living picture, which portrays the passings with as much delicacy as energy, where each movement of the soul is expressed by a line, each action by a character of which the prompt and living expression precedes volition, and reveals by pathetic signs images of our most secret agitations," and he added: "The soul is therefore the source of all expression—it is this which puts in play and causes them to engrave upon the face in characteristic marks the history of our passions. Therefore, the laws that govern the expression of human physiognomy may be sought in the study of muscular action." From this standpoint he approached the mechanism of the human physiognomy, and the results of his labors in this field have furnished sculptors and anatomists, physicians and psychologists, with much reliable information.

His advent into the field of neurology was the study of traumatic lesion of mixed nerves. In the symptomatology of paralysis of the facial nerve, which had been so admirably described by Bell, he made a contribution which, though small, was of great importance. In certain cases of facial paralysis there exists epiphora which is absent in other cases. When it exists, Horner's muscle is paralyzed, and it no longer plunges the lacrymal point into the lacrymal sac, while, when it is not involved, these little muscular fascicles preserve their contractility. It is claimed by those who should know that this work alone would give Duchenne high rank as a scientific investigator. He also pointed out that in facial paralysis of cerebral origin the electrical contractility of the paralyzed muscles is intact. In symptomatic facial paralysis, due to a lesion of the cerebral peduncles or to any lesion as high as the protuberance, and alternating with paralysis of the members of the other side, there exists in the face abolition of the electrical contractility of the paralyzed muscles, while the paralyzed members of the opposite side preserve their normal electrical irritability. In facial paralysis dependent upon an organic lesion of the nerve at the point of its emergence from the oblongata, the paralyzed muscles lose their electrical contractility. Finally, he pointed out that in rheumatic facial paralysis it is necessary to distinguish two varieties, one in which the electrical contractility of the muscles is scarcely diminished, the other in which the electrical contractility is profoundly affected or abolished, and he pointed out that when this occurs the lesion is severe and the paralysis rebellious, often incurable. This is the basis of sound teaching as to prognosis in this disorder at the present day.

Practically all that is known concerning the familiar forms of lead palsy and the electrical reactions in this condition were established by him. But this was of small importance compared with his investigations of the diseases of the spinal cord.

Until he studied the subject of the disease that is now known as anterior poliomyelitis, there was still much discussion as to the anatomical lesion upon which it was dependent. Heine had spoken in favor of its dependency upon a spinal lesion, but most writers insisted that it was an "essential paralysis." The atrophy which almost invariably occurs in the paralyzed limbs was attributed to inaction, but Duchenne maintained that it required more than the absence of movement to produce such profound disorder of nutrition of muscles, bones, and ligaments, and that it was necessary to seek for a lesion much more fundamental. He compared the evolution of the clinical picture in anterior poliomyelitis with that resulting from traumatic lesions of the spinal cord in the adult, and in 1855 he formulated the hypothesis that the lesion was in the anterior gray matter of the spinal cord. Ten years later Charcot and Cornil, Prevost, and Vulpian, not to mention others, substantiated this claim. Later he described anterior poliomyelitis of the adult, a disorder similar to that of the atrophic paralysis of children, and stated that the atrophy of the ganglion cells of the anterior horns was very probably the principal anatomical lesion of this variety of acute spinal paralysis of adults.

He was not so successful in splitting up the remaining cases of paralysis of the extremities attended with atrophy resembling these cases that we have been describing, and from which has since been distinguished polyneuritis, Landry's paralysis, and certain forms of diffuse myelitis, although he had, as I have said, distinguished three distinct species of paralysis dependent upon atrophy of the cells of the anterior horn, *i.e.* so-called infantile paralysis, and subacute poliomyelitis in children and poliomyelitis of the adult.

But it was in the field of the amyotrophies that his labor was most productive. He did something for the subject of electrodiagnosis and electrotherapeutics, and he did much for the artist who seeks to interpret the anatomy of expression, but in the field of amyotrophies he made contributions which were fundamental and which will always remain as landmarks.

The disease above all others of the spinal cord that is associated with Duchenne's name is spinal progressive muscular atrophy. Observations of this disease were apparently made fairly early by him, soon after he came to Paris. But it was not until Aran, then physician to the Hôpital Saint-Antoine, published Duchenne's cases that knowledge of the disease became at all disseminated among the profession. Aran's chief work on the subject was published in 1850, and there can be little doubt that it was chiefly a summary of Duchenne's observations, as testify the following words of Aran, "I owe a thousand thanks to Duchenne of Boulogne,

who has put at my disposal all the facts which he has gathered, and without whose aid I should not have been able to give all the details of the muscular system in my cases." In the beginning Duchenne seemed to incline to the view that in this form of disease there was a primitive muscular alteration, but he soon contended that the lesion was of the anterior horn cells of the spinal cord. Apparently he never interpreted the class of disease that is now known as the dystrophies, although he remarked most of the distinguishing features of them, such as the appearance first of the atrophy in the muscles of the face, the family character of the disease, the apparent hypertrophy, etc. In fact, the latter feature, viz., the pseudohypertrophy, was described by Duchenne with a great deal of detail. It is remarkable that Duchenne, having made the masterful study of the disease which is known by his name, was so willing to bend the knee to the pathologists who maintained that the disease was not in reality one of the spinal cord which Duchenne at first contended it was. He returned to the belief, apparently, that it was one of primitive atrophy of the muscle, but the difficulty of reconciling the absence of lesion in the spinal cord in many of the cases of chronic progressive muscular atrophy that came to autopsy was the chief reason for this turning about of Duchenne. Finally, as it became evident that there were many different forms of atrophy, it was realized that the form described by Duchenne had a definite clinical course and a definite pathological foundation. After the establishment of this disease, the description of bulbar palsy, or of glossolabial paralysis, as he called it, was easy. To this disease he gave a clinical description that has never been improved. He recognized, moreover, that it was in reality a disease similar to that of spinal progressive muscular atrophy.

The part that he had in the interpretation of locomotor ataxia was that of an original observer, despite the fact that it was recognized as a definite disease in England by Stanley, and by Todd, and in Germany by Romberg, it seems justifiable to assume that Duchenne knew nothing of the work of these investigators. Although his descriptions of this disease do not tally so accurately with its present-day delineation, as do those of some of the other diseases that he described, this is due to the fact that tabes does not display itself to-day as it did half a century and more ago. He separated it from the paralyses; he recognized its luetic parentage, and he depicted the morbid alteration of the cord upon which it is dependent. Like so much of his purely clinical work, his investigations of locomotor ataxia were disseminated largely through the writings and teachings of his brilliant contemporary, Trousseau. This by no means exhausts the enumeration of his works, but they represent his chief contributions.

On the 27th of June, 1807, a monument to his memory was unveiled in the Hospital of the Salpétrière. In the half century that had elapsed since he began those investigations in the wards of that hospital, his fame had grown to such an extent that he deserved the eulogiums that were pronounced upon him by Joffroy, Raymond, Lereboullet, Duval, and Motet. It bears the inscription

1806-1875

A. Duchenne (de Boulogne)

Electrisation localisée

Physiologie des mouvements Neuropathologie.

Mathias Duval said at the time that Duchenne's work consisted essentially in bringing order out of confusion, especially in the realm of the nervous and muscular systems, in unraveling the physiology of movement, the mechanism of the human physiognomy, and in the application of electricity, and perhaps this adequately summarizes it.

Not only was he a clinician in the literary sense of the term, *i.e.* an interpreter of disease phenomena at the bedside, but he was highly skilled in the art of prognosis—perhaps the most superior quality of the physician. Overshadowed by Charcot and Trousseau, he measures well up with these giants of medicine a generation after their death, and the years to come may add such to his reputation that he will be counted the chief exponent of clinical

Fig. 3.—Frontispiece to the Album de Photographies Pathologiques, showing Duchenne demonstrating faradization of the temporal m

neurology in the relation to pathology of his time.

The penalty paid for greatness is manifest often by an abiotrophy of the germ plasm. The man or woman who writes his or her name in capital letters on the scroll of time often pays by the forfeiture of his or her kind. Duchenne had one son who studied medicine, graduated, and entered practice, but who succumbed to dementia præcox when he was twenty-five years old. To this son he was devotedly attached, and although Duchenne saw very little of him until his maturity, the young woman who became his wife proved a veritable daughter to Duchenne for the remainder of his days. Her kindly assistance and sympathy were often mentioned by him, and the name of Mlle. Julie Bonnel is a cherished one with the Duchenne descendants.

The accompanying reproductions of photographs

give some idea of Duchenne's personal appearance in the latter years of his life, but they tell little of his youth and of his appearance in the struggling days. He was a son of the vigorous race of Boulognese, for there is a clear record of his forbears for two hundred years in Boulogne, and the best of them were like his father, seafaring men. He was of medium height and build, with deep chest and broad shoulders, pronounced facial features, and of a color and carriage that bespoke physical vitality, the pictures of him demonstrating the contraction of the frontal muscle reproduced here shows these features admirably. With these he combined the moral qualities of perseverance, endurance, and self-reliance, which are the possession of so many obscure heroes of the sea for whom the accomplishment of duty is adequate reward. In his youth he was all ardor, enthusiasm, and maintained that "Still waters" had no appeal to him, and that one may expect nothing remarkable from one who knew not how to be young. Frank, he did not attempt to conceal his opinions because they might displease. This gave his manner, particularly in the later times, the appearance of brusqueness. He was independent, expansive, ardent, tenacious. These were his dominant racial qualities, and they were the foundation of his whole career. He was not easily discouraged, and pursued his researches and experiments with a patience and perseverance unbounded.

In 1855, when he published his work on "Localized Electrization," he remarked that his task was far from finished, and that it remained for him to study well the muscular functions with the aid of clinical observation, and he added: "Will my life suffice? I trust so by the aid of God—and my confrères." Ten years sufficed for this labor. When he was old the suggestion of honors rather than the offer came to him. Dumas urged him to offer himself as member of the Institute. He is said to have replied: "No, my only ambition is that I shall not die, living always in my works. There are those who have all honors to-day, but later they will be forgotten, while my work will still live." No lack of self-belief or self-reliance in these words!

Duchenne is said to have had a character of great joviality, loved jokes, and was delighted when they succeeded, but in later life the world seemed a very serious place as he became more drawn into the maelstrom of work. It is related of him that he was often so occupied and preoccupied that he forgot his appointments, even written ones. Invited once to dinner at Baron Hausemann's, Prefect of the Seine at that time, he presented himself in evening dress eight days after the event, and it was with great difficulty that he was made to understand that the dinner had taken place the week before.

The siege of Paris was a trying time for him. His ancestors were many of them combatants, and his blood, though moving slowly from the burden of years, called him to the defense of his country—a call to which he could not respond. He found consolation in succoring the sick, the wounded, and starving during that terrible time. In one year, 1870-71, he lost his wife, his brother, his son, and a number of other near relatives. To Duchenne, who was always a man of strong family feeling, especially in his late maturity, this was a most depressing period, and it apparently initiated the symptoms of cerebral arteriosclerosis from which he died four years later, and which caused him and his friends, because of the distressing character of the symptoms, so much pain and misery meanwhile. In 1875, on his return from a trip to London, he was seized by an attack of cerebral hemorrhage, and succumbed to the disease that sufficed for his father fifty years earlier.

Although brought up to conform to the robust faith of his fathers, he had, like so many other scientific men of his period, ceased to be a participant at public worship, but when he was seized with fatal illness he not only sought the mediation of the church and its ministers, but he charged his friend and confrère, Dr. Gros, not to omit calling attention to the fact that he had received the last sacraments. His last words are said to have been "Plus j'approfondissais la science plus je reconnaissais l'existence de Dieu."

In giving an account of his funeral, a paper of the period said: "We will not describe the ceremony. The least known and least important member of society could not have had a more insignificant funeral procession." As a matter of fact, scarcely a score of friends accompanied the body to the grave. His modest tomb is in the cemetery de l'Est at Boulogne, near that of his first wife, and is nearly hidden by the weeds and thorns of time. It bears the simple epitaph:

To the memory
of
Dr. William Duchenne of Boulogne
died at Paris, 17th September, 1875
at the age of 69 years.

RELATION OF ACCIDENTS TO FUNCTIONAL NERVOUS DISEASES AND PSYCHOSES: MEDICOLEGAL CONSIDERATIONS.*

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THE modern requirements in every sphere of human activities are highly contributory to accidental injuries. Traumata may lead to surgical and nervous disturbances. As we will be concerned to-night exclusively with the latter, it is necessary first to emphasize what factors are the most frequent causes of this disorder.

Speaking only from the standpoint of personal experience (which incidentally is quite extensive), I may say that, among all accidents, those caused by conveyances (railroads or trolley cars) give the largest contingent of victims. Laying aside the organic injuries, such as fracture or dislocation of the vertebræ, tearing of the spinal cord or of peripheral nerves, fracture of the skull, followed by tearing of or hemorrhages in the cerebral tissue, I will confine myself to functional nervous disorders. The subject is an extremely important one for two reasons: *First*, traumatic functional neuroses are exceedingly frequent; *Second*, the neuroses are very frequently misunderstood, and therefore a proper estimate of their value is not always given.

The functional nervous diseases produced or perhaps brought out by such accidents are: hysteria, neurasthenia, chorea, paralysis agitans, amnesia. A review of the clinical pictures is necessary for a proper appreciation of the medicolegal questions. Let me therefore emphasize as briefly as possible

*Read by invitation before the Camden City Medical Society, December 3, 1907.

the essential features of each of these affections, omitting the details.

Hysteria.—When a collision, for example, occurs, the shock and the fright into which the passenger is thrown are sufficient causes to disturb the workings of the entire central nervous system or of its main centers. Supposing he or she during that time is thrown even not violently against the seat of the car, the anticipation alone of a possible severe injury or of a fatal injury, or else of immediate death, is capable of putting out of order the function of the nervous system. During the first few days, or even weeks, the patient still dreads that his life is in danger. The essential features of hysteria are:

Sensory Symptoms.—Hyperesthesia in areas or along the spine; loss of sensations in the distant segments of the limbs (glove-like and stocking-like anesthesia); anesthesia confined to an entire half of the body (hemianesthesia); anesthesia of the pharynx, of the conjunctivæ, of the retina. The latter will be manifested by a contraction of the visual field. The special senses may also be affected. Sudden partial blindness or deafness (without material changes in the eyes or ears), vomiting occurring immediately after the accident and continuing for several days or weeks without any relation to the food and with an excellent appetite—all these symptoms occur quite frequently.

Motor Symptoms.—Palsies, contractures confined to segments of limbs are not infrequent, but they are never accompanied by disturbances of reflexes usually seen in organic nervous diseases. The absence or exaggeration of knee-jerks, toe phenomena, muscular atrophies with reactions of degeneration accompany organic but not hysterical palsies.

The function of the viscera may also be disturbed. Hysterical aphonia, anuria, polyuria, retention of urine are well known phenomena. I refer you to a very interesting case published by me in the Medical Record, August, 1900, of a woman who became anuric after an emotion.

Psychic symptoms are quite frequent. Temporary amnesia, capriciousness, inconsistencies in the ideas and conduct, dissociation of personality, hallucinations are possible occurrences in hysteria. Hysterical subjects are easily influenced to change their thoughts, to do certain acts, to acquire certain sensations, to execute or to adopt certain motor phenomena. Suggestion or autosuggestion plays an enormous rôle. I have also seen cases of hysterical paroxysms following railroad accidents. A young girl of seventeen, while lying in bed, contorted herself, assumed the position of opisthotonos, was animated with a generalized tremor, so that she was unable to utter a word distinctly.

These are the characteristic manifestations in the motor, sensory, and psychic spheres of a hysterical individual. Of course, not all of them are simultaneously found in every case, but when some symptoms are present in the form and intensity as described above, the diagnosis of hysteria can be made without hesitation. Intentionally I omitted details, as the latter may be encountered in other affections.

Neurasthenia.—This neurosis frequently follows accidents. Its main features are: physical exhaustion and undue irritability, so that the patient cannot stand the least contradiction or annoyance. The neurasthenic feels fatigue upon the least exhaustion. Mental processes are also sluggish: the least mental effort disables him from continuing his work. The patient complains also of backache, headache, and insomnia. The symptoms are mainly subjective. The objective symptoms are very few: tremor of the hands, decreased reflexes, cold, clammy skin, and the special facies. The latter is that of a tired and depressed individual and one full of anxiety.

Chorea, with its irregular and incoherent muscular movements rapidly following one another, is too well known to dwell upon. It does not frequently follow accidents. Within the last three years I have seen only two cases, and then there was a history of previous attacks. The shock of the collision was immediately followed by a new attack of chorea.

The same remarks can be made about *Paralysis agitans.* In one case of a middle-aged woman the onset of the shaking palsy was traced to twenty-four hours after a trolley accident. In two other cases (a man and a woman) the shock of the accident was the direct cause of aggravation of the previously existing symptoms, which from that time kept on increasing in intensity. As it is well known, the disease is characterized by a continuous tremor affecting mainly one or both hands when the latter are at rest, and by a fixed attitude of the body, mask-like expression of the face.

Amnesia.—This term is applied in practice to an acquired diminution or loss of memory. There are two classes of amnesias: functional and organic. The characteristic feature of organic amnesia consists of its permanency and progressive evolution. Here, by virtue of an organic alteration of nervous elements, the memory for recent events is first affected, as new impressions can no more be associated and preserved. Then gradually old intellectual acquisitions become effaced.

Functional amnesia presents by far more variations than organic. It may concern only a certain group of ideas; it may be general, in which all past events are lost; it may be partial, as in cases of double personality, a striking example of which was reported by me in the *American Journal of the Medical Sciences*, 1906; it may be localized when it concerns only a certain principal fact of life. Sometimes, in addition to the latter, a certain period of time immediately preceding it is forgotten. We then speak of retrograde amnesia. When the period of time following the principal event is forgotten, there is an anterograde amnesia. These two forms may be combined. Within the last three years I have seen two cases of retroanterograde amnesia which followed a fall from a trolley car in which the patients struck their heads against the ground. In one of them there was loss of consciousness; the patients were confused for only ten minutes. A careful examination revealed in both cases no symptoms of an organic lesion. Subsequent events showed the diagnosis in both cases to be correct, as the patients made an uneventful recovery.

Medicolegal Considerations.—In the presence of an individual who, having sustained a trauma, complains of disturbances of a nervous or psychic order, the following medical problems must be solved: *First*, is the alleged disorder genuine or simulated, and what is its nature? *Second*, should the symptoms observed be attributed to the traumatism? *Third*, if the latter is correct, what is the degree of incapacity for work, what are the prognosis, duration, and termination of the malady?

1. The determination of simulation is as a rule not difficult. When an affection is characterized by objective signs, they will be easily recognized. It is absolutely impossible for anyone to simulate an anesthetic pharynx, an anesthetic conjunctiva, a contraction of the visual field, a genuine hemianesthesia, a genuine plus reflex. The ensemble of these stigmata constitutes the typical picture of

hysteria. This malady is a well-defined morbid entity, which, except in rare cases, cannot be confounded with any other nervous affection. It is true that an hysterical paroxysm with its screaming, laughing, and various motor and psychic phenomena, can be to a certain extent simulated, but an experienced physician, familiar with the disease, will have no difficulty in recognizing it. The psychic symptoms of hysteria are not ordinary symptoms; they present a special physiognomy, the main points of which can never be guessed by the simulator. It is the entire picture of the attack that should be taken into consideration, not individual elements.

To illustrate to what errors a nonfamiliarity with the disease may lead, I will cite you a case in point. An attorney requested me to examine one of his clients, who claimed to have developed a hemiplegia after a broken trolley wire struck him. The physician in charge pronounced it an apoplectic stroke (there was a partial loss of consciousness) caused by the electrical current of the wire. The patient presented a limping of his left leg and some inability to use the left arm. The condition persisted almost two months. Examination showed a state of affairs totally different from typical hemiplegia which is due to a brain lesion. The knee-jerk was not exaggerated, and the abnormal reflexes usually found in such cases were absent. The entire left side was also wholly anesthetic. It was unquestionably a case of hysteria. The attorney, of course, did not like my diagnosis. I learned later that he settled the case out of court, and the patient made a complete recovery shortly after he got his money. In fact, I cured him with a few séances of a strong suggestive static breeze.

A woman was in a slight railroad accident. She was only thrown on the floor of the car and there was no surgical injury. When picked up she could not hold herself in an erect position nor could she walk. The legs gave way under her. The condition was pronounced grave and a diagnosis of complete paraplegia due to a hemorrhage in the cord was made. I saw the patient since then on several occasions. There was no paralysis, as she could move the limbs easily while in bed, but could not use them when standing or walking. The reflexes were normal, sensations normal, and the sphincters intact. It was a case of hysterical astasia-abasia, from which she fully recovered after a course of rest treatment with good feeding. The claim made in court was a large verdict for a permanent and incurable spinal cord injury. Of course, I was not called to the stand because of my diagnosis. A large verdict was obtained, but injustice was done to the railroad company. My diagnosis was certainly correct.

Far more difficulty is encountered in the medicolegal consideration of *neurasthenia*. This malady is characterized almost exclusively by subjective manifestations. When a patient, having met with an accident, complains of fatigue, backache, headache, insomnia, and irritability, there are no means of verifying the presence or absence of each of these symptoms.

Nevertheless, when the disease is pronounced, the general aspect of the individual will aid in forming an opinion as to the veracity of his complaints. There is usually loss in weight, loss in strength, pallor of the face, depression, cold and clammy skin, tremor. When the case is mild, the latter symptoms are absent, and then one has to rely upon the first series of subjective disturbances. I have seen time and again that, in spite of an enormous shock following for example a collision or a fall from a height, only a few subjective symptoms would be complained of. In such cases my opinion before the jury and court would be expressed thus: "If the subjective symptoms the plaintiff claims to suffer from are correct, he is neurasthenic; but I have no means to verify them."

In such a manner justice is done to both sides, defendant and plaintiff. My rôle, I believe, is to present medical facts and explain their meaning to a lay jury. The decision as to the relation of these symptoms to the accident is left entirely to the impartial judgment of the twelve men.

In the majority of traumatic cases hysteria and neurasthenia are combined. This facilitates considerably the problem, as objective signs are almost always present, and if there is a certain hesitancy in the mind of the physician in accepting the subjective symptoms, due credit should be given to the objective phenomena of the victim of the accident.

Chorea and *Paralysis agitans* developed after a trauma present no difficulty in being recognized. Simulation in such cases is an impossibility and the objective symptoms are too evident to be contested.

Considerable difficulty will be encountered when amnesia is the only symptom produced by the accident. If the loss of memory is associated with hysteria, the symptoms of the latter will render sufficient aid, but when hysterical stigmata are absent the difficulty becomes very great in deciding the question whether the amnesia is genuine or not. In such cases the examination should be repeated, the individual must be tested with great perseverance and patience, he must be questioned as closely as possible and for a prolonged period of time. Great skill and tact are necessary in investigations of this sort, and in some cases one may arrive at a positive opinion.

2. The second medicolegal problem is, as I said above, to determine whether the maladies discovered in an individual are attributable directly to the accident. While a shock, physical or mental, is a frequent cause of functional nervous diseases, one cannot nevertheless be affirmative in a given case unless the state of health prior to the accident is known to the examiner. Hysteria, neurasthenia, chorea, or paralysis agitans may have existed before the plaintiff sustained the shock. It should, however, not be forgotten that if any of those affections existed before, the newly sustained shock will aggravate it. A person, for example, is supposed to be in the process of recovery from a neurosis. Should he at that time sustain an injury the primary disease is likely to return and present itself in a more pronounced form than in its first attack.

Individual predisposition should also be taken into consideration in giving an account before court and jury. Neuropathic individuals are more apt to suffer from any of these neuroses than normal individuals. They are predisposed, and the least shock disturbs the workings of their nervous system with the greatest facility. Individuals whose vitality, and therefore resisting power, has been lowered following a protracted infectious disease, are inclined to respond with unusual promptness to the effects of a shock. The neuroses will find a fertile soil for their development. It is consequently important to surround one's self with this precaution in giving an estimate of the degree of the individual's suffering.

3. The last proposition of our problem is to determine the degree of incapacity caused by the accident, the consequences, duration, and termination of the latter.

Hysteria and neurasthenia are not synonymous

of simple nervousness, as some pretend. They are well defined diseases of the nervous system. They do incapacitate for mental or physical work, but only to a certain extent. A neurasthenic with his chronic physical and mental fatigue is certainly not able to accomplish much. The disease presents variations in its intensity. If the symptoms are marked, the patient must go to bed, as rest is the most essential element of the treatment. Then there is no question of work. When the case is mild, and the fatigue is not particularly marked, and the backache with the headache only occasionally disturb the patient, a certain amount of work can be done by the patient, and with the proper regulation of the patient's mode of living he can be made to feel quite comfortable.

Hysterical patients are not very much disturbed in their daily life when the psychic symptoms are not present. One may bear the anesthesias, hyperesthesias, and tremor, also contraction of the visual field without being particularly annoyed. But, as a rule, there are psychic phenomena, viz., great emotionality, irritability, crying spells, restlessness, impressionableness, etc. Such patients are unfit for work. Their mental concentration and application are of a very short duration. Whatever they commence, they are unable to finish. Their association of ideas is incomplete because of instability and want of depth of mental processes. For this very reason good work cannot be expected from those in whom psychic disturbances are marked. Even in those cases which are apparently free from mental symptoms, the least emotion or undue exertion will bring forward the above psychic manifestations so characteristic of hysteria, because the nature of the disease predisposes them to an unusual responsiveness. The degree of incapacity will depend upon whether the psychic symptoms are present or not, also upon the intensity of the latter.

Chorea and paralysis agitans incapacitate for physical work considerably, but only partially for mental work.

When amnesia occurs, a disability will ensue if it is of a generalized character. If it concerns only a certain past period of life (retrograde or anterograde form), there is no disability whatever. The individual is perfectly able to earn a living, as the memory is good for all events except that one.

A proper discrimination as to degree of incapacity in all the neuroses is always possible when the above elements are taken into consideration.

Not infrequently we are asked about the future of the victims of accidents. My answer is that while the neuroses are curable affections, they nevertheless may last an indefinite time. The results depend upon many circumstances, viz., treatment, surroundings of the patient, previous general health, ability or inability to carry out certain instructions, outside influences, and finally the individual make-up. In exceptional cases the disease may last for years in spite of treatment. It should not be forgotten that recurrences are possible, and in fact are not infrequent. In the majority of cases the patients make a good recovery. The latter is possible in hysteria, neurasthenia, chorea, and amnesia, but not in paralysis agitans.

Psychoses.—A very important chapter from a medicolegal standpoint is constituted by mental diseases. A shock caused by an accident is likely to produce mental disturbances, but between the latter and distinct, well-defined, mental affections there is a great difference.

Hysteria is, properly speaking, a psychic disturbance, and its mental phenomena described above belong by right to this chapter. They have been sufficiently emphasized at the beginning of my address. Amnesia is another psychic phenomenon. It is also familiar to us.

When the immediate symptoms of brain injury are severe, there is usually a cerebral hemorrhage or fracture of the skull. A cerebral contusion, followed perhaps by minute disseminated hemorrhages, is apt to be followed by mental symptoms, such as vertigo, delirium, confusion, loss of memory, and coma. In such cases the patient either dies or gradually recovers his mental faculties. When, instead of recovery, dementia develops, there is always an underlying basis in the form of alcoholism, syphilis, epilepsy, or arteriosclerosis.

In infancy and childhood the condition is somewhat different. When a child in the process of development undergoes the effect of a severe cerebral injury, the result may be very serious. If epilepsy follows there is no doubt that the mental growth will be interfered with. Faulty cerebral development may follow a grave injury to the head, irrespective of epilepsy. The prognosis, therefore, is guarded when arrest of intellectual development is observed shortly after a cranial injury.

The relation of paresis to traumata is a question of great importance. There are some alienists of note who believe that an injury is apt to develop paresis, others find no relation between the two. Paresis is an incurable disease; it is one of the most serious of mental affections. If its symptoms are noticed first after an accident, one is naturally apt to attribute them to the latter. At the Congress of the French Neurologists and Alienists in 1906 this question was the subject of a special report, so important it was considered. It was discussed at length by the most brilliant minds. It is frequently brought forward as of a special import, as courts and lawyers are waiting for our decision.

My personal views on the subject are that paresis is not and cannot be caused by an accident. It is a mental disease of a slow, but progressive evolution, and characterized pathologically by a gradual degeneration of cerebral tissue. If its symptoms become sometimes conspicuous after a trauma, is it reasonable to suppose that a cerebral degeneration sets in immediately and at once produces the symptoms the development of which require a long period of morbid changes in cortical cells? In my judgment the disease existed before the accident, and the latter served only as an exciting cause for its more rapid development. Medical records are abundant with examples of this nature in other affections.

The mental manifestations of paresis, in its expansive or depressive forms, the physical signs, as irregular and unequal pupils, the disturbance of the pupillary reflexes, characteristic speech, tremor of the tongue and hands, changes in the reflexes (loss or increase), apoplectiform or epileptiform seizures—it is not conceivable that these symptoms will explode shortly after an accident without being in existence prior to the accident. My answer, therefore, in court will be that trauma is not the direct cause of paresis.

I will now cite a case with another mental affection before discussing the latter. The man I was called upon to examine fell off a ladder while working at a building. He struck his head and became unconscious. In the evening of the same day he had an epileptiform seizure with generalized convulsive movements. He was taken away from work, kept at home, and treated for epilepsy. Since then

his mental faculties became obtunded. His memory began to fail. He was unable to give an account of himself. He would make grave mistakes. Would ask for a fork when he wanted a knife; would forget his wife's name. He would try to get in his neighbor's house instead of in his own. He also had outbreaks of extreme furor, in which he would use profane language, and even strike, so that the lives of his relatives became endangered. After the explosion of this passion subsided he had no recollection of what occurred.

When I saw him months later he presented marked tremor of lips, increased reflexes, pronounced confusion, and a vague expression of the eyes with dilated pupils. He could not give me an explanation of those outbreaks of passion, of which he had no recollection. The patient had evidently been suffering from epileptic dementia. The attacks he presented were psychic in form, but of epileptic nature.

The question arose in court whether the trauma was the direct cause of his mental condition. A very careful search into the man's previous life, with data obtained from his wife, who was separated from him before the accident, also from his relatives and friends, revealed the fact that while the man never had a seizure prior to the trauma, and was mentally clear as he worked in the same place for seven years, he neverthless had a syphilitic infection and used alcohol to an unusual excess.

My opinion, based upon all the facts of the case, was formulated as follows: "The trauma was an exciting cause to the epilepsy with its dementia, but the patient was predisposed to the disease. Any other cause would have produced the same condition. It is also possible that the mental affection would have developed without any apparent cause, as chronic alcoholism and syphilis are sufficient etiological factors in epilepsy." The verdict was just, because it was moderate. He was not entitled to a very large compensation, but compensated he should be. An accident may be the exciting cause of a delirium or a delirium tremens in an individual profoundly intoxicated with alcohol. Similarly I have seen a confusional state developed in individuals with a previous alcoholic history. A thorough investigation of the personal antecedents is absolutely indispensable in cases of this category.

Conclusion.—The chief aim of my address was to present to you an impartial view of the medico-legal side of a highly important problem. In cases of railway or other injuries caused by neglect of those who have in charge the management of transportation cars, it is no more than just that the injured person should be compensated for disability. On the other hand simulation or exaggeration of incapacity should be condemned. The physician is indispensable to the law. In the name of justice he must be invariably reserved in his statements. His opinion must be formed after a thorough study of each individual case. He must not forget that, while some severe traumatisms produce mild symptoms, some insignificant traumata cause marked disturbances of the nervous system. The degree of the disability and the prognosis of the affection vary in each individual case. The recognition of the affection, the recognition of the influence of the accident upon its manifestations, finally the discrimination of a genuine malady from a simulated one—all these elements can be acquired only when the physician is properly prepared. In view of the practical importance of the subject, a continuous study of it is indicated.

FETID BREATH ("BROMOPNEA").*

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It is astonishing how many pople in the best walks of life suffer from bad breath without being aware of it, and how frequently this symptom is permitted to remain without attempting to remedy it. Often when advice is sought the patient is given a deodorant wash, advised to seek the services of a dentist or rhinologist, or treated for some gastrointestinal trouble, usually gastric fermentation or constipation. If any or all these measures bring no relief the patient is usually disgusted, leaves "doctoring" alone for a while, and then pays no more attention to this unhappy condition.

The conditions producing this unpleasant symptom are manifold; they may be found in the mouth, nose, pharynx, larynx, or lungs, or may be induced by gastrointestinal disturbances, by pulmonary, renal, or metabolic disease; even nervous disturbances produce this symptom.

Halitosis is the term formerly used to designate this condition alleged to be derived from the Latin *halitus,* breath, and the Greek *nosos,* disease. This term is poor etymologically, as well as clinically, as it is derived from two words from different languages, and, furthermore, all forms of fetid breath are not due to disease. I beg to suggest the term "bromopnea," to express the symptom of fetid breath; this is derived from two Greek words, *bromos,* stench, and *pnoe,* breath.

Bromopnea may have its origin (1) from the mouth, (2) from the respiratory tract, from the nose, nasopharynx, larynx, bronchi, or lungs, (3) from the stomach, (4) from contaminated gases being exhaled during expiration, the gases having become tainted by diseases of metabolism, renal disease, nervous disturbances, constipation, emotion, menstruation, or any condition which will alter the character of the gases entering the lungs through the capillaries of the pulmonary arteries.

All types of the trouble can primarily be divided into two classes, namely (1) one in which the contamination of the breath takes place after the gases enter the lungs, and (2) one in which the contamination of the gases takes place in the system before they enter the lungs. Those in the second class might be designated as suffering from true bromopnea (*Bromopnœa vera*), while the first type of fetid breath might be termed pseudo or false bromopnea (*Bromopnœa nota*). An example of true bromopnea would be the sour-apple odor in the breath of diabetics, while the stench accompanying angina tonsillaris would be an example of pseudo or false bromopnea.

In treating bromopnea all the etiological factors leading to this symptom must be considered. A careful examination of the mouth should be made and the teeth looked after, as carious cavities not only afford lodgment to food residue, which may be responsible for the fetor, but gangrenous pulps are frequently the cause of offensive odors. The teeth, however, are more often considered the cause of bromopnea than they actually deserve to be. The teeth should receive proper treatment at the hands of the dentist, and if they are the cause of the symptom the bromopnea will speedily disappear at the

*Paper read at the meeting of the Tri-professional Medical Society, New York, November 12, 1906.

completion of the dental treatment. If the teeth are in normal condition and properly cleansed, the gums should be carefully examined, as every form of gingivitis is accompanied by a more or less marked fetid breath, whether the inflammation is a simple ulitis or pyorrhea alveolaris. In mild forms of gingivitis chlorate of potassium or thymol and benzoic acid will act very happily.

℞ Thymol 0,25
Ac. benzoic 3,0
Tr. eucalypt. 15,0
Alcoholis 100,0
Ol. menth. pip. 1,0

M. S.—A teaspoonful in a glass of water four times a day as mouth wash (Miller).

If the gums are spongy and there is suppuration, the writer has had very gratifying results with Liq. aluminæ acet., well diluted, as a mouth wash. Permanganate of potassium is useful as a deodorizer, but this gives, of course, only temporary relief. Some recommend chlorine compounds, such as:

℞ Liq. chlori
Mellis .....āā 15,0
Aq. dest. 300,0

M. S.—Use as gargle.

The gingivitis present, however, must be treated and a strict regimen of oral hygiene observed, also the teeth cleansed, and every trace of salivary calculus carefully removed and the oral cavity kept alkaline by the use of bicarbonate of sodium or hydrated magnesia locally. An alkaline saponaceous tooth powder should be employed, one which contains no gritty substances like pumice or acid materials, like salicylic acid. It is difficult to recommend any of the preparations on the market, as no one but the manufacturer knows what they really contain. The writer finds the following very useful:

℞ Saccharini 0,12
Cretæ præcip. pulv. 30,0
Rad. irid. flor. pulv.
Saponis pulv.
Sodii bicarb. .....āā 8,0
Acid borici 4,0
Ol. gaultheriæ.
Ol. menth. pip. .....āā gtt x

Any suppurative condition, as parulis or necrosis of the maxillæ, will give rise to fetor, but these conditions are evident, and are only mentioned for the sake of completeness of the subject.

If any artificial teeth are worn, plates or bridges, stationary or removable, scrupulous cleanliness is necessary to keep the breath pure. It seems superfluous to mention these facts, but the writer has seen a number of cases of foul breath in people with edentulous jaws wearing well-fitting appliances, and the cause of the fetor was not discovered till they were told to remove their artificial teeth and the palatal surface was found covered with a thick, slimy coating of mucus and food residue; they had not taken out the plates for a period ranging from a week to a month, "as they fitted so well and gave no trouble." Sometimes artificial appliances are inserted over old roots, a most abominable practice, as these stumps fill up with food and mucus, producing a terrible stench.

A great deal could be written about inflammatory conditions of the mouth accompanied by bromopnea, as all the various types of stomatitis are productive of fetor; however, the treatment of these conditions, supplemented by mild cathartics, the free ingestion of water, and proper exercise will speedily terminate the disease and its objectionable symptom.

If the mouth does not reveal any condition which can be responsible for the fetor, the anterior and posterior nares, nasopharynx, tonsils, and larynx, as well as the various sinuses, should be examined, since diseases of any of these structures frequently produce bromopnea. Tonsillar crypts filled with secretions, cast-off epithelium, and food residue, should be sought for, as the stagnating materials may give rise to angina tonsillaris, which is accompanied by a most repelling odor. Sometimes inflamed conditions of the mucosa of the upper air passages will produce no other symptom than bromopnea, and here a nasal douche of physiological saline solution will act very beneficially. Indeed, the internal nasal bath, the snuffing up of lukewarm water, so that it runs into the mouth, as an adjunct to the daily toilet, is underestimated as a prophylactic measure. If any of these conditions are recognized, the patient in receiving medical treatment will of course get rid of the accompanying fetor. Sometimes, however, as in angina tonsillaris, the patient has not always acute pain, and the only symptom apparent is the bromopnea; therefore, all these conditions should be borne in mind.

Diseases of the respiratory apparatus often entail fetor, and beside the routine medicinal treatment, the use of a deodorant will be useful to mask the odor till reparative processes set in. Permanganate of potassium is very useful in these conditions. I strongly advise against the use of many of the deodorizing, perfumed troches and lozenges, as their preparation and ingredients are secret, and many of them, if used continually, will induce gastric disturbances. A pleasant deodorizing pellet which, if slowly dissolved in the mouth, will mask bromopnea, is composed of thymol, menthol, eucalyptol, vanillin, and saccharin, of each 0,001. This pellet is used extensively in Europe, but I prefer permanganate of potassium, though its use is not so pleasant.

Frequently gastric disease is accompanied by bromopnea. Hare, in speaking of the symptoms of acute gastric catarrh, says: "The tongue is also somewhat dryer than normal, and the breath slightly foul and hot." In chronic gastritis patients often complain of a stale, foul taste in the mouth (Eichhorst). Chronic gastritis, gastric dilatation, gastric ulcer, hour-glass stomach, are all conditions which are frequently accompanied by fetid breath, either constantly or periodically, especially in the morning. The treatment here, of course, differs with the disease and the removal of the cause will entail a disappearance of the accompanying bad breath. The above-mentioned conditions, accompanied by *fetor ex ore*, are those in which there is an emanation from the gastrointestinal tract or the air passages, and the exhaled air is contaminated in its course from the lungs till it is passed out by nose and mouth; they are all cases of pseudobromopnea. The conditions mentioned hereafter are those which alter the character of the gases (which become exhaled air) before they enter the lungs, constituting cases of true bromopnea.

Any condition which will affect the functions of the glandular system so as to prevent proper elimination of waste material through the ordinary channels, will also produce a change in the character of the gases in the blood entering the lungs, and a con-

tamination of these gases will give them a fetid character. This is true bromopnea. No class of conditions will produce this more frequently than diseases of metabolism and retention of waste material, as in constipation and renal disease. Hare, in speaking of the symptoms of uremia, says: "A very important symptom of uremia is the peculiar odor about the patient, which is quite characteristic, and which may be due in part to urea which is being liberated." The sour-apple breath in diabetes mellitus has been alluded to previously.

Constipation is more frequently the cause of true bromopnea than any other condition; this, in turn, is of course a symptom of some other underlying disorder. Many forms of indigestion entail constipation. When there is constipation present the materials thrown out by the mucous membrane and the undigested foodstuffs accumulate in the intestinal tract. The mass undergoes decomposition, and Nature, in attempting to establish an equilibrium, taxes other excretory glands to their utmost capacity. Not only are the gases entering the lungs abnormal, but other structures undergo pathological changes. The gum tissues become affected and break down more or less, and the result is not only true bromopnea, but that form of gingival inflammation which alone constitutes pyorrhea alveolaris (Riggs' disease). This can also be demonstrated in various cases of metallic poisoning where the gums become inflamed, though the poison has not been introduced per os, as seen in the blue gum line in lead poisoning. In many of these cases of constipation the skin assumes a darker color, showing that Nature is making every effort to rid the system of the obnoxious material. The treatment in these conditions is evident; it consists in the perfect ridding of the system of all matters foreign and objectionable, and the restoration of normal physiological function of the excretory structures, not only by drugs, but by inducing a change of habit as to diet, exercise, sleep, etc.; in other words, in establishing normal, physiological conditions. A point frequently overlooked is the free ingestion of water. Patients as a class drink entirely too little water.

A great deal could be written about the modification of the breath; indeed, there is no doubt that any condition altering the composition of gases of the blood will produce a different exhalation from the lungs than the normally expired air. However, time and space do not permit this, and the mere suggestion that bad breath is less often of strictly oral origin than is assumed is the object of this short paper.

That the breath is modified by altered physiological function is proven by the fact that many women during their menstrual period are subject to bromopnea, which symptom disappears after the period has passed. Often bromopnea exists during emotional or nervous excitation. This can hardly be termed a pathological condition, and still any deviation from the normal physiological equation belongs to the domain of pathology. My attention was first called to this matter when, some time ago, a friend told me he had noticed a peculiar odor in the breath of his partner during sexual intercourse when orgasm occurred. Also that this was only the case in passionate women, and that he did not derive full pleasure from coitus unless this odor was perceptible. I looked up the literature on the breath in emotion, and found Howe speaks of it and quotes the following case: "On the morning of the 23d May, Mrs. R., a lady of 45, was bitten by a pet dog in the arm. She was very much alarmed at the occurrence and fainted. I saw her an hour later, and, while examining the wound, discovered that her breath was very fetid. Having seen her very frequently before, without noticing anything abnormal in the breath, I questioned her concerning it. She stated that she had been in perfect health up to the time of the accident, and that her breath had not been affected before it. . . The suddenness with which the offensive breath develops in some cases may be explained by the fact that unusual nervous excitement induces a greater destruction of tissue than normally obtains, and before the intestinal glands can accommodate themselves to the increased labor, other organs must assist in getting rid of the obnoxious materials."

Bad breath arising from mental emotion is less amenable to treatment than any other variety, because it often depends on the will of the patient whether the cause shall be removed or not. There is no local fault which can be grasped or removed. The treatment should be directed to the general system, *i.e.* the irritating influences must be removed.

Dr. B. Talmey, in his book "Woman," quotes Monin's Précis elémentaire d'hygiène pratique, in which he says: "The woman's respiration at the time of menstruation has the odor of onions (?). Before and after coition the natural odor corporis of the woman is more intense. Two of the author's patients were reported to exhale an odor somewhat resembling that of onions immediately after the orgasm."

In presenting this short paper on fetid breath, the writer does not assume to bring forth anything new, but simply begs to emphasize the fact that systemic disturbances will not always produce general systemic symptoms, and that bromopnea, so frequently treated unsuccessfully as a condition *per se*, and often not treated at all, is frequently the signal of masked systemic disturbances.

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FORMS OF TUBERCLE BACILLI WHICH CANNOT BE COLORED BY ZIEHL-NEELSEN STAIN.

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In an interesting article in the *Beiträge zur Klinik der Tuberculosis,** Much describes a form of tuberculous virus which does not stain by the usual Ziehl-Neelsen method, but can be stained by a modified Gram stain. Another paper by Michaelides,† in the same publication, reaches practically the same conclusions except that the latter claims that there is a third form of tuberculous virus which stains by the Löffler-Giemsa method, but neither by the Ziehl-Neelsen nor the modified Gram.

The work of these observers having been done almost exclusively with tubercle bacilli of the bovine type, the following investigations were undertaken with a view of determining the presence and frequency of this tuberculous virus in connection with the human type of tubercle bacillus. In this work the modified Gram stain as described by Much was used. It had been noticed in previous work that

*Much: Uber die granuläre, nach Ziehl nicht färbbare Form des Tuberkulose-virus, Beiträge zur Klinik der Tuberculose, Bd. 8, H1.

†Michaelides: Uber eine durch die Ziehl-farbung nicht darstellbare Form des Tuberkelbacillus. *Ibid.*

tubercle bacilli were very infrequently found in the spleen of tuberculous guinea-pigs and this organ was especially investigated.

Guinea-pig No. 1.—Killed two months after subcutaneous injection with human sputa. Smears from the ulcer showed tubercle bacilli by Ziehl-Neelsen stain. Gram stain gave negative results for tubercle bacillus.

Smears from the non-caseous lymphatic glands showed tubercle bacilli by Ziehl-Neelsen and Gram stain. Gram stain apparently brought out more tubercle bacilli and also stained many fine and coarse granules. Smears from the tuberculous omentum showed tubercle bacilli by both stains.

Spleen presented a large number of tubercles to the naked eye; smears from this organ stained after Ziehl-Neelsen revealed no tubercle bacilli after prolonged search through many slides. Gram No. 1 and 3 stain showed few tubercle bacilli and many granules. Portions of this spleen were excised with aseptic precautions and incubated four days, smears were then made and stained by Ziehl-Neelsen and revealed a large number of tubercle bacilli; the bacilli were usually single and no clumps of parallels were noticed.

Guinea-pig No. 2.—Infected as number one and presented the same findings except that the incubated spleen was examined on the third day and showed tubercle bacilli by Ziehl-Neelsen method.

Guinea-pig No. 3.—Infected in the same manner. Smears from the ulcer stained by Ziehl-Neelsen method showed few tubercle bacilli. Gram No. 1 and 3 brought out many foreign organisms, but no typical tubercle bacilli. Sections from the tuberculous lung showed many tubercle bacilli by Ziehl-Neelsen and a few by Gram No. 3.

Sections from a non-caseous lympatic gland stained according to Ziehl-Neelsen showed tubercle bacilli. Sections stained by Gram No. 3 also showed tubercle bacilli.

Sections from the spleen stained by Gram No. 3 showed few tubercle bacilli and many granules. Sections stained according to Ziehl-Neelsen, though tubercles were numerous, only one was found to contain tubercle bacilli. Portions of this spleen were incubated and smears made after twenty-four hours, with negative results when stained according to Ziehl-Neelsen; smears stained by Gram No. 1 yielded numerous granules and a few non-typical tubercle bacilli. Smears made after forty-eight hours' incubation showed tubercle bacilli when stained after Ziehl-Neelsen method.

Sections from the tuberculous liver showed tubercle bacilli when stained according to Ziehl-Neelsen. Sections stained by Gram No. 3 showed more numerous tubercle bacilli and few granules.

Case of chronic pulmonary tuberculosis in a human subject.—Section from the lungs stained after Ziehl-Neelsen showed numerous tubercle bacilli and a few red granules. Sections stained by Gram No. 3 also showed numerous bacilli and a much larger number of granules.

Sections from the liver stained according to Ziehl-Neelsen showed an occasional tubercle bacillus situated in gray tubercle; Gram No. 3 presented the same findings.

Sections from the spleen showed numerous tubercles under the two-thirds lens, but only after prolonged search were a few tubercle bacilli demonstrable when stained by Gram No. 3, but numerous granules were present. Sections from the same block failed to show any tubercle bacilli when stained according to Ziehl-Neelsen.

Case of acute miliary extension from an old cavity in a human subject.—Sections through the miliary tubercles in the lung and stained according to Ziehl-Neelsen presented immense numbers of tubercle bacilli and a few red granules. Sections from the same block stained according to Gram No. 3 showed few tubercle bacilli and numerous fine and coarse granules.

Sections from the liver showed a few tubercle bacilli when stained either by Ziehl-Neelsen or Gram No. 3 method.

Sections from the spleen showed a large number of tubercles under two-thirds lens. Careful search through sections stained according to Ziehl-Neelsen revealed only one tubercle containing tubercle bacilli. Sections from the same block stained according to Gram No. 3 showed a moderate number of tubercle bacilli and numerous granules. Pieces of this spleen were incubated for three days, when smears stained according to Ziehl-Neelsen showed numerous tubercle bacilli.

Growing cultures of tubercle bacilli, when stained according to Ziehl-Neelsen, in addition to tubercle bacilli, showed a few granules. Smears from the same culture stained according to Gram No. 3 showed a large number of undoubted granules in addition to the bacilli.

These investigations show that the tuberculous virus frequently exists in some form that cannot be stained by our usual methods and which is capable of rapidly developing into the fully grown tubercle bacillus capable of being stained by the method of Ziehl-Neelsen.

It is hardly possible that the large number of bacilli found after incubating the spleen can be accounted for by rapid division of those that may be present in the tissue, and moreover single bacilli were the rule in the incubated tissue; it was further found that the spleen which had been incubating three weeks did not show any marked increase in the number over that of four days.

In drawing conclusions from the granules found, we are confronted with several sources of error, namely, the possibility of the presence of other Gram staining organisms, precipitated stain, and points of deeply staining chromatin; these errors were excluded as much as possible by cultural experiments and staining of control slides of normal tissue. An interesting point noticed in these investigations was that the Gram staining bacilli showed a much greater frequency of beading than the Ziehl-Neelsen stained bacilli.

These investigations open up an interesting field of work and will probably prove of utility in the study of negative sputa and other tuberculous products where the tubercle baccillus has hitherto been very difficult to find.

Extension of Carcinoma of the Cervix Uteri to the Paravaginal Tissue. Luigi Asseretto describes the examinations made of the tissues removed in twelve operations for carcinoma of the cervix. They were made to ascertain the usual method of propagation of the disease to the vaginal and paravaginal tissues. The author found that it generally occurred by extension of continuity into the submucous tissues of the paravaginal spaces. More rarely there were metastases to more distant parts by way of the lymphatics, or blood-vessels, or along the nerves. In general, the cancer was propagated along the lymphatics toward the vaginal orifice. Propagation by the blood vessels is rare. The author believes that recurrences are due to inoculation by fragments of cancerous tissue left behind after the operation. A practical conclusion is that we should remove all of the vaginal tissue that is possible, together with all the paravaginal connective tissue and fat.—*Annali di Ostetricia e Ginecologia*

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TYPHOID FEVER IN LATER LIFE.

ONE of the alleged compensations of advanced life is that, although the aged are predisposed, by reason of the senile retrograde changes, to certain serious and for the most part irremediable maladies, they are exempt from attacks of the acute infections common in youth. They are commonly believed to be immune against the acute infectious diseases, except those affecting the lower respiratory tract, typhoid fever especially being generally regarded as exceedingly rare in those past fifty. In the Monsall Fever Hospital, for example, during the decade from August 26, 1884, to August 26, 1894, of 1,217 admissions for typhoid fever there were but four of persons over 50 years of age, and in the London Fever Hospital during a period of twenty-three years only 1.4 per cent. of the cases of typhoid fever were in persons over 50. Manges found but 5 per cent. of all the cases reported to the New York City Board of Health in persons over 45 years old. Hamilton, however, who collected the statistics of the Health Departments of Chicago, Boston, and St. Louis, for the years 1897-1901, inclusive, found 369 deaths from typhoid fever of persons over 50 years out of a total of 3,885 at all ages, a percentage of 9.5. Of 829 cases of this disease admitted to the Johns Hopkins Hospital, Osler states that only 12 were in persons over 50, a percentage of 5.66.

In an article in the *American Journal of the Medical Sciences* for October, 1907, Arthur S. Hamilton presents a study of an epidemic of typhoid fever occurring in the Hospital for the Insane at Independence, Ia. There were 188 cases, 27 of which, or 14.3 per cent., were in individuals 50 years of age or over; 1 patient was 65, 2 were 71, and 1 was 78 years old. These figures are of value in showing that typhoid fever may occur in the aging and the aged, but they do not indicate the relative prevalence, since most of the inmates of the hospital were adults, very few being under 20 years of age. Hamilton studied more particularly the male patients living in two wards and two cottages in which the disease was especially prevalent. Of the 318 men in this part of the hospital, 65 contracted typhoid fever; 96 of the inmates were 50 years old or over and among these there were 9 cases of the disease. The average age of those who suffered from typhoid fever was 38.9 years. While unwilling to draw any positive conclusions from this small number of observations the author nevertheless asserts his belief that "the liability to typhoid fever is very little less from 30 to 40 than it is from 20 to 30, and that the liability from 40 to 60 is altogether beyond what one would gather from most statistics." There is a possible fallacy in these figures, however, which would make them inapplicable to the community at large. If the average individual over 50 years of age is immune against typhoid fever, his immunity is to be attributed probably to a previous attack or to a gradual strengthening of the resisting power by the production of antibodies, in consequence of the repeated ingestion of small doses of typhoid bacilli in early life. Typhoid fever may, indeed, attack a person a second time, but such cases are rare, most of them dating back to a time when aids to accuracy of diagnosis were wanting, so that many of the supposed second attacks might be explained by the occurrence of paratyphoid or of some other continued fever. In the case of the inmates of the Independence Hospital many had doubtless been there for a number of years, and so had been protected against the sources of contagion to be met with in the outer world. To make the statistics conclusive the length of time that the typhoid fever sufferers had been in the hospital should be stated.

Manges believes that typhoid fever in the aged is often overlooked because it then runs an atypical course, and Hamilton found this to be true in the cases he studied in the Independence Hospital. The prodromal period was lengthened, and the symptoms of this stage were mild or absent. The temperature curve in the established disease conformed to the classical type, the fever being markedly remittent, or even in some instances remittent. In most cases the temperature returned to the normal from the eighth to the eleventh day, though it did not always stay there. Chills and sweats seemed to be more frequent than in young persons, and disturbances of the circulation were, as might be supposed, very common. Respiratory complications were also, naturally, more in evidence, and so were disturbances of the genitourinary system. The mental condition of the patients was not, as a rule, seriously aggravated, and in some there was a distinct improvement in the psychic condition following the onset of the fever. Convalescence was tedious, being prolonged by persistent slight elevations of temperature occurring after the curve had reached the normal, and by pulmonary complications. The death rate, as might be expected, was high, though this might be attributed less to the age than to the depressed mental and physical state of the patients when attacked. Of the 27 patients 50 years of age or over, 6 died, giving a mortality of 22.22 per cent. It would undoubtedly be less in normal individuals of the same ages.

Hamilton's study of this epidemic is exceedingly interesting as a contribution to our knowledge of the course of typhoid fever in late middle life and old age, but we think, for the reason above given, that it is inconclusive as to the liability of those of advancing age to this disease. The statistics of fever hospitals and of Boards of Health regarding the age incidence of typhoid fever are all on the side of those who regard the disease as one of youth and early adult life, and while it is evident that the disease may occasionally attack those more advanced in years, we see no reason to revise the generally received opinion that age is a protection against this and other of the common acute infectious diseases.

PULMONARY TUBERCULOSIS IN IRELAND.

Consumption is reported to be so rife in Ireland that both there and in England public attention is being acutely directed to the matter. Exhibitions dealing with the disease, organized by the most prominent people of Ireland, have been and are taking place in the principal towns. At the exhibition which was held in Dublin some few weeks ago, various well known authorities on tuberculosis discussed the situation and suggested remedies for the existing deplorable state of affairs. Even the political parties are evincing interest in the subject, and one of the most conspicuous of these bodies has, by the mouth of its president, himself a medical man, declared its intention of inaugurating a crusade against tuberculosis. Again, in a lecture given in Belfast about two months ago, in connection with the exhibition, a Dr. David Lawson drew a graphic but melancholy picture of the spread and range of the disease. It is not as if the malady were extending slowly, its sweep is remarkably rapid, and unless steps are quickly taken to check its dissemination, affairs must go from bad to worse.

When the fact is borne in mind that every year large numbers of Irish immigrants land on these shores to make their home in this country, it will be understood that the matter must be of more than academic interest to us here. Indeed, the increase and spread of tuberculosis in Ireland is a question of grave and more or less imminent moment to Americans generally, and especially to those who live in the big manufacturing cities, to which the Irish now chiefly resort. It cannot but be recognized that Irish domestic servants alone must be in some instances a source of danger, for although all those who are suffering from the disease in a stage which can be readily diagnosed will be rejected at the port of entry, it must not be forgotten that the seeds of the disease may be present in many, and will flare up under favoring conditions. Dr. Lawson drew attention to this aspect of the question and mentioned the investigations conducted at the Phipps Institute in Philadelphia, where during the past three years nearly 4,000 cases of tuberculous disease had been treated. Careful records of the parentage of the patients have been kept, and it has been ascertained that in the case of one of the parents coming from Ireland the incidence of tuberculous disease was very considerably higher than when an Irish element was absent from the union. It is also said that similar results have been obtained from investigations made in New York.

It is somewhat curious to note how tuberculosis has increased in Ireland in a comparatively short space of time. In 1870, Scotland, with a death rate of 4.9, occupied the head place on the list as regards this disease; England came next with 3.3; whilst Ireland with a death rate of 2.4 was in the happy position of being in the lowest place. In twenty-five years the relative positions have altered wholly: Scotland has fallen to 2.1, England to 1.7, and Ireland's death rate has gone up to 2.9—not a very great increase, yet a real increase nevertheless.

The causes for this change for the worse, or, we may perhaps better say, absence of improvement, in Ireland are many. Bad housing is one cause, and unsanitary conditions in the rural districts is another cause, while, of course, the wholesale emigration of the flower of the race which has been going on for so many years cannot but have had an adverse influence on public health generally, including tuberculosis. Also, no regular crusade has ever been waged in Ireland against the disease. Both England and Scotland have taken the matter seriously in hand and neither brains nor money have been spared in the endeavor to cope with the situation. The results have been splendid. Ireland has been neglected, but there is no doubt that if similar efforts are put forth in that island as have been introduced in the neighboring countries, the decrease of consumption will be, at no distant period, as patent.

The Treatment of Pulmonary Disease by Means of Artificial Pneumothorax.

The idea of putting a diseased lung at rest by causing it to collapse as the result of the injection of a gas into the pleural cavity and therefore facilitating the processes of repair has found a number of advocates since Forlanini in Italy and Murphy in this country called attention to its possibilities, though the value of the method does not yet seem to be definitely established. This is possibly due to the fact that originally the contraindications to the procedure were not clearly understood and in some instances it was resorted to when there was little real prospect of its proving beneficial. The improvement usually requires a considerable length of time for its appearance so that in pulmonary tuberculosis, for example, disease of the second lung if at all advanced, or other complications such as intestinal involvement, serve to contraindicate this form of treatment. It has also been found preferable to repeat the injections frequently, admitting only a small quantity, less than 500 c.c., at a time rather than to attempt to cause more complete collapse at the first sitting. The presence of adhesions makes it more difficult to enter the pleural cavity and gives rise to pain, as they are gradually separated by the retraction of the lung, but according to Schmidt (*Münchener medizinische Wochenschrift*, December 3, 1907) it does not form a contraindication. This observer reports thirteen cases of pulmonary disease in which he injected sterile air, but it must be admitted that his results do not seem particularly encouraging and in only two instances was the improvement really noteworthy. At best, his results like those of most workers in this field, suffer from the fact that sufficient time has not elapsed to prove anything in regard to the permanence of the apparent cures effected, and his own conclusion is that in pulmonary tuberculosis the number of cases suitable for this form of treatment is very small, that the patients must be very carefully selected, and the treatment be continued for a very long time. In eight cases of bronchiectasis the results were quite unsatisfactory, but in three instances of aspiration bronchitis or pneumonia he attributes the recovery of the patients directly to the compression treatment. In general it may be said that the method has not altogether justified the hopes of its originators, though it is not impossible that a more careful selection of cases and greater experience in technique will cause an improvement in the statistics.

A New Method of Studying Spermatozoa.

The above title is hardly a correct one, for although the manner in which the method in question is applied is new, the principle involved is one that was used with great satisfaction by the microscopists of a generation ago. Before the days of the Abbé condenser and oil immersion objectives, and before the modern technique of embedding and staining tissues had been perfected, it was customary to resort to various devices for increasing the scope of the inadequate instruments that were the best then available. Since then these ingenious parabolic mirrors and prismatic reflectors have been found useless or unnecessary and the dark ground illumination that was so effective in displaying the beauties of diatoms or radiolarians is but seldom resorted to in zoological or medical work. The study of that fascinating but difficult object, the *Spirochæta pallida,* has caused investigators to resort to every possible aid that could be invoked, and a new form of dark ground illumination, representing a modification of the ultra microscope of Siedentopf and requiring a special form of substage and the use of the electric arc as the source of illumination, has been found very satisfactory for the purpose. Objects too small or too transparent to be visible by transmitted light are seen by the reflected rays as bright bodies against a black background and certain details not ordinarily evident are brought to view. The spirochetes and allied organisms have been thoroughly studied by this method, but we believe Posner (*Berliner klinische Wochenschrift,* December 16, 1907) has been the first to point out the advantage of using it in connection with the seminal fluid. Under these conditions the spermatozoa appear as silvery structures in motion on a dark field, and certain details seen with difficulty or not at all in fixed and stained preparations become plainly visible. Among these is the existence of a collar of protoplasmic granules surrounding the so-called middle piece and extending in a thinner layer over the tail also. This has already been described by several authors who regarded it as an occasional abnormality of the spermatozoan bearing it, but Posner considers that it is a normal structure. He found that it did not exist in the spermatozoa obtained by testicular puncture from a patient suffering from azoospermia. He accordingly suggests that by means of the dark ground illumination method evidence may be obtained in regard to the fertilizing power of the spermatozoa, information that under some circumstances might be of considerable importance.

Featural Surgery.

Men and women are continually twitching their features under the play of the slightest emotions, and the muscles so contracted may in time become permanently shortened, giving a fixed expression to the face. Thus we have a group of muscles which advance the lower lip in the median line, and are frequently brought into action, particularly when there is a feeling of more or less despondency. This advance of the lower lip is accompanied by a slight contraction of the orbicularis oris and the muscles of the angle, so that the corners of the mouth turn downward, giving the appearance of sadness. This display of emotion becoming a habit, the features are drawn out of shape by the overuse of the muscles, so that finally the angles of the mouth are deflected, whether the person be sad or glad. Miller, writing in the *American Journal of Clinical Medicine* for October, 1907, considers this to be one of the most frequent featural imperfections, and as a cure practises subcutaneous section of the muscles used to excess. The orbicularis oris, the muscles which elevate the lower lip, and those of the angle are sectioned subcutaneously through punctures made within the mouth. A cataract knife is entered within the angle of the mouth and is carried outward until it is beyond the bundle of muscular fibers, which may be felt with the fingers; the muscles of the chin are severed by passing the knife through the lip, traversing a fan-shaped area. By section, the action of the muscles is not overcome entirely, for they are too intimately connected with the skin; it is merely diminished, not destroyed. Miller found the operation to be of decided value in overcoming the faulty overaction of the muscles, and claims it to be of undoubted cosmetic value.

Radiotherapy in Renal Tuberculosis.

Experience has shown that tuberculosis of the kidney must be regarded as a surgical disease. None the less, although nonoperative measures offer so little in the way of encouragement they must be resorted to, either because the renal condition is only one phase of general tuberculosis, because it has become too far advanced, or because the patient will not consent to surgery. When this is the case the prognosis is very bad. Strümpel, for example, saying that the patients usually die within a few months or at most live but a year or two. Any procedure, therefore, that holds out any brighter prospects deserves consideration, and according to Bircher (*Münchener medizinische Wochenschrift,* December 17, 1907), the use of Röntgen ray fulfills this condition. He reports two cases, both of the patients being young women, in which operation could not be performed, in the one instance because both kidneys were involved and there was advanced tuberculous cystitis, and in the other in which one kidney was healthy because the patient refused her consent. In both cases the daily application of the Röntgen rays to the lumbar region during a period of a number of weeks apparently effected an arrest, if not a cure, of the disease. In one case the improvement had lasted three years without relapse; in the other there was a slight recurrence of symptoms at the expiration of two years which promptly subsided under a renewed application of the rays. Such results seem too much at variance with the ordinary course of the disease to be ascribable merely to the beneficial effects of the rest in bed, tonics, proper hygiene and diet, etc., that hospital treatment involves.

Blood Pressure as a Prognostic Sign in Eclampsia.

In cases of eclampsia in which either cerebral hemorrhage, pulmonary embolism, or edema of the lungs sets in after a single convulsion, a prognosis is easily given, as it is usually fatal. When these conditions do not occur, long-continued coma or its presence before a convulsion, a continued high temperature and leucocyte count, convulsions in rapid succession, a small, soft, rapid pulse, a markedly diminished amount of urea and urine, all warrant a bad prognosis; while, if conditions are reversed, the peril becomes more remote. In spite of these facts, the prognosis in each individual case is often uncertain. A more certain prognostic sign has recently been reported by Vaquez in the *Semaine médicale,* No. 11, 1907. He found that the blood

pressure in an eclamptic patient rose even before a convulsion, reaching its highest point just before the attack; when it remained high after the attack the case almost always terminated fatally, but if it came down to normal soon after, the prognosis was good, even though the blood pressure rose again before a subsequent convulsion. According to Vaquez the blood pressure of a pregnant woman varies between thirteen and fifteen centimeters (sphygmomanometer of Basch-Potain), increases slightly during labor, and comes down to normal soon after delivery. In eclamptics it rises to twenty or twenty-five centimeters, a condition which is confirmed by feeling the pulse and hearing an accentuated second aortic heart sound. If the sphygmomanometric reading is nineteen or twenty soon after the convulsion the prognosis is bad, while if it is ten or twelve it is good.

The Treatment of Anthrax.

In regard to the treatment of few surgical infections does so much disparity of opinion exist as is the case with anthrax. Many authorities, perhaps the majority, are in favor of more or less radical procedures whenever the lesion is in an accessible situation, and widespread excision of the pustule, extensive cauterization with the hot iron or chemical agents, and the application or injection of powerful antiseptics, are all warmly recommended. Others use no local treatment whatever, or advise merely local applications with suspension of the part and perfect quiet. That the average mortality of the infection is very high is shown by Sclavo's statistics collected in Italy, which gave 24 per cent. of deaths in over 24,000 cases treated in many different ways. Barlach has recently (*Münchener medizinische Wochenschrift*, 1907, No. 15) reported ten cases without a death in which very energetic cauterization with the thermocautery and incision together with the injection of tincture of iodine and local applications of bichloride were resorted to, while Creite (*Deutsche medizinische Wochenschrift*, 1907, No. 51) reports another series of thirteen cases in which the treatment consisted of absolute quiet with suspension of the affected member and wet dressings of aluminum acetate, also without a death. The latter author, from his review of the literature, reaches the conclusion that the more conservative treatment is just as effective as the other, while it does not involve the risk of disseminating the infection through the blood stream that attends incision or other active manipulation of the pustules. It might be added that Sclavo's serum has also been found efficient, for this observer reports 164 cases treated with serum with the mortality of 6 per cent.

News of the Week.

Fifth Pan-American Congress.—The next Pan-American Medical Congress is to be held in Guatemala City, on August 5 to 10, 1908. At this season of the year there is said to be but little rain and the heat is not excessive, as Guatemala City is situated on a plateau. The trip to the Congress and back will be managed by the Committee on Transportation, and excursion trips may also be made, in connection with the Congress, to Mexico or the various West Indian Islands. There will be no charges for transportation in the Republic of Guatemala. The Congress will be held under the presidency of Dr. Juan J. Orteaga, with Dr. José Azurdia as secretary. The secretary of the International Executive Committee is Dr. Ramon Guiteras, 75 West Fifty-fifth street, New York.

Harvey Society Lectures.—The fourth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine on Saturday evening, January 11, 1908, at 8:30 P. M., by Prof. Ernest H. Starling of the University of London. Subject: "The Chemical Control of the Body." All interested are cordially invited to be present.

London Suicide Bureau.—The report of the Salvation Army antisuicide bureau started in London a year ago shows that 1,125 men and 95 women applied to the bureau during the past twelve months. Most of these belonged to the middle classes, and more than 50 per cent. of the men attributed their distress to financial embarrassment or poverty, 11 per cent. to drink, drugs, and disease, and 21 per cent. to accidents, sickness, and other misfortunes. Two-thirds of the women were suffering from melancholia caused by poverty and the remainder from drugs and drink. The bureau was founded for the purpose of giving advice and encouragement, but no direct financial aid. Its managers estimate that about three-quarters of those who applied were diverted from their purpose.

Hospital Ship under Medical Command.—Acting under orders of the President, Secretary Metcalf has assigned Surgeon Charles F. Stokes to the command of the hospital ship *Relief*, which is being fitted out at the Mare Island (Cal.) Navy Yard with a full equipment for special duty with the battleship fleet. The *Relief* is to be placed in commission as soon as possible with a sailing master and crew from the merchant service.

Drug Clerks Scarce.—Although the salaries of drug clerks have risen almost fifty per cent. within the last few years, there is said to be a scarcity of applicants for clerkships owing to the more rigid requirements of recent legislation in regard to the licensing of pharmacists.

International Conference on Sleeping Sickness.—The Second International Conference on Sleeping Sickness, which was to have been held in November, will probably not convene until February in London. The delay is due to the request of the German government, which wishes to present the results of Koch's expedition in East Africa.

Dermatological Institute Fined.—The owners of a widely exploited "Dermatological Institute," which advertised its ability to make crooked noses straight, eradicate wrinkles, etc., were last week found guilty in the Court of Special Sessions of misdemeanor in practising medicine without registration and were fined $100 each.

Smallpox at Kingston, N. Y.—About eighty cases of smallpox, most of them mild, have occurred in Kingston, the infection apparently having been brought in by returning hop pickers from other parts of the State. All places of amusement, the public halls, and the schools have been ordered closed for two weeks, and one of the school houses has been converted into an emergency hospital. The mildness of the first cases rendered the diagnosis difficult and fresh cases occurred before the true nature of the disease was recognized.

Public Cigar Cutters a Source of Danger.—The German health officials are considering abolishing the devices for cutting off the ends of cigars that form a familiar part of the equipment of tobacco shops. It is alleged that many smokers make use of the instrument after having already placed the cigar in their mouths and therefore render possible the transfer of disease germs to other smokers.

Against Cigarettes in Michigan.—In the constitutional convention at Lansing a proposal prohibiting the manufacture and sale of cigarettes in Michigan was adopted, but has yet to pass a second reading.

"Outlook for the Blind."—The third number of the first volume of this admirable publication, which is devoted to promoting the welfare of the blind, contains among other valuable contributions an article by Dr. F. Park Lewis on "The Prevention of Unnecessary Blindness." The journal is edited by Charles F. F. Campbell, 277 Harvard street, Cambridge, Mass.

Typhoid Investigation in Trenton.—Under the direction of the Joint Health and Water Board Committee of Trenton, N. J., an attempt is being made to ascertain the origin of the recent typhoid epidemic in that city, by a house-to-house canvass by sanitary inspectors, who are investigating the source of milk supply, the consumption of raw osyters, etc.

Codification of Regulations of the Chicago Health Department.—The council committee on health has begun to legalize the rules of the city health department. It recommends for passage two ordinances, one codifying the present rules of the department for the care and prevention of contagious diseases, and the other providing for the handling of night soil.

Study of Speech Defects.—A special chair on stammering and other speech defects has been established at the University of Berlin. Professor Gutzmann, who has been appointed the first incumbent of the chair, says that at least one per cent. of German school children between the ages of six and fourteen stutter and that many more have other defects in speaking. Over 1,000 recruits are rejected annually by the military authorities on account of speech defects of one sort or another.

Vaccination Rule Sustained in Chicago.—The vaccination rule of the Board or Education of Chicago was recently upheld in the Circuit Court in the mandamus suit instituted by a citizen to compel the Board to admit his daughter, seven years old, to the John Fiske School, although she had not been vaccinated.

Confederation of Students' Societies.—The students of the University of Pennsylvania Medical School have formed an organization the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association. The various student societies elect members to a House of Delegates which transacts all the business of the association. An annual meeting will be held at which papers will be read. The organization is named "The Undergraduate Medical Association of the University of Pennsylvania" and already has over two hundred and fifty members.

Annual Report of Warden Happel of Cook County Hospital.—During the year 1907 there were 28,932 patients in the hospital, as compared with 27,957 in 1906. The average daily number was 1,145, the year before 999. The deaths in the county hospital numbered 2,370, in 1906 2,027. During 1907 the hospital treated 126 cases of deformities, 187 cases of appendicitis, 165 persons suffering from gunshot wounds, and 5,574 cases of infectious diseases. Mr. Happel expresses satisfaction with the work accomplished.

New Isolation Hospital in Chicago.—Bids for the erection of the new isolation hospital in Chicago were recently opened by the Department of Public Works. The total of the low bids was $41,263. The new hospital, which is designed for twenty-five beds, will accommodate the smallpox cases, leaving the present isolation hospital as a place of treatment for other contagious diseases, an institution which the city long has needed.

To Improve Service at Chicago Hospitals.—Agitation for the better administration of institutions for the healing of the sick and injured is the main purpose of a new organization which was recently formed and which will be known as the Chicago Hospital Association. The officers are: *President*, Asa Bacon; *Vice-President*, Charles T. Garrard, Illinois Charitable Eye and Ear Infirmary; *Secretary*, Anna L. Davis, Francis Willard Hospital; *Treasurer*, Dr. L. Ryan, St. Anthony's Hospital.

Sydenham Hospital.—The following adjuncts of the Sydenham Hospital have resigned: Drs. Richard Weil, Richard Lewisohn, Arthur Stein, Joseph E. Fuld, Dewitt Stetten, A. Richard Stern, and Ernst Danziger.

College of Physicians of Philadelphia.—At the annual meeting held January 1 the following officers were elected for the ensuing year: *President*, Dr. James Tyson; *Vice-President*, Dr. G. E. de Schweinitz; *Secretary*, Dr. Thomas R. Neilson; *Treasurer*, Dr. Richard H. Harte; *Honorary Librarian*, Dr. Frederick P. Henry.

St. Louis Medical Society.—At the meeting of this society held on December 28 the election of officers resulted as follows: *President*, Dr. Herman Tuholske; *Secretary*, Dr. C. E. Burford.

Coos County (N. H.) Medical Society.—This society elected the following officers at its meeting held in Whitefield on December 26: *President*, Dr. C. E. Hight of Groveton; *Vice-President*, Dr. E. R. B. McGee of Berlin; *Secretary-Treasurer*, Dr. F. W. Evans of Coos.

Marion County (W. Va.) Medical Association.—The following were elected officers at the annual meeting of this organization held in Fairmont on December 26: *President*, Dr. F. W. Hill; *Vice-President*, Dr. C. W. Waddell; *Secretary*, Dr. J. W. McDonald; *Treasurer*, Dr. W. H. Sands.

Jefferson County (Ala.) Medical Society.—The election of officers for this society held at the meeting in Birmingham on December 23 resulted as follows: *President*, Dr. L. W. Whatley; *Vice-President*, Dr. W. F. Black; *Secretary-Treasurer*, Dr. Arthur Toole, reelected.

Bates County (Mo.) Medical Society.—At the meeting held in Butler on December 19 officers as follows were elected: *President*, Dr. T. F. Lockwood of Butler; *Vice-Presidents*, Dr. Maud R. Agniel of Rich Hill and Dr. Rhodes Foster; *Secretary and Treasurer*, Dr. E. N. Chastain of Butler.

Howard County (Neb.) Medical Association.—The following officers were elected at the meeting of this association held in St. Paul on December 19: *President*, Dr. E. R. Fletcher of St. Paul; *Secretary and Treasurer*, Dr. P. M. Peterson of Danneborg.

Honor for Mr. Nathan Straus.—Mr. Nathan Straus, who has recently presented to several European cities milk pasteurizing plants, has been spending some time in Heidelberg demonstrating to visiting officials the workings of the outfit given by him to that city, and has had an audience with the Dowager Grand Duchess Louise, who expressed

her appreciation of his efforts to reduce infant mortality.

Dr. E. Franklin Royer has resigned as chief resident physician to the Municipal Hospital of Philadelphia.

Death of Professor Hoffa.—A cablegram received by Dr. Reginald Sayre of this city announced the death on Monday of this week of Dr. Albert Hoffa, the well-known orthopedic surgeon and professor at the University of Berlin. Professor Hoffa visited this country in 1904, when he was a guest of the American Orthopedic Association. At that time the Jefferson Medical College conferred upon him the honorary degree of doctor of medicine.

Obituary Notes.— Dr. Daniel S. Hardenberg of Jersey City died on January 1 in his sixty-eighth year. He was graduated from the Albany Medical College and served through the Civil War as assistant surgeon in the Fifty-ninth New York Volunteers. He had been a resident of Jersey City for forty years, but was compelled to give up active practice about five years ago owing to failing health.

Dr. F. Gordon Morrill of Boston died at Assouan, Egypt, on December 28 at the age of sixty-four years. Dr. Morrill was a native of Boston and was graduated from Harvard in the class of 1869. He was the son of the late Dr. Samuel Morrill and the father of Dr. Gordon N. Morrill of Boston. About six weeks ago he left Boston to spend the winter in Egypt, and his death occurred shortly after reaching Assouan.

Dr. George Dunsmore of St. Albans, Vt., died on December 29 of pneumonia at the age of seventy-nine years. He was born in Coteau, Que., and was graduated from Castleton Medical College in 1855, afterwards entering the University of Cincinnati, from which he was graduated in 1871. He had practised for many years in Burlington and St. Albans, and had been president of the Vermont Medical Society and the Franklin County Medical Society.

Dr. Daniel E. Bartlett of Seattle, Wash., died suddenly on December 19 at the age of twenty-nine years. He was a native of Cambridge, Mass., and was graduated from Harvard Medical School in 1904. He had been practising in Seattle for about a year.

Dr. Jesus Onate of Mexico City died on December 20 at the age of eighty-nine years. Dr. Oñate was the oldest practitioner in Mexico, having been engaged in active work for sixty-two years.

Dr. John D. Scott of Roanoke, Va., died suddenly on December 28 at the age of seventy-nine years. He had practised in Southwestern Virginia for fifty-nine years.

Dr. Parks L. Kabler of Hannibal, Mo., died on December 26 after a lingering illness. Dr. Kabler was born in St. Charles County, Mo., in 1853 and was graduated from the Missouri Medical College in 1879. He practised for the next eight years in Warren and Lincoln Counties and then removed to Hannibal. For many years he was chief surgeon for the Burlington Railroad and for a time was secretary of the Board of U. S. Pension Examiners.

Dr. Alva A. Hoag of Bridgeport died of pneumonia on December 30 at the age of forty-seven years. Dr. Hoag was born in Danesville, Vt., and was a graduate of the New York Homeopathic Medical College. He had practised in Bridgeport for twenty years.

Dr. John Y. Hoffman of Reading, Pa., was killed on December 26. He was forty-nine years old and was graduated from Jefferson Medical College in the class of 1880. He was at one time Prison Physician, later Coroner, and afterward City Treasurer of Reading.

Dr. Peter F. Shaw died at Mt. Bethel, Pa., on December 25. He was graduated from the Eclectic Medical College of Philadelphia in the class of 1886.

Obituary.

NICHOLAS SENN, M.D.

CHICAGO.

Dr. Nicholas Senn of Chicago died January 2, 1908, of heart disease and acute nephritis after an illness of ten weeks contracted in the high altitudes of South American mountains during his recent trip to that continent. He was born in the canton of St. Gall, Switzerland, October 31, 1844, and came to the United States with his parents in 1853, when the family settled at Ashford, Fond du Lac County, Wis. He was graduated from the Chicago Medical College in 1868 and then went to Munich for post-graduate study. Upon his return to Chicago he was appointed house physician of the Cook County Hospital. In 1869 he returned to Fond du Lac and entered practice there, remaining until 1874, when he went to Milwaukee. In 1884 he was made professor of surgery of the College of Physicians and Surgeons, Chicago; in 1890 professor of practical and clinical surgery, Rush Medical College. He was also professor of surgery, Chicago Polyclinic Hospital; professor-lecturer on military surgery, University of Chicago; he was American delegate to the International Medical Congress, Berlin, 1890, and Moscow, 1897, and delegate for the United States to the International Red Cross conference, St. Petersburg, 1901. During the Spanish war he was chief surgeon of the Sixth Army Corps, and at the close of the war was brevetted Brigadier General. Dr. Senn was an unusually voluminous writer and made many important contributions to medical literature.

ROBERT WILLIAM TAYLOR, M.D.,

NEW YORK.

Dr. Robert W. Taylor of this city died suddenly on January 5, of disease of the heart complicating nephritis, from which he had suffered for several years. He was born in London, August 11, 1842, but came to this country in early life. He studied medicine here, and was graduated from the College of Physicians and Surgeons with the class of 1868. He early turned his attention to dermatology and venereal diseases, and achieved an enviable reputation in that field. He was formerly professor of diseases of the skin at the Woman's Medical College, New York, and at the University of Vermont, Burlington. He was also consulting genito-urinary surgeon to the City (Charity) and Bellevue Hospitals, and consulting surgeon to the French Hospital. He was the author of "A Practical Treatise on Sexual Diseases of the Male and Female," the third edition of which appeared in 1905. He was a member of the Medical Society of the County of New York, of the American Medical Association, the New York Dermatological Society, the American Dermatological Association, the American Association of Genito-Urinary Surgeons, and the New York Academy of Medicine.

Correspondence.

CHLOROFORM ANESTHESIA.

To the Editor of the Medical Record:

Sir:—I was much interested by Dr. J. D. Bryant's article on "Some Unclassified Dangers in Anesthesia" and the discussion of the same in your issue of December 28.

It is possible that what I may write on the use of chloroform as an anesthetic may be of but little value, but as I have, during my entire professional life, in which I have, perhaps, done a full share of surgery in a village of this size, and commanding patients from the surrounding territory, used chloroform only, and never with any dangerous effects, it is but natural that so far as my experience teaches chloroform should be thought by me to be the best anesthetic. The safety of any anesthetic depends upon the care and attention given during its administration. The administration of all anesthetics is accompanied with danger, and this must be reduced to the minimum by proper administration. I wish some one would collect statistics of the number of deaths from "ether pneumonia," as I believe that if these cases were charged to the death rate of ether it would be equal to that from chloroform. In the administration of all anesthetics in our large hospitals there is too much attention paid to complicated apparatus for giving it, and not enough to the patient. I use always an Esmarch's inhaler, with two thicknesses of gauze over it. If one will place such an inhaler well down over the nose and mouth there will be a perfect, free, and pleasant respiration. The supply of air is ample. That is the first point in anesthetic safety. Now with the inhaler in place, begin your anesthetic by dropping on the inhaler where its ribs cross in the center, and not in any other place. This is the second point in administration, for by thus dropping in one place the evaporation of the chloroform is regular because from the same point of supply.

Now the next point is the regulation of the dosage of chloroform, and this you get by the rapidity or slowness with which you drop. Begin by dropping very slowly, and gradually increase the rapidity of dropping, as the confidence of the patient is gained, watching closely all the time the pulse and respiration until the patient comes under its influence, often without a struggle. Of course when the desired state of anesthesia is obtained then the dosage is less or more, as indications require, and you do not overwhelm the patient by an overdose of chloroform or underdose of air. By this method the dosage can be measured almost as accurately as that of medicine given by the mouth, because you know the number of drops given and that there is enough air obtained and a uniform evaporation of chloroform from a given point.

If for any reason it is desired to interrupt the anesthesia, remove the inhaler entirely and replace it again as before, with the inhaler well down on the nose and mouth in a fixed position, and begin anew as above described. Given in this way one will be surprised at the small amount of chloroform used and the quiet with which the patient will pass under its influence. If the patient is nervous I often let him breathe for a few minutes with the inhaler in place before dropping any chloroform at all, and then very slowly at first to gradually accustom him to it and to allay fear.

I never put vaselin on the face as a protective and never have burning of the skin. The dropper is an ordinary ground glass, grooved stoppered drop bottle of the drug stores.

I am fully aware that the majority of the profession in this country does not use chloroform in surgery, but I think if administered carefully it will come into more general use in America, as it is in Europe, where during a year's stay I saw ether used only twice, once at St. Thomas' Hospital, London, and once at Leopold's in Dresden by an American interne.

T. M. McIntosh, M.D.

Thomasville, Ga.

OUR LONDON LETTER.

(From Our Special Correspondent.

THE HOSPITAL FUNDS: KING EDWARD'S, THE SUNDAY—BRADSHAW LECTURE AT R. C. S.: TUBERCULOSIS OF GENITO-URINARY APPARATUS—PNEUMOCOCCUS INFECTIONS—DR. H. JACKSON—OBITUARY.

London, December 20, 1907.

On Monday there was a meeting of King Edward's Hospital Fund for the purpose of awarding grants for the present year. The Prince of Wales, as president, took the chair and in an interesting speech gave a summary of the year's work and touched on some of the chief recommendations. It is the duty of the president to nominate the members of the committees to which so large a part of the work is delegated, and his Royal Highness decided to proceed on the principle of appointing each member to only one committee, but thought the honorary secretaries should have the right to attend all committees but to vote only on the one to which they belong. Under the Act of Parliament which gives the constitution on broad lines, the president pointed out that the council is to be reconstructed every year and therefore "what is decided to be best now is not an immutable law for future generations, or even for the year after next." The resolutions that had been prepared and were duly passed will no doubt be formally confirmed in January next. The Prince reported that the sum recommended for distribution this year reached £120,000 and on two or three items in the grants offered a word of explanation. A very exceptional sum of £15,000 had been allocated to Guy's Hospital and he hoped this would not be misunderstood, for the rebuilding of the out-patients' department had been delayed to the detriment of the poor. The King's Fund would certainly in the end contribute £10,000 and it was proposed to pay it all at once instead of spreading it over several years. The work would be completed the sooner and the men employed on the building would be benefited by the work provided for the winter months. A grant of £6,000 to King's College removal fund brings up the amount devoted to that object to £22,000. The amalgamation of the Orthopedic Hospital had been completed. The negotiations between the Throat and Ear Hospitals were continuing. The fund had made a liberal offer to the Hampstead Hospital to amalgamate with the Northwest London. One other subject of the speech is important, viz., the late period at which certain hospitals issue their annual reports and accounts. The committee proposed that they should not be later than April 15 in future, so that the statistics of the Fund need not be delayed, and the president thought it not unreasonable to expect three and a half months to be sufficient for any hospital to prepare its report.

On Tuesday the annual meeting of the Sunday Fund followed, when the Lord Mayor occupied the chair. The report drew attention to the large number of country patients treated in the metropolitan hospitals—estimated at 25 per cent.—and announced that an appeal would be made this year for contributions toward their cost. The distribution committee recommended awards to 159 hospitals, 57 dispensaries and 27 nursing institutions, the total sum thus divided amounting to £68,134. The adoption of the report having been moved and seconded, the Rev. L. S. Lewis as a representative of the Church Antivivisection Society wanted to know why the Battersea Hospital received no grant, and the Lord Mayor having said for reasons which seemed good to the committee, Mr. Lewis declared it was only because remedies produced by vivisection were not permitted, and he moved that before adopting the report the question be referred back to the distribution committee. A little scene followed on the president requesting him to confine himself to facts, and the amendment found a seconder. The Lord Mayor read a resolution of the committee expressing the opinion that the Antivivisection Hospital did not comply with those general conditions which should govern any hospital designed to give the best form of relief to the sick poor and therefore could not be recommended for a grant. Mr. Sydney Holland protested against the introduction of ill-feeling by one who should be a harbinger of peace and said the hospital was a miserable one, miserably built and miserably equipped, and its work was not based on considerations for the benefit of the patients. The amendment was eventually put and twelve hands were held up for it, after which the original resolution was of course carried by an overwhelming majority.

The Bradshaw lecture at the College of Surgeons was delivered by Mr. Rickman Godlee and naturally afforded some contrast to that at the College of Physicians, of which I have previously given you some account (Medical Record, December 5). Mr. Godlee's subject was "Prognosis in Relation to Treatment of Tuberculosis of the Genitourinary Organs" and he treated it with great perspicacity, as it has presented itself to him in the course of his extensive experience. At the conclusion he said if anyone murmured that he had only given the views of a single observer, and a statement directly opposed might be obtained across the street, he could only reply that it would have been a simpler but not easier task to collect views of all kinds bearing on the subject. Anyone seeking such he referred to Cornet's gigantic work, "Die Tuberculose," in which is a bibliography of fifteen pages devoted to the urogenital apparatus. As to the value of such knowledge,

he remarked that it is no satisfaction to a patient to know, *e.g.* the mortality of nephrectomy or the percentage of those who have shown signs of tuberculosis in the opposite kidney after the operation. He rather wants to know his own particular chance whether he keeps or parts with his kidney. But such knowledge is not to be got through statistics. Each case must be judged on its own merits and it is only experience that can justify an approximate answer. The lecture closed with the remark that if he should be the means of preventing one unnecessary nephrectomy or of preserving to one poor wretch the internal secretion of his testicles the Bradshaw bequest and his own efforts would not have been spent in vain. This remark will indicate to you pretty plainly that Mr. Godlee holds rather a conservative view of the subject, and indeed the whole lecture may be regarded as a protest against the operative furor that has seemed to possess some surgeons. It seems at times to be forgotten that the human body offers a distinct resistance to the attacks of the tubercle bacillus. The resistance may be less strong than in the case of many injurious influences, but is not to be altogether disregarded. In certain forms of tuberculosis the modern tendency is to regard it as curable, though in the case of a single focus the usual teaching is to extirpate it, provided that no evidence of a deposit elsewhere can be obtained by the most exhaustive examination. In the case of twin organs the question arises whether there is a chance of the fellow escaping even although it appears unaffected, and further what is the probable effect on the system if one twin be left and afterwards is attacked. These and other points were discussed by Mr. Godlee with an acumen and fullness of experience worthy of his position. It may interest your readers if I add a few words about these Bradshaw lectures. They were endowed by the widow of Dr. W. W. Bradshaw, D.C.L., who practised some time at Reading and Andover. Mrs. Bradshaw left a sum of money in consols to provide an annual lecture at the Royal College of Surgeons and another at the Royal College of Physicians. Mr. Godlee in some prefatory observations remarked somewhat cynically that while consols and the two colleges exist the name of Dr. Bradshaw will be revived every year in London, and such a foundation seemed the simplest method of securing a limited immortality. He added that he could imagine the doctor, looking down from an exalted state of purity and wisdom and watching those who undertook the lecture rack their brains for ideas. To this one might well retort that at any rate Mr. Godlee himself has not racked his brains in vain.

The Medical Society of London has had a discussion on pneumococcus infections. It was introduced by Professor Osler, who said the death rate from these infections had steadily increased for the last ten years in this country, but not at so great a ratio as in American cities. He thought we were face to face with a most serious situation in preventive medicine, which deserved organized study as much as tuberculosis or cancer. Inflammation of the lungs was the chief but not the only disease due to pneumococcus, of which there were varieties in morphological characters and virulence. Many people carried about a potential infection of the upper air passages. In some cases meningitis had spread from the accessory sinuses. Pleurisy and empyema occurred from direct infection from the lungs. Cardiac cases might arise from the lung or independently. Peritonitis was the most fatal of abdominal infections. Meningitis was the third in order of frequency among cerebrospinal inflammations. Pneumococci were present in the mouth and throat of a considerable proportion of healthy persons and atypical strains were more common in such persons than in pneumococcic patients. The latter expelled the pneumococci in coughing and talking, as also do those with catarrh. From such they might be acquired by those attending them. A complete disinfection of the mouth was almost if not quite impossible, but the professor recommended a wash containing alcohol, sodium bicarbonate, sodium chloride, and glycerine. He discussed the question of having separate wards for pneumonia. To this it was objected by a subsequent speaker that there was no evidence of cases arising *de novo* in hospitals where there was free ventilation and the sputa were sterilized. Professor Osler also described cases of pneumococcic infection without any local lesion, and the president, Dr. Kingston Fowler, also described such a case, his impression being that it was an infection of a lower grade. Another speaker traced acute inflammation of the mediastinum to the same cause. Dr. West remarked that complications were rare in pneumonia and perhaps there was a tendency to group together affections which were not associated with the organism as closely as at present was supposed.

Dr. Rolleston said pneumococcic peritonitis was rare, but attracted attention because it was primary. It was most often met with in young females, and so a suggestion had been made that the organism might enter through the Fallopian tubes. The onset was sudden, but the symptoms soon subsided and diarrhea, suggesting typhoid, succeeded or if prolonged, a condition resembling tuberculous peritonitis. Dr. Poynton spoke of the infection in children under twelve, suppurative pericarditis being the most frequent form, and the difficulty of diagnosis extreme. In 100 cases found in the post-mortem room only five had been discovered during life.

Mr. Sydney Stephenson described the part played by the organism in diseases of the eye and its appendages.

A marble bust of Dr. Hughlings Jackson has been placed in the hall of the National Hospital for the Paralyzed and Epileptic to commemorate the services of the "father of British neurology" to that institution.

Dr. Ed. L. Fenn, J.P., Consulting Physician to the Colchester Hospital, and formerly in practice for many years at Richmond, where he was also physician to the hospital, died on the 8th inst. He retired in 1903, but continued to take a great interest in medical matters and in the local institutions and societies he had served. He was a King's College alumnus and presided at the dinner in 1892, in which year he became a member of the Royal College of Physicians, his earlier qualifications dating 1865. He was in his sixty-eighth year.

Dr. George H. Graham, who had been for five or six years medical officer to the Electrical Department of the East London Children's Hospital and assistant physician to the Leaman's Hospital, has died at the early age of forty-seven, to the great regret of his colleagues and host of friends. He had studied the Light treatment under Finsen. His electrical work was based on a thorough knowledge of the science involved.

Progress of Medical Science.

Boston Medical and Surgical Journal December 26, 1907.

The Results of the Chemical Investigation of Tumors.—S. P. Beebe analyzes the work of recent years along the lines indicated in the title of his paper. So far as concerns inorganic elements, we find sulphur, phosphorus calcium, potassium, and sodium. Actively growing neoplasms contain a much larger amount of sodium and potassium and a much smaller amount of calcium than do old necrotic growths. As to proteid constituents, Petry has shown that carcinomata are relatively richer in nucleoproteid and poorer in globulin and albumin than control normal tissues from which the growths had originated. The large quantity of nucleo-proteid found in a tumor corresponds with the histological structure, and a large quantity of non-coagulable nitrogen is the logical sequence of the autolytic processes of such tissues. The distribution of nitrogen in the tumor extract varies within wide limits, depending upon the state of the tissue as regards necrosis and also depending upon the method of preparing the extract. No definite toxin has yet been isolated from tumors. Beebe has observed in the course of immunization experiments that extracts of tumors, and particularly necrotic tumors, have a much greater toxic effect upon the animal inoculated than extracts of normal organs, and a few direct experiments show that a much smaller amount of tumor nitrogen is required to produce a fatal result than is required from extracts similarly made from autolyzed normal organs. Tumors also contain hemolytic substances. As to enzymes the author states that a demonstration that a malignant tumor contains an enzyme capable of absorption in the body fluids, and capable of marked digestive effect upon other tissues under physiological conditions, would be a contribution of definite value, and is something we now lack. It may be that the toxic properties of tumor extracts are in large part a function of the hemolytic and heterolytic activity.

Strain as a Causative Factor in Infectious Arthritis.—J. D. Adams presents a series of six cases, women, all dressmakers, presenting evidences of infectious arthritis in the hands as shown by deformities, pain, tenderness, swelling, and incapacity for work. All the cases show many common factors, as vocation, seat of disease, sequence of joints attacked, symptoms, and relief treatment. All the patients worked in good surroundings and on very heavy goods. It will also be noted that the symptoms were first noted in the thimble finger, and the histories show a progressive infection of the joints in right hand before any symptoms occurred in the left. The onset was more or less insidious and symptoms not especially acute, but in all the cases intensified greatly with use [illegible] pain,

intermittent in character, was more in the nature of a soreness rather than the throbbing pain of an infection. The symptoms were not affected to any extent by sudden changes of temperature. In all the cases there was absolutely no indication of any trouble in any other joint in the body. As to treatment, details of which are given, the author found the best results to follow from the omission of all meats from the diet, forced use of liquids, sodium benzoate, gr. v. t. i. d. to neutralize acidity (as all showed a hyperacidity of the urine) and daily baking. The results were most gratifying. The counterirritation of the heat produced the usual hyperemia to a marked degree, and all the cases showed a gradual diminution of pain, with a return on failure in systematic baking. The cases pursuing the treatment conscientiously for two months had entire relief from pain, with ability to return to work.

New York Medical Journal, December 28, 1907.

The Oxychloraniline Reaction for Free Hydrochloric Acid.—This test, which is described by R. L. Pitfield, depends on the oxidation of aniline oil or aniline hydrochloride in the presence of potassium chlorate by a mineral acid or acid salts. By inverting a cold enameled spoon over a capsule containing chyme and slightly warming the capsule a few drops of moisture are collected in the spoon. To this fluid a few drops of the following are added and the whole treated to evaporation: Aniline, 10 c.c.; alcohol, 50 per cent.; 10 c.c. potassium chlorate to saturation. By this method all danger of charring is obviated. This is quite an advantage, and is a simple and convenient method. The few drops of moisture contain hydrochloric acid if it was present in a free state in the chyme. But strong heating of the chyme must be carefully avoided, since not only free but combined hydrochloric acid will be liberated and a reaction for free hydrochloric acid obtained when none was present. So gentle warming is always indicated. Hydrochloric acid seems to be as volatile, or more so, than water. The author explains in detail the chemical reactions which take place in the test which, if positive, reveals a bluish deposit on the spoon. He considers the test a more delicate one than the Günzberg test (vanillin and phloroglucin), but less delicate than the resorcin sugar test of Boas.

Silver Nitrate in Gastric Diseases.—H. Weinstein recommends the use of this remedy in all irritative conditions of the gastric mucosa characterized by increased secretion, hyperacidity of the gastric juice, nausea, vomiting, and pain. It is useless in the mere neuroses. He usually administers it in solution in doses of one-quarter to one-half a grain three times daily on an empty stomach. For half an hour after it is taken no food or drink should be swallowed. The author rarely finds it necessary to continue its employment for a longer period than three weeks, although in rebellious cases it may be kept up for a month without danger of producing argyria.

Neurasthenia; Its Relation to Personality.—By the term personality, J. E. Donley understands a name for a concrete, individual, living unity of thinking, feeling, willing, doing in relation with an ever-changing environment. Neurasthenia is a perturbation, disintegration, or instability of personality. It consists in a certain type of abnormality, a certain disharmony in this concrete, subject-object relation, which, as explained, is merely the philosophical way of saying that a particular living individual shows a special type of maladjustment to his environment. "Neurasthenia" and "disintegration of personality" are simply convenient ways of *naming* and *describing* this concrete process. Consequently neurasthenia has in it an element of the personal equation or the personality of the individual patient. The symptoms which are at the bottom, those of chronic fatigue, can be classified as sensory, motor, psychic, and somatic. The standpoint of the writer is that of a pragmatist, which is that method which turns away from abstraction and insufficiency, from verbal solutions, from bad *a priori* reasons, from fixed principles, closed systems, and pretended absolutes and origins. It turns toward concreteness and adequacy, toward facts, toward action, and toward power. Pragmatism is used also in a wider sense and means a certain *theory of truth*. Regarding neurasthenia psychologically as a maladaptation of a thinking, feeling, willing, acting individual to his environment, pragmatism gives a rational basis for all the procedures of psychotherapy. By its inclusion of environment as an integral part of its conception it suggests the beneficial influence of changed outward circumstances with the stimulation of diverse interests and purposes arising therefrom; for of the profound importance of environment students of comparative psychology are becoming increasingly aware. And again, insisting, as it does, that the psychological instability of neurasthenia is or may be bound up with or determined by diverse sorts of physiological change, this hypothesis makes a place for physiological chemistry, and demands a careful study and treatment of the physical substratum in every case. Finally, although the systematic study of abnormal psychology by physicians is confessedly in its infancy, none the less this study has already borne fruit of such practical value that it should not be looked upon askance, because, like every science; it deals with abstractions. For surely, abstractions are quite useful, if only they be capable of pragmatic justification.

Journal of the American Medical Association, January 4, 1908.

Headache.—From a study of 1,700 cases, in which special attention was given to the family and personal history, habits, diet, pathological and physiological conditions, etc., F. Coggeshall and W. E. MacCoy arrive at the following general conclusions: 1. A neuropathic diathesis is an essential condition of the occurrence of almost all the chronic headaches of the class discussed, the only exceptions being cases in which other causes exist to an excessive degree. 2. In the great majority there is, in addition to the neuropathic diathesis, some local irritation to the nervous system, often manifesting itself by the headache alone. 3. A minority of patients are sufferers from anemia or toxemia, in addition to the neuropathy, which may manifest itself in no other subjective symptom of importance. 4. The more marked the neuropathic tendencies, the less need be the degree of anemia or toxemia, and *vice versa*. 5. In some cases, often the most severe ones, a local irritation of the nervous system is reinforced by a toxemia. 6. There are a number of what may be called composite headaches in which two or more local irritations combine to intensify the sufferer's neuropathic tendencies and cause headache. The authors find the location of the headache the most useful single symptom for pointing out its cause. They class headaches as (1) frontal, (2) temporal, (3) occipital, (4) vertical, (5) parietal, (6) circular (band around the head), and (7) general headaches. Mixed forms, however, are not uncommon and very severe headache tends to become widely diffused. The true type in such case is often indicated by the point of greatest tenderness to pressure, or, better, by the point where it began. The local irritations are approximately, in the order of their frequency: : 1. Irritation from the eyes, (a) frontal, usually due to astigmatism; (b) occipital, often due to muscular imbalance; (c) temporal, muscular imbalance or hypermetropia; (d) or deep seated in the eyes from retinal irritability. 2. Irritation from the nose and accessory sinuses, usually frontal, more liable to be unilateral than in those due to eyestrain and confined often to a definite limited spot over the root of the nose or on one side of the forehead. These are apt to be morning headaches, and the pain is often duller and deeper seated than that from eyestrain. 3. From pelvic disorders in women; vertical when due to disease of the lining or body of the uterus and occipital when due to retrodisplacement, posterior parametritis, or ovarian disease. These headaches are practically always bilateral and may be aggravated or relieved by menstruation. 4. Gastric headaches, from indigestion, hyperacidity, hypoacidity, etc. These are practically always frontal or bilateral and more commonly located in the upper portion of the forehead than are headaches due to the eyes or nasopharynx. 5. Irritation from the teeth, especially decayed teeth in the upper jaw and the eye teeth and third molar in particular. They are usually temporal when from diseased molars and frontal when from the eye tooth. They are frequently unilateral. 6. A few cases due to the ears, sometimes to the mere presence of wax or stoppage of the Eustachian tube. They are almost the only parietal headaches from local irritation and may be unilateral or bilateral. The characteristic headache of anemia is vertical. Toxemic headaches are commonly described as of the whole upper part of the head or as bandlike or constricting. Their occurrence has frequently a relation to the time of absorption of the poison, and it may correspond with some nervous distribution, as of the occipital or upper division of the fifth. Migraine is treated of at some length, and the authors consider it practically always due to eyestrain in neuropathic individuals, but the immediate cause of the attacks may be recurring conditions of toxemia which would not have this effect in a less neurotic individual. Special directions are given as to thoroughness in the examination of the eyes in this condition, as well as regards the treatment. The authors consider the removal of local irritation the fundamental part of the treatment in headache, though general measures, tonics, hygiene, gymnastics, etc., as well as medicinal agents are not to be neglected.

Trichopathophobia.—Under this title, A. D. Mewborn includes all cases of mental worry about the hair,

on account of its loss, its color, or change of color, and its excessive or misplaced growth. Women worry most over loss of hair, and it, or the fear of it, may become a veritable obsession in neuropathic or oversensitive society women. Two cases are reported. In men the worry over loss of hair is oftenest seen in those who have acquired syphilis; this is especially seen in young men with a mild form of pityriasis, and they should be told in such a case that syphilis has probably nothing to do with their loss of hair. In such cases active local treatment will do much good. Mewborn notes the various conditions in which loss of hair occurs and gives the reasons for assuming a special toxin in the blood acting on the hair bulbs in the cases of loss of hair after the infectious disease. Sabouraud's explanation of the causation of baldness through the agency of microsporon of Malassez is given, but Mewborn considers his theory of an underlying infection with the seborrhea microbe in alopecia areata as insufficiently supported by facts and holds that in most of the cases of this affection the causes are unknown. Worry over the color of the hair is not very common, but certain shades of red sometimes give distress to certain persons. Worry over the hair growing gray sometimes troubles women and leads to the use of hair dyes to their hurt. It rarely, however, becomes a monomania. Various forms of dermatophobia occur, among which Mewborn mentions trichotillo mania, caused by prurigenous sensations in the hairy parts of the body and leading to an irresistible impulse to pull out the hair. Worry over superfluous hair growths in young women is the most serious form of trichopathophobia with which we have to deal, and all dermatologists have had such cases. In neuropathic females it may develop into insanity, and such a case is reported by the author. Precocious, perverted, or arrested activity of the sexual functions may sometimes be a cause of this condition, and there is good evidence of the influence of the ovarian secretion on the growth of hair. In conclusion, Mewborn mentions the occasional worry of young men over a deficiency of facial hair supposed to indicate a lack of virility. In such cases suggestion and counterirritation may have good effects.

Placenta Previa.—I. L. Hill considers placenta previa scarcely a rare complication among multiparæ. In 1,800 cases, 87 per cent. of them multiparæ, and averaging over four pregnancies apiece, he found the ratio to be 1 in 225. The mortality, he thinks, has been underestimated by some recent authorities, and while it may be as low under the most favorable conditions as 3 or 4 per cent., with the general average of all practitioners, he thinks it must still be as high as 8 per cent. The fetal death rate has not decreased with the maternal mortality, and is still 40 or 50 per cent. Hemorrhage occurring in the last third of the gestation period is presumptive evidence of placenta previa, and the cervix should be immediately dilated to allow of a diagnosis by the finger, and if placenta previa exists the uterus should be emptied at once. Tamponade of the cervix and vagina is a useful preliminary step. The Braxton-Hicks version controls hemorrhage well and is safest for the mother, but not so satisfactory for the child. When the condition of the cervix is such as to permit rapid delivery without serious tearing, version or forceps may be employed, packing the uterus and vagina if bleeding continues after the third stage. In a patient with long rigid cervix, complete placenta previa and viable child, and if the surroundings are favorable, cesarean section should be chosen in the interest of the child. Hill thinks that the future progress in the management of placenta previa will have to be directed to decreasing the fetal mortality.

The Lancet, December 21, 1907.

Status Lymphaticus with Reference to the Administration of Anesthetics.—A fatality from anesthesia is recorded by H. H. Rubra and A. C. Brown, whose patient was a boy of seventeen years about to undergo an operation for submucous resection of the nasal septum. The patient exhibited the lymphatic temperament, but did not seem at all nervous. The heart sounds were rather distant, but respiration with open mouth was free. The nose was almost occluded. The patient was seated in the half-upright position and an injection of cocaine and adrenalin made under the mucosa previous to giving the general anesthetic. Equal parts of ether and chloroform were administered through the Junker inhaler with the face-piece. The mixture to the amount of two drams was slowly given for eight minutes. At the end of this time the patient was apparently in good condition for going ahead with the operation, and the initial incision was made in the mucosa. He moved slightly and then it was noticed that he was very pale. Immediate measures for resuscitation were begun, but in two or three minutes the pupils dilated and remained fixed and the boy died. Autopsy showed a large thymus, somewhat enlarged spleen, and mesenteric glands, while the lymphoid nodules in the gastric mucosa were large and well marked out.

Bone Abscess Caused by an "Intermediate" Bacillus, Allied to Bacillus Typhosus.—F. G. Bushnell's patient was a man of forty-one years, admitted to hospital for acute suppurative periostitis on the front and center of the left tibia, the size of a bantam's egg, which had come on during convalescence from a fever diagnosticated as typhoid and which had been referred to the eating of shell-fish. Incision of the abscess was followed by prompt healing. Examination of the pus revealed the presence of a bacillus, which seemed intermediate between that of true typhoid and that of paratyphoid. A full account of its reaction properties is given in the original paper. The author notes that the occurrence of a bone abscess in paratyphoid fever is rare and unrecorded.

Gastric Ecchymoses, Gastrostaxis, and Simple Gastric Ulcer.—E. C. Hart considers these conditions with reference to their possible relations to the hemorrhagins and mucolysins. Gastrostaxis refers to a condition in which there is an oozing of blood from the gastric mucosa which is not obviously related to or accompanied by ulceration. The term is objectionable because it only labels a symptom, for oozing of blood from the gastric mucosa occurs in many conditions. So it is clear (1) that if there is a new disease characterized only by gastric oozing without ulceration a new name must be found for it; and (2) that the term "gastrostaxis" is only applicable as that of a symptom that is common to many diseases. The many conflicting views at present held as to the pathogeny, and possible relations of, gastric ecchymosis, gastrostaxis, and gastric ulcer may be thus epitomized. (1) Gastric ecchymosis and gastrostaxis are in no way related to each other or to gastric ulcer. (2) The cause of gastrostaxis without ulceration is quite unguessed at, the cause of ecchymosis being equally obscure. (3) The occurrence of gastric ulcer depends on a breakdown of normal immunity of mucosa against autodigestion through destruction of antipeptic bodies caused by thrombosis, embolism, necrosis, or what not. This, Weinland's theory, endows gastric mucosa with fixed antipepsin, which is supposed normally to immunize gastric epithelium against digestion. (4) Autodigestion plays no part whatever in the production of ulcer (Ball). The author then appends a long list of conditions in which gastric oozing may occur and presents a diagram showing their mutual relations. He believes that many of these are really manifestations of a general blood disease characterized by the presence in the blood of certain bodies called hemorrhagins and mucolysins. He declares that (1) no other theory as yet put forward brings into line the apparently incongruous clinical manifestations we often find, such as ulcer without hemorrhage, hemorrhage without ulcer, perforation without hemorrhage, etc.; (2) that it is useless to expect to find in the deadhouse conclusive evidence of cause and effect of hemorrhage and ulcer beyond that of extravasation; (3) that the present-day medical treatment of the conditions must be modified; and (4) that the use of surgery in combating a profound toxemia must be carefully restricted. The evidence he adduces in favor of the truth of his theory is of two kinds: (1) Direct evidence of cytolysis in man in these forms of capillary hemorrhage into and from gastric mucosa and of ulceration afforded by (*a*) blood examinations and (*b*) the remarkable results of treatment by serum and by vaccines that he has undertaken with the object of producing immunity in such cases against the specific toxins. (2) Collateral evidence of (1) cytolysis in man in other diseases characterized by gastrostaxis or other hemorrhagic fluxes or other signs of cytolysis, such as hemolysis, afforded by (*a*) blood examinations and (*b*) the encouraging results of serum and vaccine therapy that others as well as myself have undertaken with a view to the production of immunity in such cases; and (2) cytolysis in the animal kingdom afforded by (*a*) the artificial production of cytolytic phenomena in certain animals and (*b*) the establishment of immunity in such animals by (*c*) the preparation of sera and vaccines.

British Medical Journal, December 21, 1907

Tuberculosis in Childhood and Its Relation to Milk.—The paper of J. McCaw relates particularly to local conditions in his own city, Belfast. In the year 1900 26.10 per cent. of 827 bed patients in his hospital for children were tuberculous. In an experience of twenty years the author has rarely met with a case of pulmonary tuberculosis in which the decrease follows the adult type and attacks the apex of the lung. He recalls numbers of cases of children with extensive disease of the glands of the neck, in whom suppuration went on until it seemed

that the glands must have become completely eliminated, and yet in not one of them did any secondary infection of the lungs take place, and they are to-day apparently as strong, vigorous, and healthy as the best of us. How comes it, if these children were flooded with virulent human tubercle bacilli, that their lungs escaped? It seems that they were suffering from bovine tuberculosis, and that this protected them from the human type of the disease. To carry this argument to a logical conclusion: If this theory be correct, then human serum, or tuberculin R., should be beneficial when used for surgical or bovine tuberculosis; and *vice versa*, bovine serum should be beneficial in tuberculosis of human type. Much evidence could be adduced in support of this contention, and his own experience, but more especially the experience of surgeons, is that in limited tuberculous lesions of a surgical nature the injection of tuberculin R. is followed by favorable results. The author further notes that the disease appears by preference at the time of life when cow's milk is the main or almost main article of diet. It is very largely of the surgical type—that is, it is chiefly glandular and almost certainly due to the bacillus of bovine tuberculosis which has been taken into the system in food. To limit the ravages of the disease the following rules are advised: Notification of all births within twenty-four hours, complete control of the milk supply by the State medical inspector of school children and school premises, housing reform, segregation of advanced cases and compulsory notification of the disease.

Has a Purin-Free Diet any Special Therapeutic Value?—C. Watsons declares that there is no special therapeutic value in a purin-free diet in the class of cases in which such a diet is often prescribed, but that the undoubted benefit which follows in certain cases is to be explained along other lines. Purins, says the author, are constructed on the base CN, *e.g.* uric acid, xanthin, hypoxanthin, adenin, and guanin. These are present in certain articles of diet. Meat and meat extracts contain a large amount of purins; similarly, certain glandular organs, such as the pancreas and liver, are rich in purins. They are also present, though in smaller amount, in many vegetable foods—for example, beans, lentils, and oatmeal—and they are relatively abundant in some accessory articles of diet, notably tea and coffee. Purins which are taken in the diet are spoken of as exogenous purins. Purins in the tissues exist chiefly in combined form in the nuclei of cells and in the muscular tissues. Xanthin and hypoxanthin occur in muscle extracts, adenin is yielded chiefly by decomposition of nucleic acid present in thymus, and guanin is derived mainly from the pancreas. The purins in the tissues are spoken of as endogenous purins in contrast to the exogenous purins of the dietary. Purins exist in the urine chiefly in the form of uric acid, xanthin, hypoxanthin, and adenin. Roughly speaking, about one-half of the purins in the urine are derived from the ingested food (exogenous purins), the remaining half being derived from tissue metabolism (endogenous purins). The author does not believe that there is at the present time any evidence that the purin bases *per se* are in any way more intimately concerned in the actual causation of gout and gouty disorders than is their ally, uric acid, which has now by common consent been discarded. Gout is probably due to intermediate purin metabolism, arising from a defect in one or more organs, as revealed by the inability to produce the ferment or ferments required, as a result of which proper oxidation of uric acid does not occur and the latter consequently accumulates in the tissues in the manner observed in gout.

Septicemia with Interesting Reactions to Treatment and Recovery.—The patient of C. F. Fothergill was a young house surgeon who became infected at the root of a finger nail during an operation for the removal of a septic tuberculous hip. Four days later evidence of general sepsis appeared, and under gas the tissues around the nail were incised. Later it became necessary to amputate at the metacarpopharyngeal joint. Antistreptococcus serum had been freely given. Several syncope attacks came on, but the patient responded to brandy stimulation. Later it was noted that the rate of coagulability of the blood was above normal, and citric acid and lemon syrups were given freely. The patient finally recovered, though some shortness of breath on going up hill remained, probably due to some myocardial degenerative change from which recovery was incomplete. The especial features about the case are: (1) The extreme virulence of the infection. (2) The general symptoms became progressively worse until the use of the antistreptococcic serum, which almost at once acted beneficially. (3) Brandy was without doubt of great benefit when given in the two syncopal attacks, but, when the patient was given brandy four-hourly, it was found to raise both temperature and pulse, and made him more restless, and was therefore discontinued. (4) That, although the temperature and pulse had been normal or subnormal for nineteen days after the abatement of the general symptoms, yet, when the amputated finger was examined, it was found that not only had all the cartilage of the interphalangeal joints been eroded, but the bone was also eroded into the cancellous tissue, thus proving that temperature and pulse in such a case are no guide to active disease, but that the presence of continuous pain is far more important. (5) The citric acid mixture proved of wonderful efficacy in lowering the abnormally high coagulability of the blood, and seemed directly responsible for improving the character of the pus, and bringing about the rapid and thorough recovery of the wound.

Berliner klinische Wochenschrift, December 16, 1907.

The Roentgen Ray Treatment of Sweating Hands.—Kromayer says that while excessive sweating of the hands or feet can often be controlled by the use of remedial applications, such as chromic acid, formalin, hydrochloric acid, etc., there are some cases in which these fail. Sweating hands are not only a source of discomfort to their possessor, but a positive detriment from the social and business standpoint. The observation that the hands of Roentgen ray workers become very dry led him to investigate the effect of the rays in cases of this sort. While it has not been found feasible to make use of the Roentgen rays as a means of destroying superfluous hair owing to the fact that in order to secure permanent atrophy of the hair follicles too great alteration of the skin as a whole must be caused, it appears that the functional activity of the sweat glands may be abrogated without undue risk. The rays must be applied in considerable intensity, however, and in order to do this safely it is necessary to have an exact means of quantitative control. This the author has found can best be accomplished by measurement of the amount of electrical energy consumed by the tube while in operation, and he gives the details of the method in which this principle may be applied in practice. Three cases of excessive sweating of the hands cured in this way are described.

Münchener medizinische Wochenschrift, December 17, 1907.

The Treatment of Inoperable Carcinoma of the Uterus with Acetone.—Gellhorn describes the method of treating inoperable cancer of the uterus by means of applications of acetone which was devised in the St. Louis Skin and Cancer Hospital in order to overcome the fetor of the discharges, but which was found to have the additional properties of checking hemorrhage and reducing the amount of the discharge. The ulcerated surface is first thoroughly curetted, the resulting cavity is carefully dried, and one or two tablespoonfuls of pure acetone are poured into it through a cylindrical speculum, the patient's pelvis being elevated. The anesthesia is discontinued, but the patient remains in position for from fifteen minutes to half an hour. A strip of gauze is introduced into the cavity through the speculum, the patient is brought into the horizontal position, the speculum is removed, and the lower portion of the vagina and the vulva are washed with sterile water and dried. Twenty-four hours later the gauze is removed from the vagina and on the second or third day the patient leaves her bed. The after-treatment begins on the fifth day and is ambulatory. The patient lies with elevated pelvis and a cylindrical speculum is introduced into the wound cavity. It is then filled with acetone and held in position by the patient herself for about a half hour. The treatment is painless and requires no anesthesia, but in allowing the excess of fluid to escape at the expiration of the time it is necessary to protect the vulva and perineum from contact with it. The applications at first are made three times a week, but the intervals are gradually lengthened. It is advisable to repeat the curetting every one or two months. The treatment is only palliative and is not expected to influence the progress of the disease in the deep seated tissues, but it is very effective in reducing three of the most trying symptoms, the fetor, discharge, and bleeding.

Gangrene of the Scrotum Following the Application of Iodine.—Hanasiewicz says that in acute inflammations it is wiser to avoid external measures tending to induce hyperemia, as the latter, if too great, may cause such an increase of exudation as to lead to severe circulatory disturbances and perhaps gangrene in the tissues that are already the seat of injury. As an instance in point he cites a case of extensive gangrene of the scrotum due to the local application of tincture of iodine. The patient was a man of nineteen whose physician gave him the direction to paint the scrotum with iodine for an

inflammatory swelling of both testicles. The iodine was applied repeatedly with increase of the pain and swelling, so that when he came under the author's observation the scrotum was the size of a child's head and was greatly discolored. In the course of the next few days the skin of the entire anterior surface became gangrenous and sloughed away, the condition becoming so serious that for a time castration was considered advisable. The granulations became healthy, however, and the denuded area was successfully covered by means of Thiersch skin grafts.

Deutsche medizinische Wochenschrift, December 5, 12, and 19, 1907.

The Treatment of the Accessory Sinuses of the Nose.—Lublinski discusses the indications for radical operations in disease of these cavities and counsels a conservative attitude, saying that radical measures are resorted to much oftener than is really necessary. Inflammatory conditions of the antrum of Highmore ordinarily yield to internal treatment with possibly the local application of adrenalin and cocaine to relieve the swelling about the opening of the cavity and so permit free drainage. Occasionally aspiration and irrigation through the wall of the middle or inferior meatus may be necessary. In chronic inflammation due to dental caries drainage through the diseased alveolus or through the inferior meatus is indicated. The radical operation should be performed only in old neglected cases with bone caries and in which the patient wishes to obtain relief at all costs. Suppuration in the frontal sinus demands free drainage; resection of the anterior extremity of the middle turbinated body is rarely necessary, and still less so the radical operation. In chronic cases it must be performed, however, if the eye or brain are in danger. The ethmoidal and sphenoidal sinuses most frequently are involved, together with one or the other of the two large cavities. The general principles of treatment and indications for operation are the same as for these. Diseases of the sphenoidal sinus require particularly careful management, as it of all the sinuses involves the greatest risk to the eye and brain.

The Correction of Crooked Noses.—Joseph says that out of 235 nasal deformities that he has corrected by operation 23 cases were instances of lateral deviation. From the standpoint of treatment such malformations may be divided into those in which only the cartilage is at fault and those in which the bone is also involved. For the correction of the former type he has devised an operation which he terms "attraction" of the cartilage. To effect this he exposes the lateral edge of the pyriform sinus through the vestibular portion of the nostril on the side opposed to that toward which the nose inclines. The periosteum is elevated and with a bent drill a hole is bored through the edge of the bone. Two holes are also bored through the deviated cartilage and a heavy silk thread is passed through all three of these. This is tightened sufficiently and tied so as to bring the cartilage to the midline. The thread is removed at the end of three or four weeks. In cases of bony deformity a wedge-shaped piece with its apex upward is excised from the nasal process of the superior maxilla on the side opposite to the deviation. On the other side a linear incision is carried through the bone in the same direction. By pressure with the thumbs it is then possible to correct the deformity and any tendency to recurrence may be avoided by the application for a part of each day of an apparatus fixed to a circular bandage passing around the forehead and provided with pads with screw adjustment for regulating the pressure. The advantages of these operations are that they are performed intranasally so that no external scar remains, while the after treatment is shorter than when an external operation is done.

The Ophthalmo-Reaction for Tuberculosis.—Kohler tested this method on one hundred and seventy-five patients. In one hundred and sixty-nine of this number the clinical diagnosis was pulmonary tuberculosis; in five it was doubtful, and one was not tuberculous. The reaction was performed with 1, 2, and 4 per cent. solutions of old tuberculin, of which one drop was placed in the eye. Of the one hundred and sixty-nine clinically certain cases 51 per cent. of the patients reacted to the 1 per cent. solution. To the 2 per cent. solution used after the 1 per cent. had failed, 41 per cent.; to the 4 per cent. solution used after the other two had failed, 8 per cent. Of the entire number, 4.7 per cent did not give the reaction. Of the five doubtful cases, two patients reacted to the 1 per cent solution, three to the 2 per cent. solution. The patient who clinically was surely not tuberculous reacted to the 4 per cent. solution. The author considers that it may be accepted that about 95 per cent of tuberculous patients give the reaction, but that it has not yet been determined whether the method is a reliable diagnostic measure, particularly in early cases, as Schenck and Seiffert have reported positive reactions in 50 per cent. of nontuberculous cases. It is also uncertain to what extent the reaction occurs in tuberculosis of organs other than the lung.

Resection of the First Costal Cartilage for Incipient Pulmonary Tuberculosis.—Kausch reports what he believes is the first instance of resection of the first costal cartilage for pulmonary tuberculosis. The procedure is founded on the theory of Freund and Hart that in many cases of pulmonary tuberculosis there is a congenital or acquired abnormality of the first rib, which renders it less movable than normally and therefore restricts the aeration of the pulmonary apex. The patient was a woman of fifty-three years who had distinct signs of a pulmonary lesion at the right apex and gave a positive reaction on the injection of 0.003 g. of tuberculin. The first rib was exposed under ether anesthesia and two cm. of the ossified cartilage removed. After this had been done it was seen that the rib which before had been motionless now moved with respiration. The patient recovered promptly from the operation and both subjectively and objectively her condition was markedly changed for the better. The author admits that the time since the operation (three weeks) is too short to permit of any conclusions and also that the method must be tried on a considerable number of patients, but he reports the case as showing that the procedure is technically not difficult and involves no great risk to the patient.

The Serum Treatment of Tuberculosis.—Elsaesser, who has used the Marmorek serum in twenty-five cases with rather indifferent results, comes to the conclusion that treatment by inducing active immunity is to be preferred to the method of passive immunity, and he recommends for the purpose the Neutuberkulin (bacilli emulsion). He believes that in many of the cases in which success has been ascribed to the Marmorek serum, particularly in bone or joint tuberculosis with suppurating sinuses, the good effect has been due to the streptococcus antitoxins also present in the serum rather than to any bodies protective against tuberculosis. He has treated 353 patients with Neutuberkulin and he regards it as better than the Perlsucht Tuberkulin, which he has employed in fifty cases. The tuberculin treatment should be employed more widely than it is both for pulmonary tuberculosis and for the lymphatic and bone tuberculosis of children, since by this means, combined with good care, cures may be effected at home in many early cases. Hospital treatment in cities can advantageously be carried out by this method in patients in the second and third stages, if not too far advanced. In this way the sanatoriums would not be so overcrowded and a larger number of patients in the early stages could be received, while their sojourn in the institutions could also be greatly shortened. Relapses would also be lessened and readmission of the patients be rendered more infrequent.

The Treatment of Mastitis by Hyperemia.—Heinsius and Lissauer discuss this subject at length, basing their conclusions on twenty-four cases in which the method was applied with very satisfactory results. Fifteen of these were hospital patients, while the other nine were seen in private practice. The authors agree with other observers who have found the method of value, and their experience showed that early cases of mastitis could be aborted by means of the cups. The pain was relieved and the length of treatment was much reduced. If fluctuation was detected the suction was repeated once or twice before making an incision and in several instances the suppurative process receded. In the others a very small incision, 1 or 2 cm. in length, sufficed, and consequently the cosmetic results were excellent, since no serious deformity of the breast was caused. In many cases the infant could be nursed again after the inflammatory process had subsided. The only drawback to the method is the demand that it makes upon the physician's time, since it as yet seems unwise to trust its management to the nurses. A great advantage, however, is that since by its intervention mastitis is to a large extent robbed of its terrors, less opposition to nursing is likely to be encountered among the better classes.

The Use of Leeches in France.—In the course of a paper before the French Academy of Medicine, Professor Grimbert recently stated that the Central Pharmacy which dispenses supplies to the public institutions in Paris and the Department of the Seine annually furnished 12,000 leeches for use in the hospitals.

Book Reviews.

Populär Psychiatrie des Sokrates Redivivus. Gespräche über den kleinen Unverstand. Von Dr. H. Schäfer, Oberarzt a. D. der Irrenanstalt Friedrichsberg in Hamburg. Würzburg: A. Stuber's Verlag (Curt Kabitzsch), 1907.

The characters represented in the dialogues, besides Socrates, are a college professor of psychiatry, a physicist, and an asylum director. Among the thirty-six topics learnedly discussed are: Memory and judgment, insight into guilt, suicide in students, satyriasis and nymphomania, child love, perversion, who is the insane one? etc. The book is entertainingly written.

Surgery, Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume II. With 572 Text Illustrations and Nine Colored Plates. Philadelphia and London: W. B. Saunders Company, 1907.

The second volume of this system continues the good impression made by the first and shows no falling off in substance or in form from the highly satisfactory matter presented in the initial installment. The first two chapters on diseases of bones and fractures are by Drs. Edward H. Nichols and Daniel N. Eisendrath respectively and comprise about a third of the volume, with 219 excellent illustrations. Both articles are extremely practical and the important subject of the treatment of fractures is discussed in an especially detailed manner. The adoption of separate sections on the surgery of the joints (Dr. Edward H. Nichols and Dr. Robert W. Lovett) and on orthopedic surgery (Dr. Robert W. Lovett), separated by two other chapters of considerable length, has involved a certain amount of arbitrary subdivision of these closely allied branches, particularly in regard to tuberculous disease of the hip and spine, but as Dr. Lovett is the author of the clinical portion of the former article and of the whole of the latter there is no overlapping and the only criticism that can be made is that convenience of reference suffers somewhat by this arrangement. Dr. Eisendrath also contributes the chapter on dislocations, and the one on the surgery of the muscles, tendons, and bursæ is by Dr. John F. Binnie. The surgery of the lymphatic system is written on by Dr. Frederic H. Gerrish and that of the skin and its appendages by Dr. John A. Fordyce. The last third of the volume is taken up by the surgery of the nervous system. The first chapter on this subject relates to the pathology of the surgical disorders of the nervous system and is by Dr. William Spiller. Dr. George Woolsey has two chapters, one on the surgery of the nerves and the other on the surgery of the spine. Neurasthenia, hysteria, and insanity as they occur in connection with trauma are considered by Dr. F. X. Dercum, and Dr. John C. DaCosta has written a chapter on surgery among the insane. As is evident from this summary of its contents, the volume includes topics of much importance and their discussion has been entrusted to competent authorities.

A Manual of Orthopedic Surgery. By Dr. Augustus Thorndike, Assistant in Orthopedics at the Harvard Medical School; Assistant Visiting Surgeon to the House of the Good Samaritan; Assistant Orthopedic Surgeon to the Children's Hospital; Fellow of the American Medical Association, the American Orthopedic Association, the Massachusetts Medical Society, etc. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1907.

This admirable little book contains four hundred pages and one hundred and ninety-one illustrations. It is divided into five parts. Part I. comprises the antenatal deformities, errors of development of the skeleton or of the nervous system, fetal bone disease, accidents of birth from obstetrical paralysis or intracranial hemorrhage with spastic paralysis. Part II., deformities due to the action of external forces on growth, like weight-bearing, improper restraint from clothing, unequal or asymmetrical muscular development as in flat-foot. Part III., the diseases and injuries of the bones and joints, excepting those of the fetus. Part IV., deformities from acquired diseases of the nervous and muscular systems. Part V., a technical description of the use of plaster-of-Paris, and of the way to make, fit, and use some of the orthopedic appliances.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VI., 1907.

The sixth volume of reprints of articles written by workers connected with this institution opens with a description of the buildings and copies of the addresses delivered at the opening of the laboratories by Dr. C. E. Holt, Dr. W. H. Welch, President Butler of Columbia, and President Eliot of Harvard. The remainder of the volume is made up of thirty-eight reprints relating to various scientific topics.

A Text-book of Mental and Sick Nursing. Adapted for Medical Officers and Nurses in Private and Public Asylums. By Robert Jones, M.D., B.S. (Lond.), F.R.C.S. (Eng.), F.R.C.S. (Lond.), Resident Physician and Superintendent of the London County Council's Asylum, Claybury, at Woodford Bridge, Essex; Late Resident Physician and Superintendent, Earlswood Asylum, Surrey; Lecturer Upon Mental Diseases at the Westminster Hospital Medical School; Late Lecturer on Mental Diseases at the West London Post-Graduate College and the London Polyclinic; President of the Medico-Psychological Association of Great Britain and Ireland; Late President of the Section "Psychological Medicine," British Medical Association; Knight of Grace of the Order of the Hospital of St. John of Jerusalem. With an Introduction by Sir William Job Collins, M.D., M.S., B.Sc. (Lond.), F.R.C.S. (Eng.), M.P., D.L., J.C., Vice-Chancellor of the University of London; Honorary Secretary of the League of Mercy, and President of the Asylum Workers' Association. London: The Scientific Press, Limited, 1907.

The title of this little volume is descriptive of its intended use, and the comprehensive titles and positions of the writer, without personal acquaintance with him, leads the reviewer to examine it with more or less confidence as having been written with serious consideration of an important subject. The book is based on lectures delivered by the writer at Claybury Asylum, and the writer modestly asks that it may serve as a notebook during demonstrations and lectures, interleaving it for the purpose, and as an auxiliary to other text-books. The writer's apparent ideal of a mental nurse is one skilled in general nursing who has selected mental nursing as a specialty. The old classification of mental disorders is retained, but the book will be found by nurses both useful and convenient.

Manual of Physiology and Clinical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry, Toxicology, and Pediatrics in the Long Island College Hospital; Author of "Medical and Pharmaceutical Chemistry." Third Edition, Revised and Enlarged. With Fifty-one Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907.

This little manual is intended as a guide to the ordinary clinical examination of the urine, gastric contents, blood, feces, and milk. The chapter on the urine takes up about half of the book, and is a most satisfactory piece of work; it contains all that the practitioner requires on the subject. The section on the blood is inadequate; at the present day both physicians and students require much more than is given here. With this exception the book admirably fulfills its purpose.

Treatment of the Diseases of Children. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital; Attending Physician to the New York Infant Asylum; Attending Physician for Children, Sydenham Hospital, New York; Assistant Attending Physician to the Babies' Hospital, New York; President of the American Pediatric Society, etc. Fully Illustrated. Philadelphia and London: W. B. Saunders & Company, 1907.

The appearance of books on treatment is a healthy sign of the times; it is a necessary reaction from the therapeutic nihilism which was so threatening a decade ago. The author of the present work truthfully says: "A few great teachers of medicine have done an incalculable amount of harm by precept and example in their attitude toward therapeutics. Because they were or are unable successfully to treat disease they assume that it cannot be done. Thus therapeutic doubt, using the term therapeutics in the broad sense, has been in the past boasted of by men considered clever." The volume is written specially for the general practitioner, and is not intended either for the specialist in children's diseases or for the undergraduate student. Dr. Kerley's book contains all that a physician is likely to look for; it is practical, it embodies the results of the author's own experience, and it is so clearly and forcibly written that it is impossible for anyone not to understand the author's meaning. Among the most valuable parts of the book may be mentioned the introductory chapter, the section on nutrition and growth, in which the subject of infant feeding is fully discussed, and the chapters dealing with instructions for the summer, and drugs and drug dosage. The prescriptions are written out in full, and are unusually accurate.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twentieth Annual Session, Held at New Orleans, La., December 17, 18, and 19, 1907.

THE PRESIDENT, DR. HOWARD A. KELLY OF BALTIMORE, IN THE CHAIR.

Perinephritic Abscess Following Parturition.—Dr. J. SHELTON HORSLEY of Richmond, Va., reported three cases that he had operated upon, and called attention to the necessity for early diagnosis in order to give the patient the benefit of an early operation, as all statistics on this subject showed that the mortality of this disease increased as the operation was delayed. He laid stress upon the occurrence of pain in either flank a few weeks after parturition, even in cases that underwent a comparatively aseptic delivery. The bending of the body to the affected side, stiffness of the spine, slight limp in walking, and pain on pressure over the affected flank, were important early symptoms. Later there was a muscular spasm and a decided mass could be felt over the region of the kidney. Constipation was always marked, due partly to the patient's dread of muscular effort. The usual constitutional signs of sepsis appeared as the disease progressed. In all of his cases the abscess was on the right side. He attributed this to the fact that the right kidney and perinephritic tissue were lower than the left, and consequently were more likely to be injured by the bearing-down pressure of the pregnant uterus during parturition. This afforded a point of least resistance in perinephritic tissues of the right side, and germs which were absorbed by the lymphatics of the uterus might readily gain a foothold here. Treatment should follow the diagnosis at once, and should consist in a lumbar incision, as in an operation for nephrotomy, and drainage with a tube of large caliber.

Postoperative Complications in Abdominal Surgery.—Dr. CHARLES M. ROSSER of Dallas, Tex., said, among other things, that shock, whether due to basic inhibition or vasomotor paresis, could not be overcome by stimulants to an already exhausted nerve center, but position for the purpose of relieving cerebral anemia, from hemorrhage, saline solutions to enlarge the volume of the blood current, adrenalin to restore the equilibrium of the blood pressure, and morphine to give balance to the flagging vital forces, were the remedies. A rubber bandage or a suit by limiting circulatory necessity might be used either as a precaution or treatment. Post-operative peritonitis resulted from excessive trauma or infection. Drainage was the best safeguard after asepsis. If required, reopening for drainage was to be done with the least possible trauma, and minimum amount of anesthetic. Ileus or other obstruction might be treated by enema of alum solution, which reversed peristalsis and gas distention by egg turpentine emulsion thrown high up. Inhalation pneumonia suggested mouth and pharynx antisepsis, and was treated in the usual way. Hypostatic pneumonia was not so common, since physicians did not insist upon decubitus as a routine.

Some Postoperative Complications of Peritonitis.—Dr. RANDOLPH WINSLOW of Baltimore, Md., read a paper on this subject in which he reported the histories of two cases that had recently occurred in his practice. One of them was a case of appendicitis, with peritonitis, followed by intestinal obstruction from adhesions. A cure was effected by operation. The patient was a girl, twenty years of age. The second case was one of appendicitis and peritonitis followed by extensive adhesions, causing intestinal obstruction. Enterostomy was performed, followed by anastomosis, and subsequently by resection and enterorrhaphy. This patient was a male, aged nineteen. The operations were successful.

Acute Dilatation of the Stomach as a Postoperative Complication.—Dr. C. JEFF MILLER of New Orleans, La., said that among the unexpected complications that might arise after surgical operations, no condition had furnished a more distressing chapter than acute dilatation of the stomach. This complication was probably as serious as any post-operative complication that might arise. The latest statistics, gathered by Simpson, showed that of one hundred and twenty-eight cases, eighty-six died. Kayser's collection of sixty cases, quoted by Bloodgood, yielded 71 per cent. of deaths. Conner's exhaustive study of one hundred and two cases showed seventy-four deaths, or 72.5 per cent. deaths, and twenty-eight recoveries. The treatment was summed up as follows, namely, early recognition, prompt emptying and washing of the stomach, and such posture as might release a mesenteric compression. To these might be added any eliminative measure indicated, if the emunctory organs were inactive. Early diagnosis was essential to successful treatment. Judging from the cases reported in which operation was done with the idea of relieving obstruction, surgery was not encouraging. In spite of the high mortality, however, there was strong evidence to prove that many cases could be saved by prompt treatment. The author reported a case upon which he had operated successfully.

Dr. HENRY T. BYFORD of Chicago said that his experience had been that the longer the anesthesia, the less nausea there was, and the slower the patient came out from under the influence of the anesthetic, the less nausea there was. He had found it advantageous to give from one to two ounces of brandy just before giving the anesthetic, in order to diminish the amount of anesthetic necessary, as by so doing there was much less lung irritation. He had also noticed the good effect of giving an enema after operation, putting in the enema one-half or an ounce of alcohol.

Dr. GEORGE BEN JOHNSTON of Richmond, Va., could not agree with Dr. Byford that prolonged anesthesia was prudent. The smallest quantity of any anesthetic should be given, and the anesthesia should occupy as little time as possible. These conduced to the welfare of the patient As to complications, the most important thing was the prompt recognition of them. Fatalities from them occurred because they were not promptly recognized, and therefore not promptly treated. A careful study of every post-operative case would enable the experienced clinician to recognize an approaching dilatation of the stomach, and if this condition was quickly recognized and energetically treated, fully 33 per cent. of the patients would recover. The stomach should not be washed out in these cases at stated intervals, but as soon as the condition is recognized prompt lavage should be practised and continued as long as there is any indication of vomiting.

Dr. RUFUS B. HALL of Cincinnati, Ohio, in speaking of abdominal distention, referred to the value of the hypodermic use of eserine in 1-50 or 1-100 grain doses. Within forty minutes after its administration the patient will begin to pass gas. His rule had been to give patients the fiftieth of a grain under the skin, and within forty minutes, if the patient was not relieved by passing great quantities of gas, the dose was repeated. It was rare, however, that he had to give a second dose. He had used this remedy for about two years in more than thirty cases, and in only one had it failed to bring on the prompt elimination of the gas.

Dr. W. P. CARR of Washington, D. C., had had good results from eserine in a number of cases, and where he had had the stomachs of the patients washed out directly after operation and had given them a dose of eserine when they left the table, there had been very little trouble from distention by gas or in getting the bowels to move after-

wards. Washing out the stomach after an operation and giving the thirtieth of a grain of eserine on the table was very effective as a routine practice, except where the bowel was open and where one did not want to get very much peristalsis. It was only effective when there was something in the bowel. If the bowel was empty, eserine did not seem to have any effect.

Dr. Charles H. Mayo of Rochester, Minn., in referring to acute dilatation of the stomach, said there was a great amount of discomfort following operation in these cases, many of the patients dying. They died because on the second, the third, or the fourth day they showed a marked tendency to regurgitation. These patients would vomit a peculiar greenish material in large quantities. Two or three quarts might be vomited suddenly. The lower abdomen was flat, while the upper was distended. The condition would persist for four days, when there might be a profuse diarrhea. The condition could be met successfully in many cases by lavage as long as the stomach showed a tendency to refill. Many of these patients, after three or four washings of the stomach, within the third day would be entirely relieved; intestinal peristalsis would begin, and gas would escape. Some of the more severe cases could be saved by a gastrojejunostomy done between the fifth and seventh days as a secondary operation.

Dr. Herman J. Boldt of New York did not think the mortality from acute dilatation of the stomach was as high as had been quoted. However, it was a comparatively frequent and undesirable complication after abdominal section work. Whenever there was the slightest evidence of an inflammatory process in the peritoneum, salicylate of eserine did no good, so that one must be careful in the selection of his cases. Early mobility of patients would guard against some of these post-operative complications.

Dr. J. M. Mason of Birmingham, Ala., mentioned a patient who developed acute dilatation of the stomach the day following an operation, but who was entirely relieved by getting rid of the Fowler position, elevating the foot of the bed, and by resorting to lavage.

Dr. Hubert A. Royster of Raleigh, N. C., reported a case of acute dilatation of the stomach following operation for the fixation of both kidneys. The patient, however, died on the fourth day after efforts to relieve her.

Dr. John Young Brown of St. Louis, Mo., had had twenty-eight cases of diffuse peritonitis, and since he began the treatment recommended by Bond his mortality had been greatly reduced; whereas prior to that time, when he irrigated, his mortality was high. It is not so much the Fowler position as it is getting these patients to move about in bed, thus preventing the complications that were formerly observed. Of ten cases treated without the Fowler position, the results were equally as good as in those treated with it. He contended that by following a simple technique at the primary operation, complications which would otherwise arise might be prevented.

Dr. I. S. Stone of Washington, D. C., thought that after doing good surgical work the bowels of the patient should be allowed to rest. When a surgeon gave purgatives immediately after operations, he thought he defeated the very purpose he ought to attempt to accomplish. He had done quite a number of operations in the last five years, and had not had a single case of death from ileus.

Dr. Edward H. Ochsner of Chicago said the sooner surgeons learned to recognize that rest favored repair, and that motion favored adhesions, the better it would be for them and for their patients.

Transperitoneal Removal of Tumors of the Bladder.—Dr. Charles H. Mayo of Rochester, Minn., said that a large percentage of early recurrences following the removal of bladder tumors, both benign and malignant, indicated delayed operation or imperfect removal. With the increasing interest in cystoscopy, early operating was becoming more common. The ineffective operation was due, in part at least, to imperfect exposure of the operative field. The transperitoneal operation was advised in cases of large tumors, benign or malignant, of the bladder. With the patient in the Trendelenburg posture, the bladder empty, a long median incision was made over the bladder, the peritoneum opened, and the intestines walled off into the upper abdomen by large gauze pads in the operative field. The bladder was drawn up into the wound, and opened through the peritoneal covering on its posterior superior aspect. The cavity was now dried with gauze and the incision increased forward or back two or three inches, the tumor excised, and the area involved treated with the Paquelin cautery. In some cases large areas of the bladder, even two-thirds of it, might be resected. The opening was closed by catgut suture protected on its peritoneal side by a linen suture of the Cushing type. The abdominal incision was closed usually without drainage. In the after-care, repeated use of the catheter for a few days, if necessary, is preferred in uncomplicated cases.

Treatment of the Bladder after Suprapubic Cystotomy for Stone.—Dr. William S. Goldsmith of Atlanta, Ga., said the principles governing the treatment of the bladder after suprapubic cystotomy are (1) the immediate and complete closure of the bladder and abdominal wound; (2) the institution of urethral retention catheter drainage. A series of external urethrotomy cases, in which the retention catheter method was used, and following the closure of the perineal incision, convinced him of its efficiency and of the tolerance of the bladder for these unusual conditions. Perfect urethral drainage was such a necessity that failure in securing successful results was attributed to some inperfections of this important factor of treatment. Large stones could not be removed through small incisions without seriously macerating the mucous membrane and other coats and leaving a ragged, lacerated suture line altogether unsurgical in character, and encouraging tissue necrosis with eventually bad results. Upon the removal of the foreign body the wound was protected with gauze, the patient turned upon his side, and the bladder thoroughly irrigated with urethral catheter. The wound was closed tight with interrupted silk sutures, introduced down to but not including the mucous membrane. The abdominal incision was closed with small chromic catgut and cotton and collodion applied. Elaborate abdominal dressings were not used, for the reason that they served no purpose other than to interfere with the freedom of the patient in turning from side to side. In adults, and particularly men of middle age, posture was a most important detail. The ability to turn on either side and the insistence of frequent change of position stimulated urinary secretions, prevented puddling of urine, and insured a clean, collapsed cavity, which at once began a regeneration of exhausted anatomical and physiological vitality. The semi-erect, and finally the erect, position was rapidly assumed, and every effort was directed along the line of forced recuperation and rapid convalescence.

The Treatment of Fibroid Tumors of the Uterus Complicated by Pregnancy.—Dr. Lewis S. McMurtry of Louisville, Ky., alluded to the indications for surgical intervention in cases of fibromyomata complicating pregnancy, with especial reference to the time for such intervention and the plan and scope of the operative procedure in the varying conditions presented. Uterine fibromyomata were very commonly associated with sterility. The association of pregnancy with uterine fibromyomata added very materially to the dangers of this condition; that new dangers would arise from the combination of the two, and while the clinical fact that a considerable proportion of the cases came through in safety was indisputable, the mortality of the entire number of cases left to nature was

high. To illustrate the advantage of prompt operative intervention in properly selected cases, the author reported four cases. These he selected for the purpose of illustrating the multiform aspects of uterine fibromyomata complicated by pregnancy as clinically presented. His entire experience consisted of two more cases, in which operation was done in the early period of pregnancy, making six cases in all, and all recovered. While indiscriminate operation in uterine fibromyomata associated with pregnancy was not to be advised, the mortality of this condition when unaided was so great as to justify an extension of the field of operative treatment, both myomectomy and hysteromyomectomy; and every case should receive individual consideration so that a judicious selection of cases for operation might be observed.

Dr. George H. Noble of Atlanta said that where the pelvis was impacted completely, as he had seen in a number of cases, where it was impossible to make a digital examination, and the upper part of the uterus was smooth, free from the tumor, the surgeon might do one of two things, a cesarean section or a myomectomy. Since cesarean section was a simple operation, it would be desirable in the interest of the mother and of the fetus. Myomectomy could be carried much further in well selected cases.

Dr. Herman J. Boldt of New York said that a woman in about the third month of gestation consulted him as to whether or not she was pregnant. She had missed the menstrual period a couple of times, and the physician whom she first consulted informed her that she had a tumor which required immediate removal. Examination revealed a tumor in the lower anterior segment of the uterus, a fibromyoma of the interstitial variety; at the same time, she was pregnant. At the time she consulted him he advised non-interference, but that if any serious symptoms were encountered it might be necessary later to do a cesarean section in case she could not be delivered naturally. Myomectomy was decided on and done to prevent an abortion. The woman made a perfect recovery. She was now eight months pregnant.

Dr. Henry D. Fry of Washington said that in addition to the dangers mentioned by the essayist, we must recognize the increased danger in these cases from postpartum hemorrhage. The retraction of the uterus was not sufficient at the site of the placental attachment, and postpartum hermorrhage was likely to occur. Again, if the woman passed through labor satisfactorily and safely, we might have infection or necrosis of the fibroids. He had had that occur twice in his own work, where the women had been delivered safely, and their puerperium was complicated by septic fever. Supravaginal hysterectomy was done. The women got well, but in cutting down on the tumor it was found to be disintegrated and necrotic. As to the time of operation for these fibroid tumors, he thought surgeons ought to tide the cases along until the child reached the period of viability, get as near the full term of gestation as possible, and then do a cesarean section and supravaginal amputation of the uterus.

Dr. Ernest C. Lewis of New Orleans mentioned the case of a woman, five months pregnant, who had a fibroid attached to the body of the uterus and filling about one-half of the pelvis. It was not suspected until it caused pressure symptoms and pain. Her family physician sent for him, and a fibroid which could not be pushed above the brim of the pelvis was diagnosed. The cervix was pressed against the symphysis pubis. Operation was advised and consented to. The abdomen was opened, the tumor enucleated from the back portion of the uterus, the abdomen closed, the patient made an uneventful recovery, went to full term, and was delivered by her family physician with forceps. He referred to another case in which the woman was more advanced in pregnancy.

Dr. J. Wesley Bovée of Washington thought there were a great many women who would go to full term and be delivered naturally with fibroid tumors of the uterus, so that he thought we could not lay down any fast rule that would apply to every case. Each case was to be considered individually. If any operation was to be done, it was well to follow the plan Dr. Fry mentioned. The speaker was loth, however, to do a myomectomy where the growth was intimately connected with the body of the uterus, as he felt it would be apt to induce abortion. The case of Dr. Boldt impressed him as being unique, from the fact that operation was done to prevent abortion, and abortion did not occur, yet it was threatened before operation was done. As a rule, he would expect the opposite to be the case, and he doubted whether surgeons could follow Dr. Boldt's plan as a routine measure. In a number of cases he had done myomectomy without interference with pregnancy.

Dr. George Ben Johnston of Richmond believed that when fibroids could be removed early in pregnancy, this should be done, but unfortunately many of the cases did not reach the surgeon until a stage of pregnancy had been reached when this could be safely done. When a pregnancy was known to exist and was complicated by fibroids, such a patient should be closely watched, so that prompt operation might be performed, if necessary. In this way the rights of the unborn child could be respected, and it was not uncommon for such a pregnancy to go on to the period when the child was viable. He had had experience in fifteen case on which he had operated for fibroids complicating pregnancy. But his experience had been doleful in the matter of saving the children. He had not had a fatality among the mothers, but had been able to save only one child out of these fifteen cases.

The Treatment of Dislocation of the Shoulder Joint Complicated with Fracture of the Upper Extremity of the Humerus.—Dr. J. M. Mason of Birmingham, Ala., reported the case of a man who sustained a subcoracoid dislocation of both shoulders with fracture of the surgical neck of the right humerus. The left shoulder was reduced by the Kocher method, and the right was treated by arthrotomy and reduction six hours after the receipt of the injury. The fracture was wired and primary union was secured. A perfect result was obtained, and the patient had neither atrophy, pain, nor weakness in the arm, and there was no restriction of motion in any direction. A comparison of the result in the shoulder subjected to operation with the one where simple reduction of the uncomplicated dislocation was practised showed no difference. The author's conclusions were that: (1) Every dislocation of the shoulder associated with fracture of the upper extremity of the humerus was a grave injury and was likely to result in serious impairment of function if not promptly treated. (2) Every such injury should be subjected to x-ray examination for accuracy in diagnosis. (3) Gentleness should characterize all manipulative efforts at reduction, and these should not be carried to the point of bruising or lacerating the tissues. (4) Excision should only be practised where open arthrotomy has failed, where there was extensive comminution of the upper extremity of the humerus, or where, in fracture at the anatomical neck, the condition of the upper fragment did not justify a reasonable expectancy of uniting. (5) After reduction, the broken greater tuberosity should be nailed down if the case was recent, and should be removed if it caused impairment of function in an old case. (6) Failing to reduce by manipulation, immediate arthrotomy with reduction of the dislocation, followed by appropriate treatment for the fracture, had given the best results, and was the ideal method of treatment. (7) Rigid asepsis was essential in securing good results, and these operations should not be undertaken where this could not be carried out.

Fracture of the Femur in Forcible Delivery, with Presentation of Splint.—Dr. Charles R. Robins of Rich-

mond, Va., said the possibility of fracture of the femur in the various manipulations of the lower extremities in forcible delivery was mentioned in medical literature, but he had been unable to find anything on treatment. He was convinced from inquiry that such fractures were more common than the scant mention would indicate, and that successful treatment offered serious difficulties. The splint which he presented was designed for the purpose of treating such a fracture occurring in his own practice, and the result obtained was perfect. In the treatment of such a fracture it was absolutely necessary to adopt some method that would permit handling of the child for nursing without disturbing the limb, that would permit changing of napkins, that would not become soiled, and that would not excoriate the delicate skin. These indications could not be met by any of the methods in vogue for treatment in older persons. The splint he described in detail, and its application.

Some Results of the Hodgen Splint Treatment of Fractures of the Thigh as Shown by the X-Rays.—Dr. George S. Brown of Birmingham, Ala., demonstrated by means of sketches the changes he had made in the original splint of Hodgen as the latter had modified it from the old Smith's anterior splint. These changes were, first, he used one piece of cloth as a hammock to take the place of the underlapping strips of roller bandage, which were troublesome by rolling up in strings and otherwise getting out of order. Again, he had placed small tent blocks on the supporting cords by means of which the level and hang of the limb in the splint could be adjusted in a most satisfactory manner. Again, he had placed two wire loops at the distal corners of the wire frame through which were passed the traction strips of muslin which were pinned to the traction adhesive strips at the malleoli; these, being passed through these loops, were tied together across the sole of the foot, thus holding the limb firmly in the frame and doing away with the foot block which was formerly used as in the Buck's. The loops of the small suspension cords were hung upon the hook of a spring scales which in turn was hung to the sash cord that went over the pulley wheel in the ceiling. The writer claimed that while the limb was swung up from the bed and the suspension cord was at an angle, the pull was bound to be constant, and that this splint was the only apparatus so far devised that would give a constant pull. He asserted that the principle that should be followed in the treatment of fractures should be that of gradual reduction by a moderate pull steadily but constantly maintained, under which the muscles would entirely give up their resistance. Reduction under ether was unnecessary and useless, as the muscles would quickly recover their resistance and undo all that had been done in this way; that the old Hodgen splint operated on the same principle, but owing to its crudeness would not stay in order, could not be properly regulated as to the pull, and could not be properly balanced, and was not as comfortable. Buck's apparatus was painful, and for that reason the patient was constantly contriving and always succeeding in his efforts to have the weight removed long enough to allow him occasional relief from the strain on the hamstring tendons, and that this kept the muscles alive and resistant, and that as long as the muscles were alive and resistant, it was practically impossible to overcome the shortening in an oblique fracture; that with the Hodgen, the muscles were put completely out of commission in from a week to ten days. The speaker showed a number of skiagraphs taken from old patients of his, most of whom had been treated some years before the discovery of the *x*-ray. In all but two of the pictures the results were excellent, and these, he explained, had not had the advantage of proper treatment. Two pictures of fractures through the great trochanters showed union so perfect as to leave nothing more to be desired, and the same could be said of several of the shaft. In summing up, it could be said of this splint that after it was put on a limb it was well-nigh automatic in its operation. It was so comfortable that patients never objected to it in any way. It made less work for surgeons and nurses by at least 75 per cent. than any other method of treatment of these injuries, and the results were always either excellent or good.

Practical Points in the Treatment of Fractured Femur.—Dr. W. P. Carr of Washington, D. C., said that numerous surgeons had advocated wiring or some open operation on all or nearly all fractures of the femur, and claimed that perfect results could not be obtained without it. Results could be obtained in nearly all cases of simple fracture that were both functionally and anatomically perfect, if the following points were carefully observed: Extension by weight and pulley or other efficient means must be used daily. The shortening must be absolutely overcome in the first twenty-four or at most thirty-six hours, or it could never be entirely overcome. From ten to twenty-five pounds' weight would be required to do this, and great care to see that the weight was effective. Shortening is due to faulty application of the weight or too little weight. Catching of some part of the apparatus on the foot of the bed or in the mattress or bed-clothing, and slipping down in bed, are the most common defects. The traction should be applied so as to tend to lift the heel and not pull it down against the mattress, as so commonly happened. Slipping down was best prevented, not by elevating the foot of the bed, but by elevating the lower half of the mattress to an angle of 20°. In fractures just below the lesser trochanter, the elevation should be 35° or 40°, flexing the thigh to that extent, and the limb should be abducted slightly. Compound fractures should, as a rule, be wired, as the wound was usually contaminated and chances of suppuration were lessened by open operation and thorough cleansing of the parts. Children were best treated by vertical extension. All shortening could be absolutely avoided by care during the first few days. Careful measurements should be made and skiagrams, when possible. Any case not in satisfactory position at the end of a week should be wired. If simple rules of mechanics were observed, a single small loop of soft iron wire was all that would be needed to prevent shortening, lateral displacement, or rotation. Iron wire was much stronger than silver. Angular deformity must be prevented by traction, plaster-of-Paris cast, or splints, no matter what method of fastening the bones was used. Three instruments were shown that had proven very useful in resecting and wiring bone. First, a modification of Wyeth's bone saw, much simpler and more effective than Wyeth's. Second, a bone drill made like a small brace and bit, to be used in one hand while the other hand is free to hold the bone. Third, a very small thin grooved director, small enough to pass through the drill hole and guide the wire. This is very useful in passing the wire from within outward through the second fragment, especially when oozing of blood obscures the opening of the drill hole.

President's Address.—Dr. Kelly selected for his address the subject of "Art as Applied to Medicine and Surgery."

The Relaxed Knee Joint and Its Treatment.—Dr. Albert H. Freiberg of Cincinnati called attention to a group of cases involving the knee joint, which, on account of the absence of manifestations in the radiogram, the absence of any infectious element, and most often of any organic change in the joint to be appreciated by the physical examination, have for the most part been considered functional. Excluded from this consideration were the cases with knee symptoms proceeding from weak and flat-foot. The complaint of the patient in these cases was either that of joint pain largely or altogether dependent

upon function, with occasional effusion into the joint after unusual exertion, or else the occurrence of sudden attacks which were frequently very similar to those resulting from injury to the meniscus. In the latter cases there was the sudden onset of very sharp pain, so that the patient often fell. This was commonly followed by an effusion which subsided after a few days, leaving the joint apparently normal. The chief clinical character, aside from these symptoms, was atrophy of the quadriceps extensor of the thigh, and diminished power of extension of the knee consequent thereon. This atrophy was to be determined by accurate measurement with the tape line. Since the quadriceps was normally the tensor of the knee joint capsule, its relaxation permitted its falling into folds, and it was thus subjected to frequent trauma by being pinched between the femur and tibia, and the symptoms were thus explained. Villous hypertrophy might ensue in consequence of the repetition of these attacks. In all of the cases reported it was possible to determine a traumatic origin, although in several the trauma appeared to be very slight. The theory of reflex atrophy was favored rather than that of inactivity, because in several cases the limb was used without any intermission after the injury. The description of this class of cases as "relaxed knee joint" was advocated as a distinct syndrome and not simply as a feature of villous arthritis. The treatment consisted of measures to restore the volume and strength of the quadriceps, such as suitable gymnastic exercise, resisted movements, massage and electricity. Tone must be restored to the relaxed capsule by suitable local measures, such as hydrotherapy, etc. Often the return to the normal was so slow that the assumption of damage to the central nervous system seemed justified. All cases might, however, be expected to recover with proper treatment and sufficient perseverance. In summarizing, the author stated that (1) many cases of so-called functional knee symptoms were due to reflex atrophy of the quadriceps following injury; (2) the term relaxed knee joint should be reserved for such cases; (3) the injury might be so slight that its etiological relation was overlooked; (4) the atrophy following injury could in many cases not be explained by the theory of inactivity; (5) cure of these cases would be brought about by the restoration of the normal volume and strength of the quadriceps extensor; (6) in some cases recovery was so protracted as to warrant belief in material damage to the central nervous system. While in such cases endeavors were necessarily limited to treatment at the periphery, ultimate recovery might be expected to follow persevering and well-directed effort.

(*To be continued.*)

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 5, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

Election of Officers.—*Vice-President*, Dr. Simon Flexner; *Trustee*, Dr. Arthur M. Jacobus; *Member Committee on Admissions*, Dr. Charles H. Richardson; *Member Committee on Library*, Dr. Haven Emerson.

Pathological Anatomy of Diabetes Mellitus.—Dr. EUGENE L. OPIE read this paper. He said there had been collected from the literature 188 cases of diabetes in which the pancreas exhibited lesions, which were classified as follows: Atrophy, 78; fatty change (lipomatosis save in two cases), 10; induration, 22; pancreatic calculi, 24; carcinoma, 21; cyst, 9; abscess, 6; hemorrhage, 3; necrosis, 3; fat necrosis, 2; lesions recognizable by the microscope, 7. For more than twenty-five years it had been known that the pancreas contained structures which differed from the secreting acini and had no connection with the ducts of the gland; evidence that these bodies were diseased in diabetes was advanced in 1900, and perhaps were responsible for carbohydrate metabolism disturbances. The active interest in the study of pancreatic diabetes had shown the relationship of diabetes to lesions of the pancreas and to its various histological structures and also served to explain the relationship of diabetes mellitus to certain diseases, such as arterial sclerosis and at the same time to explain the age incidence of the diabetes. In 1903 Sauerbeck collected 176 cases of diabetes in which more accurate records of the condition of the pancreas were kept and especially of the islands of Langerhans. One hundred and twelve cases had been subsequently published, and a review of these cases gave much more accurate information concerning the pathology of pancreatic diabetes than Oser's cases. There was a wide divergence of the statistics from the two sources. Interacinar pancreatitis, 123; interlobular pancreatitis, 13; lipomatosis, 18; calculi, 9; cyst, 1; carcinoma, 5; focal necrosis, 2; atrophy, 65; parenchyma normal, lesions of the islands of Langerhans, hyaline degeneration, 6; sclerosis, 4; diminished in number, 5; hypertrophied, 3; pancreas normal, 34. Even these figures failed to indicate with certainty the relative frequency of certain pancreatic changes to diabetes. Included under the designation atrophy were two wholly different conditions: First, cases in which there was gross and histological evidence that the structural elements of the gland had undergone diminution in size or in number, thus diminishing the size of the gland as a whole; there were with this condition evidences of degenerative changes in the parenchyma of the gland. Secondly, cases in which the gland was smaller than normal perhaps as the result of a congenital anomaly; the histological structure of the organ was unchanged. If the various lesions to which the pancreas was subject were reviewed, it would be found that those which destroyed the islands of Langerhans were almost constantly accompanied by diabetes. Whereas those lesions which destroyed the parenchyma and invaded the islands of Langerhans only when the changes were far advanced were in most instances unaccompanied by diabetes. Instances had been recorded in which with diabetes the islands of Langerhans had been the seat of destructive lesions, whereas the secreting parenchyma had been normal. Further evidence of the relationship of these structures to diabetes mellitus was furnished by the occurrence of hypertrophy of the islands of Langerhans in association with the disease. Facts of considerable interest were noted when the cases were grouped together according to the ages. The disease was comparatively rare in young children, and somewhat more frequent in the decade from 10 to 20 years, but during each successive decade from 20 to 70 years occurred an almost equal number of cases. It was a noteworthy fact that diabetes with normal pancreas occurred almost exclusively during the early period of life; in the second decade when diabetes was uncommon a majority of the cases exhibited no pancreatic lesion. Such cases diminished in subsequent decades and were rare after the fortieth year of life. The maximum number of the so-called cases of atrophy of the pancreas occurred during the third decade and, whereas diabetes without pancreatic lesion occurred almost wholly between the tenth and fortieth year of life, diabetes with so-called atrophy of the pancreas occurred with relatively few exceptions between the twentieth and fiftieth year. Evidence which had been cited demonstrated, he believed, that lesions of the islands of Langerhans stood in causal relation to diabetes mellitus. The table showed that diabetes occurring during the middle and later life was with few exceptions referable to a pancreatic lesion. Various types of chronic pancreatic inflammation, including the related condition known as lipomatosis or fatty infiltration, had the age incidence common to cirrhosis of the liver, chronic nephritis, and chronic inflammatory changes

in other organs. Of greater significance was the type of chronic pancreatitis which had been designated interacinal inflammation, or fine sclerosis, which had occurred in 64 of 144 instances of diabetes classified in the table of age incidence. The lesion was uncommon in early life, but after the fortieth year accompanied one-half of all cases of diabetes. This was probably referable to its relationship to general arterial sclerosis. Among the 112 cases which he had collected from recent literature, general arterial sclerosis had been present in 32 instances; sclerosis of the pancreatic arteries without note of sclerosis elsewhere had been found in 6 additional cases. Of these 38 cases, in 25 the gland had been the seat of diffuse sclerosis. Although the facts given did not admit of any definitely formed conclusions concerning the nature of all cases of diabetes, they suggested that diabetes was in most part pancreatic in origin. Nevertheless, it would not be denied that there was a group of cases in which no change in the pancreas could be found. Dr. Opie then referred to the possibility that a congenital or acquired defect of the microscopic bodies known as the islands of Langerhans might be remedied by direct transformation of groups of glandular cells into these structures; for if such transformation was possible their view of the significance of the islands must be changed. Evidence that one structure might take the form of the other was derived from two sources: (1) Transitions, it was claimed, occurred between the islands and the secreting acini. (2) By stimuli, which urge the secreting cells of the acini to discharge their contents, these cells might be forced to assume the form characteristic of those in the interacinal islands. The important discovery by Starling, namely, that an extract of the duodenal mucous membrane in weak acid contained a substance designated secretin which excited the flow of pancreatic juice, had suggested a means by which cells of the gland might be altered to assume the character of the interacinal cells. The pancreas had long occupied a unique position among the organs which were believed to produce an internal secretion. Extirpation or destruction of the pancreas produced glycosuria and other symptoms which were uninfluenced by the administration of pancreatic tissue. A century of painstaking experiment and observation had given emphasis to two noteworthy facts concerning diabetes mellitus. First, diabetes persisting until death could be produced in animals by one method alone, namely, by extirpation of the pancreas. Second, the frequent association of pancreatic disease with human diabetes, whereas the relation of this disease to changes in other organs, for example, lesions of the nervous system, was doubtful.

Symptomatology and Treatment of Diabetes Mellitus.—Dr. Frederick Beal read this paper. He said that the home of the disease was India, where ten per cent. of the total mortality of the country was due to its ravages. Thirst and dryness of the mouth, unrelieved by drinking large quantities of water, were perhaps the first symptoms as seen in America. In the tropics, however, loss of virile power and loss of knee jerk were in the majority of the cases the first symptoms. Dryness of the skin was a prominent symptom here, while in India more often perspiration occurred. The hair was dry and brittle, and the face and form became shrunken and pale, and there was a nervous, anxious expression. Emaciation was very marked and constant, especially in the younger patients. Sugar was found in the urine, sweat, and tears. Polyuria was one of the most valuable signs in this country, but in the tropics it could not be relied upon. The quantity voided was in direct ratio to the quantity of sugar in the urine. Ten to forty pints was the range of the amount passed daily. The saliva was diminished and had an acid reaction. The gums were soft and spongy, and the teeth became carious as the disease advanced. The tongue was somewhat swollen, red, and fissured, and the breath possessed an acetone odor in some cases. Constipation was the rule. Neuralgias of various nerves were frequent. Myalgia and muscular cramps occurred in many cases. Defective accommodation and retinitis of various forms occurred in twenty per cent. of the cases. Hiccough was a prominent and annoying symptom in certain cases. In a large percentage of the cases tenderness would be elicited by deep pressure over the head of the pancreas and descending colon. The urine contained sugar which varied from 1 1-2 to 8 per cent. The specific gravity was increased. The sudden disappearance of sugar from the urine was a danger signal. Sugar in the urine was always reduced in a fever patient. Pruritus, eczema, and erythema around the genitals were the commonest skin lesions, and then came furuncles and boils, while urticaria, psoriasis, gangrene, and perforating ulcers were not so common. Cancer was extremely rare in diabetes. More than one-third of all diabetics succumbed to phthisis. Gangrene of the lung was not an uncommon complication. Tabes dorsalis was a frequent forerunner of diabetes. Epilepsy might cause or result from the disease. Coma was probably the most serious complication. It occurred most frequently in those under forty. There were three forms of coma: (1) The ordinary form, beginning with headache, nausea, drowsiness, and later vomiting and unconsciousness. (2) Coma that started with collapse. (3) That form in which the symptoms resembled acute alcoholism. Death occurred usually twelve to forty-eight hours after the onset of unconsciousness. In the early stages the heart was usually dilated and hypertrophied, but in the later stages the heart's action became weak and at post mortem the organ was found small and atrophied. The pulse was usually accelerated and the tension elevated. Angina pectoris and cardiac asthma were not uncommon complications. The red blood cells were increased and sugar was increased to 0.3 and 0.5 per cent. In severe cases fat particles were found in the blood to such an extent that it assumed a pink color and deposited a creamy sediment on standing. Children of a diabetic parent or parents should partake of a diabetic diet whether they were apparently healthy or not. A non-diabetic should not sleep with a diabetic. A non-diabetic who was the husband or wife of a diabetic should only partake of a diabetic diet. Von Noorden's "yeast cure" at present claimed many adherents. The treatment to-day of diabetes mellitus, both dietetic and medicinal, was very unsatisfactory. It was generally conceded that carbohydrates should be reduced or eliminated from the diet and their place taken by albumin and fats. Each case demanded separate study to determine how much carbohydrate must be excluded from the food to stop the appearance of sugar in the urine. Among the more common substitutes for white bread, beside the gluten foods, were almond bread, almond cake, and soja bread. Flesh meat, poultry, game, fish, tongue, bacon, potted beef, preserved meats, sardines, beef tea, broth, and soups might be taken. Eggs were very useful. Whenever milk was given the urine should be watched with great care. Cream as a rule formed a diet par excellence. In fact, all fats were admissible. Nuts, cocoanuts, and almonds were useful. As a substitute for sugar diabetics could use saccharin, saxin, or dulcin. Tea, coffee, aerated waters, light wines, etc., might be allowed. One should attempt to learn the cause and then treat that cause. If there was no discoverable cause one must then treat the patient experimentally with first one drug and then another. Codeine had given better success than any other drug, and should be started in one-half grain doses and worked up to ten or fifteen grains daily. Arsenic had many advocates. The alkalies were indicated throughout the disease. Quinine, jambul, salicylate of bismuth, and many other drugs had been used with more or less good effect.

Stated Meeting, Held December 19, 1907.

The President, Dr. John A. Wyeth, in the Chair.

The Induction of Premature Labor in Amaurosis and Amblyopia, in Connection with the Albuminuria of Pregnancy.—Dr. Thomas R. Pooley read this paper. He said that twenty years ago he had published a paper on this same topic. (See Medical Record, January 28, 1888). While much was added to the original paper, nevertheless a small part of it would, of necessity, be a repetition of what had already been published. Among the indications for the induction of abortion or premature labor in the albuminuria of pregnancy, disturbances of vision had not received the attention which the great importance of the subject seemed to demand. Loss of sight might occur at any time during pregnancy or after delivery, and might recur at several successive pregnancies, but was more apt to take place in the later months. The affection of vision might last for weeks, and then, after labor, complete recovery might ensue, or the sight might become completely lost. There were two ways in which the sight might be impaired: (1) A sudden more or less transitory or complete loss of sight (uremic amaurosis) without appreciable changes in the fundus oculi; (2) a gradual failure, at first not complete loss of sight, with characteristic changes in the retina and optic nerve, which in time might lead to blindness (neuroretinitis Brightii or albuminurica). These facts having been so well established, it would seem strange that it was of comparatively recent date that the induction of premature labor, solely with the view of arresting the progress of the eye disease, had been advised, but such was the fact. From certain facts they were naturally led to consider whether it was ever justifiable or proper to provoke premature labor or abortion for the restoration or preservation of sight alone, even when other symptoms, usually recognized as sufficient cause for this procedure, might be wanting. It was the main object of this paper to discuss this very phase of the subject. From the facts presented in the paper the following conclusions were deduced: 1. That in all cases of pregnancy it was not only desirable to examine the urine from time to time, but also to examine the eyes with the ophthalmoscope, even in a routine manner, since, as was well known to oculists, a large percentage of cases having lesions of the optic nerve and retina, either had none or made no complaint of vision, but which might lead, after a long interval, through the secondary or atrophic changes, to complete blindness. It was also to be borne in mind that varying degrees of blindness, and which usually did not appear until the end of pregnancy, did not show that the retinal lesions might not already have been in existence for some time, and that the timely examination of the eyes might have saved sight and even life. Moreover, the evidences of disease of the kidneys not infrequently showed themselves in the eye before they did in the urine. 2. In uremic amaurosis, without changes in the eye visible to the ophthalmoscope, even should the usual symptoms, such as dizziness, nausea, and threatened convulsions be absent, their recurrence was soon to be feared, and labor should be induced without waiting until the life, as well as the sight of the patient, was in danger. 3. When neuroretinitis, with grave organic lesions of the optic nerve and progressive loss of vision was present in the later months of pregnancy, and the child, if not dead from the effects of the kidney disease, might be viable, it was not only justifiable, but urgently demanded, that premature labor be resorted to. If the danger of delay was such that to wait until this time would be to doom the patients to blindness, the operation should be performed even in the earlier months. 4. In those instances in which, in one pregnancy, affections of vision had occurred which had remained permanent, abortion or premature labor in the following pregnancies which occurred might be rendered necessary. 5. Prognosis as to the recovery of vision was better in cases in which chronic nephritis did not already exist. 6. The induction of premature labor or abortion, both morally and legally, was justified in order to save vision as well as life. 7. Women once having suffered loss of or impairment of vision during pregnancy should have the danger of again becoming so, and the relation of cause and effect, fully explained to both themselves and their husbands.

Dr. A. Jacobi said that the alleged indications for the induction of premature labor were numerous and among them were the death of the fetus, advanced cases of heart disease, acute tuberculosis, carcinoma, pernicious anemia, or leucocythemia, hemorrhages near the end of pregnancy, the presence of hydatid mole, acute nephritis, in which the fetus was developed poorly (although he knew of a woman who, in spite of acute exacerbations in every pregnancy, had nine healthy children in nearly thirty years), irrepressible vomiting thought to be autotoxic, incarceration of a retroflexed uterus, mental diseases, severe neuroses, etc. He said the indications were so numerous that it seemed that abortions should be very frequent. Edgar reported 2,200 hospital cases of pregnancy and the proportion was but one in 115, while Fritsch, a no meaner authority, a man of vast experience, stated that in thirty years he had had nine cases of abortion; while a young practitioner of his acquaintance had seven cases in the first year of his practice. He did not state whether this was in one of those countries where such abortions were legalized under certain circumstances, nor whether the assiduous doctor was rewarded with gratis board and lodging in a state prison. Of Edgar's nineteen cases, four were for deformity, four for eclampsia, four for albuminuria. According to the long list enumerated in most text-books on obstetrics, every one might expect to meet with proper, or improper cases, for the practice of what was called to-day by many emptying of the womb. Dr. Jacobi's obstetrical practice extended over twenty-five years and terminated thirty years ago; in both of these periods, however, he had had the opportunity to emphasize the contraindications rather than the indications. In order to be quite sure of his footing, he had looked over a number of books some days ago. He had already mentioned Edgar's work. He then called attention to De Schweinitz's book, in which it was stated that the indication for the production of abortion was the persistence of a loss of vision resulting from a previous pregnancy. After mentioning the works of other men, Dr. Jacobi said that the dangers connected with albuminuria depended upon the causes. Where it depended upon the pressure of the head on the bladder, it was innocent. But the rule was that it depended upon disturbances in the kidney. There might be simple congestion, mechanical obstruction to the circulation, and the different forms of nephritis. Amblyopia and amaurosis were caused by an albuminuric retinitis. Albuminuric retinitis might be either degenerative, in granular kidney, with vascular changes, or exudative in parenchymatous nephritis. Both of these might allow the consecutive amblyopia or amaurosis to improve. The prognosis was ominous when vision became worse in subsequent pregnancies or in marked cases of choked disk, etc. Occasionally there were cases of amblyopia caused by lead poisoning, hysteria, or reflex spasms with contractions of the blood-vessels. The latter might be improved by morphia and chloral hydrate. They could be easily diagnosticated as not belonging here, if it were not that such cases exhibited small amounts of albumin in the urine, and, on the other hand, cases of chronic contracting nephritis with very little or temporarily no albumin. Not infrequently the very worst cases of nephritis in its last stage exhibited no albumin, or so little of it that one was tempted into a treacherous

sense of security. The microscopical examination in every such case should not be omitted. At all events, no case of pregnancy after the third month should be permitted to proceed without a personal weekly examination of the urine.

Dr. E. Gruening said that the title of the paper was "The Indications for the Induction of Premature Labor for the Preservation and Restoration of Sight." Uremic amaurosis had been mentioned as one of the indications. Inasmuch as uremic amaurosis was temporary, and never caused permanent blindness, it stood to reason that for the preservation of sight uremic amaurosis could not be an indication for the induction of premature labor. The case cited by Dr. Pooley as one of uremic amaurosis could not have been one, because it ended in atrophy of the optic nerve, which was never a consequence of uremic amaurosis. He granted that uremic amaurosis was a symptom of a severe toxemia which might lead to loss of life, and therefore the indication for the induction of premature labor might be vital. It was not indicated for the preservation of sight, as this was not threatened. The same held good with regard to retinitis albuminurica of pregnancy. It had been claimed in this paper that, in this condition, the induction of premature labor was also necessary for the preservation or restoration of sight. Albuminuric retinitis, and especially the albuminuric retinitis of pregnancy, did not cause blindness. It might, however, cause death, and therefore here, too, the induction of premature labor might be imperative, not for the preservation of sight, but for the saving of life. Women who suffered from either uremic amaurosis or retinitis albuminurica might at any time have convulsions, become comatose, and die, and therefore the indication for the induction of premature labor was a life-saving measure. There was, however, one important indication for the induction of premature labor for the preservation of sight pure and simple. This was the optic neuritis of pregnancy, which threatened sight and not life. This neuritis was of toxic origin, was due to the toxemia of pregnancy, and might lead to serious deterioration of vision or even blindness, but not to loss of life. If optic neuritis had occurred in a preceding pregnancy and had impaired vision, it might lead to absolute blindness in a subsequent pregnancy.

Dr. Charles Stedman Bull, in discussing the paper of Dr. Pooley, spoke as follows: "There seems to be some doubt in the minds of certain members of the medical profession whether in the so-called nephritis of pregnancy an actual exudative retinitis ever really occurs. For instance, Krückman stated, at the twenty-fourth annual meeting of the German Ophthalmological Society, that retinitis albuminurica is never present in the kidney disease of pregnant women, if the kidneys had been normal previous to pregnancy; but in the chronic form of kidney disease complicated by pregnancy it is often present, but only when the blood pressure is increased. Rabinovitch, on the contrary, in a paper read before the Russian Ophthalmological Society in 1904, reported three cases out of a total of twenty-four cases presented, of the nephritis of pregnancy, which were accompanied by retinitis albuminurica, though the kidneys had been healthy previous to the pregnancy.

"As regards the first point emphasized in Dr. Pooley's paper, there can scarcely be any question of argument. In the retinitis albuminurica of pregnancy the prognosis as to the vision and the life of the patient depends upon the duration of gestation. With the termination of pregnancy the inflammatory process in the retina subsides, and good vision may be restored, provided the inflammatory process has not lasted long enough to cause the secondary degenerative changes in the retina. For this reason the induction of premature labor has been recommended, and if the visual disturbances appear during the first six months of pregnancy labor should be induced if the sight is to be saved. The retinitis of pregnancy presents some peculiarities. The loss of vision appears slowly and chiefly in primiparæ, and in the latter half of pregnancy. There is no contraction of the visual field, either for form or color. Sometimes complete amaurosis occurs, and this may be traced to uremia, and usually disappears. In subsequent pregnancies mild recurrences may be the rule. Retinitis gravidarum, so called, appears in the "pregnancy kidney" in from 1 to 20 per cent. of the cases. Here there is fatty degeneration of the epithelium of the uriniferous tubules, and the urine contains a large amount of albumin and many hyaline and granular casts. The pathological findings in this variety of retinitis resemble those found in other instances, but the vessels are not involved, or if they are, merely to an insignificant degree. The prognosis as to life and vision is most serious, unless premature labor is induced. If induced, there may be a complete disappearance of the retinal changes. Persistent loss of vision points to the existence of some complication, such as detachment of the retina or atrophy of the optic nerve. If labor is not induced, the majority of these women, if they live, are permanently blind. The induction of premature labor is always justifiable in order to prevent blindness or even permanent impairment of vision from retinitis albuminurica, or from the toxemia of pregnancy without the presence of exudative retinitis. It is a well-established fact that the impairment of the vision is rather due to the general retinal edema than to the patches of exudation, for the latter may remain visible for years after the disappearance of the edema and the restoration of vision. This is probably due to a degeneration of the nerve elements of the retina, probably from pressure, rather than to disease of the walls of the vessels. Schieck is probably correct in regarding retinitis albuminurica as a primary toxic destruction of the nerve elements of the retina. Another point made by Dr. Pooley should be emphasized, viz. that as the existence of kidney disease has often been first recognized by the ophthalmoscope in the determination of retinitis albuminurica, this should be one of the first means of examination employed. The natural corollary to this proposition is that the ophthalmoscope should always be employed as a matter of routine in the examination of pregnant women. I have seen many cases of chronic nephritis in which the first symptom noted by the patient was a failure of vision, which led to an ophthalmoscopic examination and the recognition of retinitis albuminurica. The eyes of pregnant women are much more likely to be affected in those cases in which chronic interstitial nephritis exists, and in these cases the retinitis albuminurica is always found. Still, acute nephritis without pre-existing kidney trouble is often developed during pregnancy, and here we are more likely to find the general retinal edema than the actual patches of exudation. In these cases, as might be predicted, the prognosis for both sight and life is much more favorable, provided premature labor be induced. In any case, should no other indications for interference arise, the steady, progressive impairment of vision will determine the time to induce premature labor. There are certain other complications of pregnancy affecting the vision which at times call for interference on the part of the physician and the induction of premature labor. One of these accidents is detachment of the retina in myopic eyes, without any positive retinitis. I recall the case of a very myopic woman who lost the sight of one eye from retinal detachment during her second pregnancy, and vision was never regained. During the sixth month of her third pregnancy the vision of the other eye became impaired and I found on examination a very marked retinal edema. I at once urged the induction of premature labor, which was consented to and brought on by her physician, and in the course of three weeks the retinal

edema disappeared and normal vision was restored. Another complication is optic neuritis, of which I have seen a number of cases, which developed before the end of the third month of pregnancy. In all of these cases there was chronic nephritis, and the induction of premature labor restored the vision to normal.

"From all that the author of the paper has considered and from our general knowledge of the subject, there can be no doubt of the justice of the following conclusions: A woman who has once suffered loss or impairment of vision during pregnancy from toxemia or actual retinitis albuminurica, should be warned of the danger of again becoming pregnant and the relation of the cause and effect should be fully explained to her and to her husband."

Dr. William H. Thomson said that many years ago he attended a case of obstetrics and once was asked to attend a young primipara. He had no suspicion of any local trouble, but he became uneasy on account of the nature of the examination of the urine every week. She never showed any albumin or casts. In spite of that there was a diminution in the amount of urine and a low specific gravity. In the course of the last month of her pregnancy she began to be nervous, had severe headaches, tachycardia, and high tension pulse. He asked an obstetrician to see her in consultation. Dr. Thomson thought the condition was dangerous and that prêmature labor should be performed, but the consultant declined to do so because there was no albumin in the urine. This was at a time when there were a great many in the profession who believed that Bright's disease and albuminuria were synonymous. Dr. Thomson was sorry that the consultant came to the conclusion he did. Five days later he was called to see the woman in severe eclampsia, in which she died. He was glad to hear so many speakers insist that the disordered kidney of pregnancy and Bright's disease were not synonymous. With regard to the etiology it should be remembered that the constitution of the mother was always profoundly affected by the chemical ingredients coming to her blood from the fetus. A very striking observation was referred to. An investigator was quite certain that the secretion of milk occurring in pregnancy was not due to any nervous element, but to some chemical ferment. Accordingly he succeeded in making an extract from rabbits (in making this extract he used forty fetuses), which, when injected into virgin rabbits resulted in every instance in causing mammary swelling and the entire list of changes that occurred in pregnancy, including the secretion of milk. If the addition to the blood from the contained fetus in the womb could bring about such striking physical and physiological changes, how likely it was that some deranged process of that kind might have a highly toxic effect upon the mother! All the early explanations of the genesis of puerperal eclampsia had never satisfied him.

Dr. Wilbur B. Marple said that no one could doubt the favorable influence which premature delivery had often had on the ocular lesions incident to the nephritis of pregnancy. Patients who had almost been blind had recovered their normal sight, and most remarkable of all was the patient of Brecht with almost total detachment in each eye, ordinarily a most hopeless condition, which became almost wholly reattached in four days after premature delivery. No careful physician of to-day neglected to make frequent urinary examinations of his pregnant patients but could one conclude that because the urine was normal the eye grounds would also be? The ocular lesion should be discovered promptly if one expected to prevent serious and possibly permanent impairment of sight. Loring was quite right when he said that the sphere of greatest usefulness, and therefore of the greatest triumph of the ophthalmoscope, would some day "be in the hands of the general physician, and especially of the obstetrician." This prediction one could make much more positively to-day when they had the electric opthalmoscope, the use of which was so much more easily learned than that of the former models. Repeated ophthalmoscopic examinations should be made of these patients during pregnancy either by the ophthalmologist or by the obstetrician himself. It was impossible to lay down any hard-and-fast rules as to the indications for premature labor in these cases. They were told, for example, that albuminuria and ocular lesions generally occurred in primiparæ; yet Silex reported a case of a woman who had gone through ten previous pregnancies and who developed visual disturbances in the eighth week of her eleventh pregnancy; although the child was born only five weeks subsequently, very serious impairment of sight resulted. Ocular troubles were said to develop more often in the last months of pregnancy; yet Loring had stated that "there are many cases in which the trouble began long before, and that the eyes if examined would have given evidence of disease before the explosion took place which cost many a mother her eyesight and oftentimes her life." Again, it was sometimes held that if in one pregnancy marked renal and ocular disease had developed, subsequent conception ought to be prevented as a matter of prophylaxis. Yet Randolph had reported two cases which showed that it was quite possible for a woman who had been nearly blind from renal retinitis to go through her next pregnancy without the slightest return of the eye trouble. Therefore the physician was between Scylla and Charybdis. Few more difficult problems confronted the practitioner than this question, as to whether or not premature delivery ought to be induced. The indication of premature labor would probably have to be resorted to to save sight (1) where extensive and serious ocular lesions, attended with marked visual impairment, manifested themselves very early in pregnancy; (2) where ocular lesions had appeared in a preceding pregnancy, especially if they had already resulted in permanent impairment of sight. When the retinal lesions were absent until the last six or seven weeks of pregnancy, they were of less grave import, unless very extensive or unless they had appeared in previous pregnancies. Loring had well said, however, that, "given a pregnant woman with loss of sight or organic lesion of the retina or optic nerve as the prominent or even sole symptom, no one could say that a series of convulsions might not set in at any moment which would carry everything before them."

Dr. Thomas R. Pooley took exception to Dr. Gruening's statement and said that cases were on record of complete amaurosis due to albuminuria, and he had had several such cases. Generally amaurosis was transitory and soon disappeared, but sometimes these cases might result in blindness. He could not accept the view that it was caused by a neuritis only. He believed there was a central focal lesion which resulted in atrophy of the optic nerve finally.

Dr. A. Ernest Gallant and Dr. George Tucker Harrison also discussed the paper.

Myasthenia of Peripheral Nervous Origin.—C. Negro has made a study of clinical cases which have convinced him that peripheral nervous troubles may cause phenomena of myasthenia. He interprets these manifestations of myasthenia as the effect of alterations of nervous nutritive processes in the peripheral motor nerves, independent of the arterial circulation, which alter the physiological conductive function of the nerves. He reports two new cases and the phenomena observed in them. From these observations he concludes that in the alterations of conduction of the peripheral motor nerves myasthenia is a somewhat rare occurrence, which is an effect of the alteration of conductibility of the voluntary stimuli on the part of the trunks of the nerves. This is the clinical expression of an exhaustion of the nervous peripheral motor system in which they are affected more quickly than normal by fatigue. The results of these observations may be of use in the diagnosis of changes in the physiological conductivity of peripheral motor neurons which precede paralysis.—*Revue Neurologique.*

Books Received.

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DISEASES OF CHILDREN FOR NURSES. By ROBERT S. McCOMBS, M.D. 8vo, 431 pages, illustrated, muslin, $2.00 net. W. B. Saunders Company, Philadelphia.

THE CONQUEST OF CANCER. By C. W. SALEEBY, M.D., F.R.S. (Edin.). 8vo, 301 pages, muslin, $1.75 net. Frederick A. Stokes Company, New York.

MANUEL PRATIQUE ET SIMPLIFIER D'ANALYSE DES URINES ET AUTRES SECRETIONS ORGANIQUES. Par ERNEST LIOTARD, O.O. 12mo, 184 pages, paper, 3 fr. A. Maloine, Editeur, Paris.

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Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 4, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	344	158
Diphtheria	308	36
Measles	581	32
Scarlet Fever	478	33
Smallpox	..	..
Varicella	98	..
Typhoid Fever	37	8
Whooping Cough	25	1
Cerebrospinal Meningitis	11	8
Malarial Fever	..	..
Totals	1882	276

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending January 3, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Dec. 15–21	13	..
San Francisco	Dec. 15–21	10	..
District of Columbia, Washington	Dec. 15–21	1	..
Florida, Tarpon Springs	Dec. 15–21	3	..
Illinois, Chicago	Dec. 22–28	2	..
Springfield	Dec. 13–19	9	..
Indiana, Indianapolis	Dec. 16–22	1	..
Lafayette	Dec. 17–23	2	..
Kansas, Wichita	Dec. 15–21	5	..
Kentucky, Covington	Dec. 15–21	1	..
Maryland, Baltimore	Dec. 22–28	1	..
Massachusetts, Boston	Dec. 15–21	1	..
Fall River	Dec. 22–28	1	..
Michigan, Saginaw	Dec. 15–21	14	..
Minnesota, Winona	Dec. 15–21	1	..
Missouri, St. Louis	Dec. 15–21	1	..
Nebraska, Nebraska City	Dec. 8–21	2	..
New York, New York	Dec. 15–21	3	..
Niagara Falls	Dec. 15–21	2	..
Syracuse	Dec. 15–24	1	..
North Carolina, Greensboro	Dec. 15–21	1	..
Ohio, Cincinnati	Dec. 21–27	2	..
Pennsylvania, Erie	Dec. 20–26	2	..
Tennessee, Knoxville	Dec. 15–21	2	..
Nashville	Dec. 15–21	10	..
Texas, San Antonio	Dec. 15–21	1	..
Washington, Tacoma	Dec. 15–21	4	..
Wisconsin, La Crosse	Dec. 15–21	3	..
Milwaukee	Dec. 15–21	4	..

SMALLPOX—FOREIGN.

Africa, Algeria—Algiers	Nov. 1–30	..	2
Argentine, Besario	Sept. 1–30	..	3
Brazil, Bahia	Nov. 2–30	157	3
Para	Dec. 1–7	9	2
Rio de Janeiro	Nov. 18–24	37	5
Canada, Nova Scotia—Halifax	Dec. 15–21	1	..
Ontario Province	Dec. 19, outbreak reported in several places		
Belleville	Dec. 17–23	4	..
China, Shanghai	Nov 18–24	5	11
	Cases foreign, deaths native		
Ecuador, Guayquil	Dec. 1–7	..	4
France, Paris	Dec. 1–7	8	..
Germany, General	Nov. 17–23	1	..
India, Calcutta	Dec. 1–7	..	2
Japan, Kobe	Nov. 21–27	23	2
Yokahama	Nov. 28–Dec. 3	1	..
Malta	Dec. 1–7	1	1
Mexico, Aguas Calientes	Dec. 9–15	..	3
Panama, Colon	Dec. 8	1	From S. S. *Atrato*
Peru, Callao	Nov. 20–26	..	1
Russia, Moscow	Nov. 24–30	4	6
Olessa	Nov. 24–30	4	..
Spain, Cadiz	Nov. 1–30	..	8
Madrid	Nov. 1–30	..	1
Valencia	Dec. 2–8	31	2
Turkey in Asia, Bagdad	Nov. 3–16	89	26

CHOLERA.

India, Calcutta	Nov. 17–23	..	108
Rangoon	Nov. 11–23	16	..
Japan, Oshima Island	Dec. 3	5	..
Ibaraki	Nov. 27	1	..
Kanagawa	Dec. 1–2	4	..
Kobe	Nov. 18–21	7	2
Nagasaki	Nov. 14–24	1	1
Tokushima	Nov. 27	27	23
Yokahama	Oct. 27–Nov. 2	5	4
Russia, General	Nov. 7–12	403	225
Kief	Nov. 19—23	14	3

YELLOW FEVER.

Brazil, Para	Dec. 1–7	16	10
Rio de Janeiro	Nov. 18–24	2	1
Cuba, Habana Province—Guines	Dec. 23–27	1	1 From Balos

Medical Record

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Original Articles.

ANORECTAL FISTULA.

BY CHARLES B. KELSEY, A.M., M.D.,

NEW YORK.

AN abscess which has opened into the rectum or on the cutaneous surface near the anus, and is discharging from this opening, is only potentially, not actually, a fistula. Many mistakes in treatment spring from failures to make this distinction.

A fistula implies chronicity, also induration and canalization, with shrinking of the original abscess cavity to a mere canal. Abscesses often heal spontaneously after being incised or breaking; fistulæ almost never. After an abscess has ceased to heal, when in fact it has reached a stage where spontaneous closure and repair are no longer possible, it becomes a fistula.

The old division of fistulæ into complete, blind external, and blind internal is practical and useful.

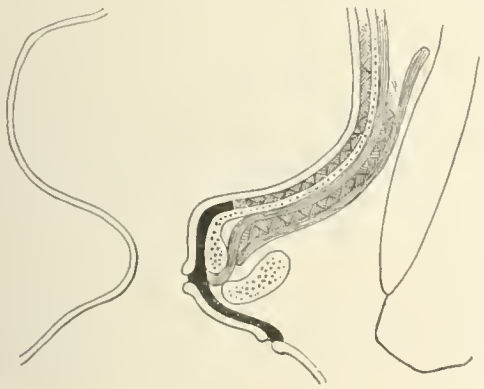

FIG. 1.—Complete fistula, showing also the submucous track running upward from the internal orifice.

These are shown in the above order in Figs. 1, 2, and 3.

Fig. 1, in addition, shows the upward or intramural track which is so often the cause of a failure to effect a cure by operation.

In the diagnosis of these varieties from each other a probe will not always be found sufficient. The blind internal form is difficult to examine by probing, and in all but the straight and simple varieties of the complete and blind external the track is apt to be too tortuous to admit of the passage of a probe.

Should it be deemed necessary to make the diagnosis absolutely before operating, the distention of the track with milk injected through a small syringe, which completely plugs the orifice into which it is introduced, is the favorite method.

The direction and extent of the track can often be made out more positively by gentle digital examination than by a probe. The track is hard, cordlike, and can often be felt as such under the skin and mucosa for its entire extent better without the previous introduction of a probe than with.

Fistulæ, like the abscesses which cause them, are best divided into superficial and deep, or those below and those above the levator ani muscle and the pelvic fascia. The former constitute the vast major-

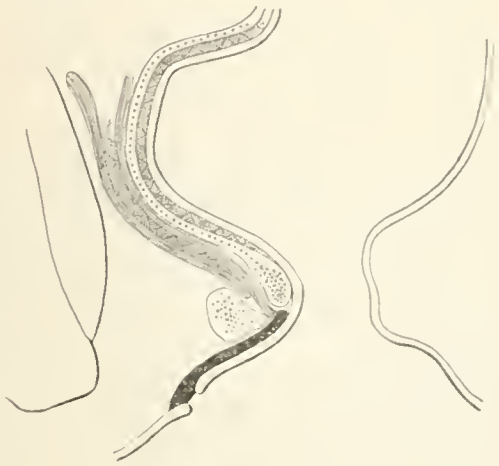

FIG. 2.—Blind external fistula.

ity; the latter are rare, much more serious, often incurable.

Superficial Fistulæ.—These are either subcutaneous, submucous, submuco-cutaneous, or ischiorectal, as were the abscesses of which they are the remains. The subcutaneous and submucous are sufficiently well indicated in the cuts. It will be seen that in all of them the internal orifice, when there is one, is just between the internal and external sphincters, and that the tracks are just under the surface, as their names indicate.

FIG. 3.—Blind internal fistula (schematic).

In Fig. 4 is shown a complete fistula from an ischiorectal abscess—still, though, much deeper than the last, to be classified among the superficial varieties. It will be seen that the internal orifice is much higher in the gut, that it is above the internal

sphincter, instead of below, and that a finger in the bowel will show a considerable mass of tissue between it and a probe passed along the track. It should also be noted that the track has not perforated the levator, but passed just below its blending with the rectum.

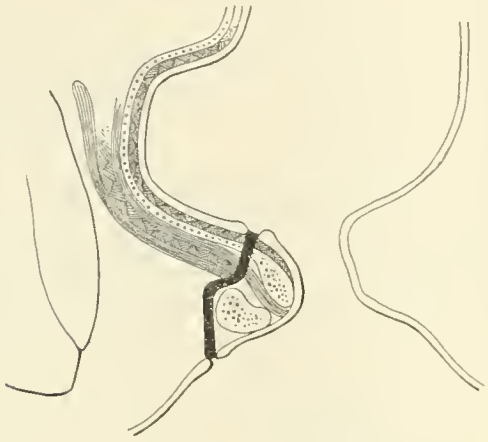

Fig. 4.—Fistula from ischiorectal abscess.

All of these varieties of superficial disease may be modified in almost countless ways. There may be two or three external openings, in fact twenty. There may be more than one internal opening, and tracks may run in any and every direction; but they all come under the same general class and the same general rules of treatment, no matter how great their complexity.

Treatment of Superficial Fistulæ.—Much thought and effort have been devoted to attempts to secure healing of these long ulcers with infiltrated bases without cutting them open, but with no great success. Very free cauterization with destructive fluids as nitrate of silver or caustic potash, combined with drainage will, however, be occasionally successful, and this treatment may properly be applied to deep tracks passing outside of the internal sphincter, the division of which by the knife is liable to be followed by incontinence.

Although nothing can be promised the patient from this method, it sometimes results very satisfactorily. Fluids used in this way are much more efficient than solids, and the method should always provide for free discharge from the cutaneous opening by slight incisions under eucaine if necessary.

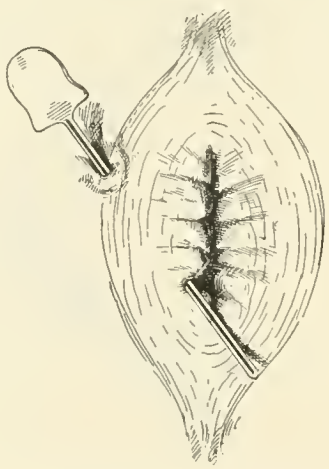

Fig. 5.—Improper division of sphincters.

When this method has been thoroughly tried and failed, I know of no other which is worth trying, though in one case of extensive inoperable disease I had great hopes for a time from powerful applications of electricity by high-frequency currents passed directly into the sinuses. The result was, however, *nil*.

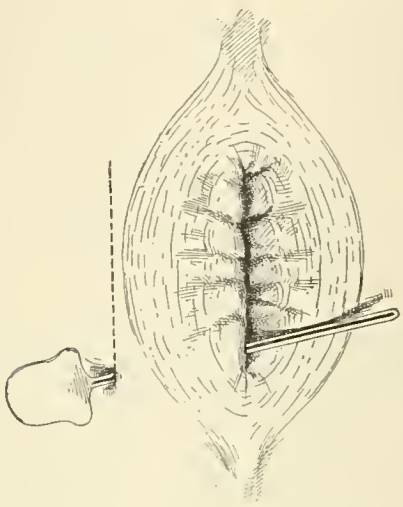

Fig. 6.—Correct division of sphincters.

The question next arises whether all, even superficial, fistulæ should be cut, even when such an operation involves no more than the usual surgical risk, and I would answer, by no means.

Of course, in patients near their end from constitutional disease, nobody would care to operate. Again, even in patients in good health the disease may be so extensive that its cure may amount to a major surgical operation, and the patient may succumb. But the question which is always before both surgeon and the patient with one or more deep tracks, is the possibility of resulting incontinence from incision of the muscles at one or more points. Much may be done by a skillful surgeon to avoid this, as we shall show, but it is well to remember that a patient with a fistula, and especially one of the blind internal variety, may be much more comfortable than after he has been cured and rendered incontinent.

When it comes to the question of operation there are several methods which need not detain us, though much space is given to their consideration in the text-books. These are dissecting out the fistulous track and its surrounding indurated base; incision by elastic ligature, and incision by silk ligature. The two last are unsurgical methods of making incisions, and may as well be delegated to the limbo

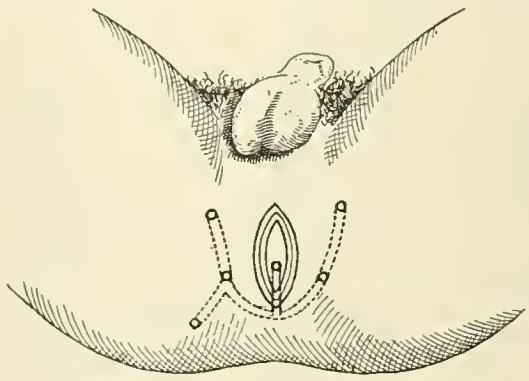

Fig. 7.—Complicated fistula with several external and one internal opening.

of past history in all ordinary cases. The former is unnecessary, and, if combined with the attempt to secure union by first intention, is almost invariably a failure.

Reduced, then, as we are to cutting with a scalpel, which is really a fairly good way of cutting when cutting is to be done, one more question has arisen in practice, and that is whether to do all the cutting that is to be done at one time and under general anesthesia when necessary, or to do it by fractions of an inch under local anesthesia. To a surgeon this may seem ridiculous, and in most cases it is; but it is not so to the patient. To him, cutting by inches under local anesthesia does not mean hospital, ether, or an operation.

While it is true that many of the simple subcutaneous and submucous fistulæ may be cut successfully under eucaine, and I have done much of this work in the office very satisfactorily, when it comes to cutting a horseshoe track in this way by *forty-four* partial incisions, we have passed far beyond the legitimate scope of a legitimate method of treatment. I have such a case now suffering from incontinence, and complaining rather bitterly of the result which was obtained by the chief exponent of this method in New York.

The first rule for avoiding incontinence is to cut

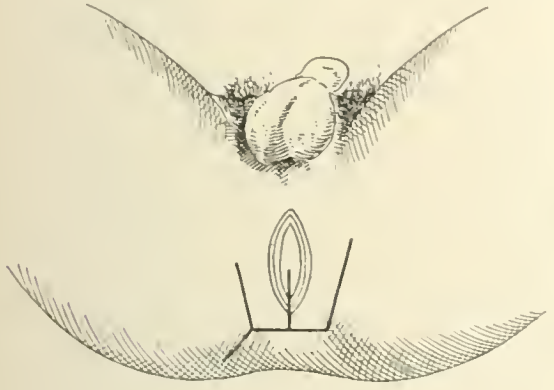

Fig. 8.—Showing how fistula such as Fig. 7 may be cured by single division of sphincters.

the muscles as little as possible, and to cut them directly across the course of the fibers, not diagonally. How this may be done in a simple case is shown in Figs. 5 and 6.

Take, for example, the ordinary form of posterior horseshoe track shown in Fig. 7, where we have five external openings and one internal.

This may be divided completely along the lines shown in Fig. 8 without resulting muscular impairment, while if done along the lines in Fig. 9 incontinence is certain.

This condition must not be mistaken for that shown in Fig. 10, where we have three external openings and three internal ones, and any cutting of the external openings 1, 2, and 3 into the internal opening 4 is bound to be followed by failure. I have just such a case now under treatment, where an operation under cocaine was followed by bitter disappointment to both surgeon and patient—the tracks from 2 to 3, from 1 to 3, and 3 to 4 being cut, while the tracks from 1 to 5 and from 2 to 6 were left entirely untreated, and requiring a second operation.

Almost a similar condition is shown in Fig. 11, where we have three internal openings and only one external. Both of these forms will require three divisions of the sphincters, and subsequent incontinence may be predicted with certainty. The principle is plain. The entire track and all its branches must be laid open.

The case shown in Fig. 12 had six openings, three external and three internal only, four of

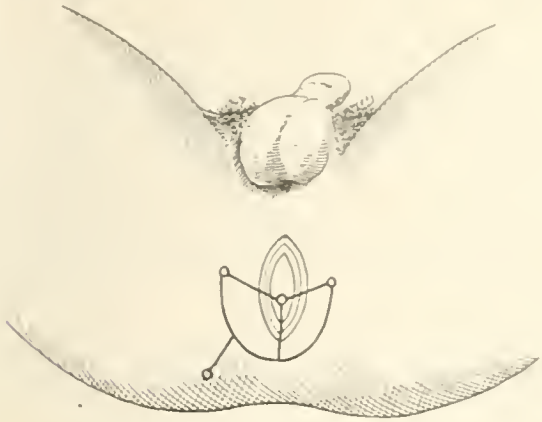

Fig. 9.—Improper division of fistula shown in Fig. 7.

which were cut to avoid a double division of the whole perineum, Fig. 13. The remainder of the tracks were thoroughly curetted and cauterized at the time of the operation, and, being straight and short, the result was fortunately satisfactory.

In all of these cases of abscess or fistula resulting from the glands of Bartholin, in addition to opening the abscess or cutting the fistula, the gland should be extirpated to be sure of effecting a cure.

We have given these details to show that by careful examination before operation it is generally possible to give a pretty accurate prognosis as to the question of incontinence. The great uncertainty, however, comes from the fact that the exact conditions are much more apt to become evident when the patient is under ether and the operation has begun than by any previous examination in the office. And this will always be the great practical objection to office operations under local anesthesia. Until the cutting has actually begun its extent is often uncertain, and a thing which looks simple becomes complicated, so that instead of a simple condition we find a very complex one, and instead of a single incision forty-four may be necessary. Only

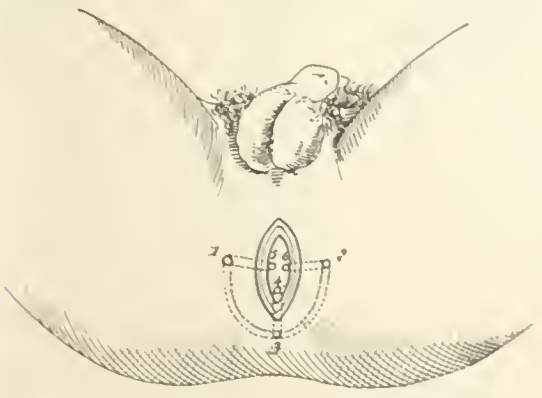

Fig. 10.—Fistula with three external and three internal openings

the general rules can be marked out as we have tried to indicate, and one very practical one is that a fistulous indurated ulcer can seldom be cured by cutting one end of it and leaving the other; nor will any drainage established in this manner generally be of much benefit.

With the patients under general anesthesia and in a good light, it is not necessary to spend much time in probing to find the exact extent of the trouble before beginning to cut. The moment the external orifice is laid open the course of the track becomes evident, and it is to be followed in all its ramifications, unless the hope of cure is abandoned after the operation has begun.

The worst results come from the prevalent method of cutting only after a director has been entered at the external orifice, pushed along with all the force necessary, and made to emerge at the internal orifice. Then all the tissue over the director is cut and often much harm is done. A director often cannot be passed from one opening to the other without either a false passage through healthy tissue or great distortion of the parts. It should not be tried. Pass the director along the track an inch or even half an inch and cut, then follow the track with the director another inch and cut again. In this way the end will finally be reached, and often as well without any director as with one.

Tuberculous Fistula.—There is generally something quite diagnostic in the appearance of a tuberculous fistula, although the diagnosis can only be made with certainty by the proper examination of

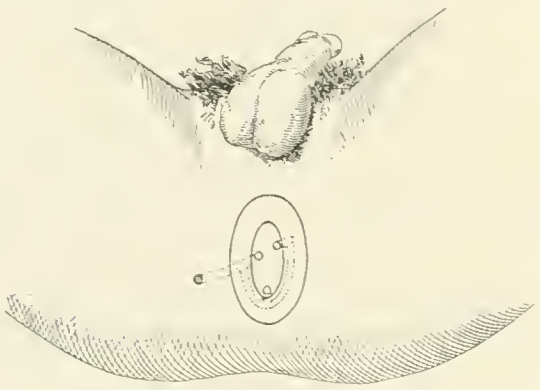

Fig. 11.—Fistula with one external and three internal openings.

the discharge. The openings, internal or external, are usually large, the tissue surrounding them are undermined, the skin is violet-colored and unhealthy, and apt to be studded with tuberculous nodules which have broken down; the discharge is saneous and unhealthy, and the whole appearance is that of sluggish ulcer showing no reparative action.

Time was when to say that a fistula was tuberculous was equivalent to saying it was incurable, but that is past. The treatment is the same as with simple inflammatory ones, only more radical, and directed primarily to the destruction of the tuberculous deposit. Simple incisions are therefore not to be relied upon. They must be combined with thorough cauterization (preferably the actual cautery) and with *reclage*, and these means may have to be repeated again and again. The general health must also be improved in every possible way.

As showing what may be done with patients under the best advantages, I have been greatly pleased with the result obtained in one of my own cases. The young lady had been in a private room in one of our city hospitals for many months, and had submitted to several operations without benefit, being finally allowed to go as incurable and tubercular. There was no other evidence of tuberculosis, but the perineum had been pretty much destroyed by cutting and burrowing, and there was apparently no healthy reparative action. She was under my care for nearly one year, and in hospital three times for cauterization and curettage. During all that time the ulcer was dressed by myself, and at every appearance of anything like a new tubercle or a fresh pocket, the galvano-cautery point

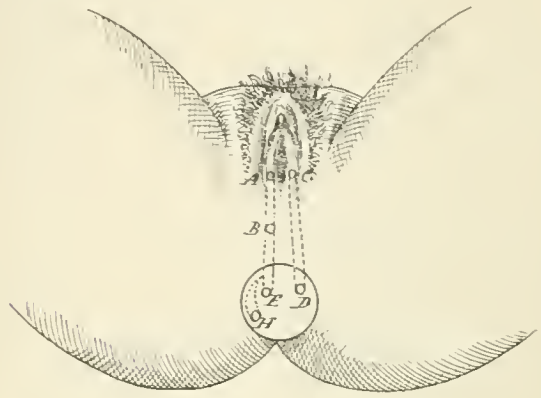

Fig. 12.—Complicated recto-labial fistula.

was applied under cocaine. She finally left me for a trip in Europe to be gone a few months, and as the ulcer was then only very nearly healed and she stayed a year, and meanwhile married, I expected upon her return to find the condition much as when she went, if not worse. Examination, however, showed every trace of the ulcer soundly cicatrized, her general health perfect, and we are now considering a plastic operation for repairing the perineum.

This result could only have been obtained under the most favorable conditions, but given those conditions, it is a safe rule of practice that tubercular fistula, even where there is slight tuberculous deposit elsewhere, may be cured as other fistula may.

Incontinence.—The restoration of the sphincter muscles to their function after they have been cut in an operation for fistula, opens up a much more delicate and interesting field of surgery than the mere cutting of a fistula.

Incontinence is a relative term, and though a patient may have lost absolutely the power to prevent a movement of the bowels at will, he may never be conscious of the loss unless he has a diarrhea. The desire for defecation, as dwelt upon by myself years

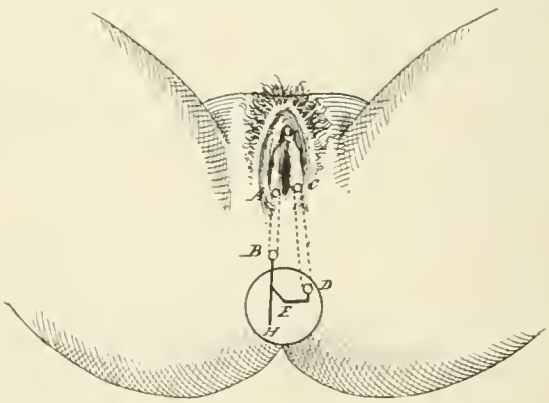

Fig. 13.—Incisions made in fistula shown in Fig. 12.

ago, is caused by reflex nervous influence. When the rectum is filled the patient responds to these reflex sensations, and, sphincter or no sphincter, the result with a natural formed passage is much the same. But, given a diarrhea, a distance from the commode, and the necessity of postponing the act,

and the utter inability to do so, becomes painfully manifest. In the earlier editions of my book is pictured an old case of fistula in which, as a result of cicatrization, the anus and rectum for at least four inches were converted into a fibrous, open, non-contractile canal, one inch in diameter through its

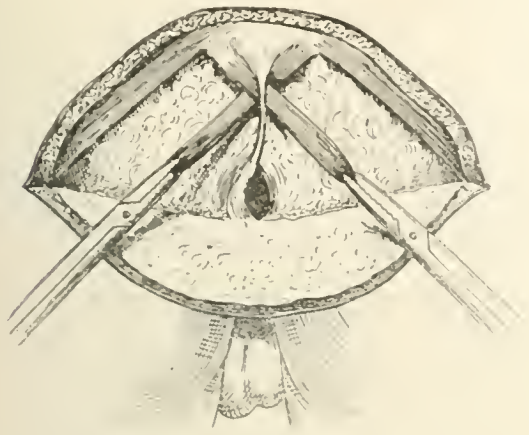

Fig. 14.—Operation for incontinence.

entire length, and yet this man, a big, healthy laborer, with the appetite and digestion of an ostrich, assured me that he had perfect control and never had the least trouble. Nor had he, but he never remembered having had a diarrhea.

In contrast to this I have known a delicate lady, confined to her room and bathroom twelve years as a chronic invalid, by the simple fear of accidents which occasionally happened as the result of a single slight incision through the sphincters. One attempt had been made at repair, which failed, and the case was then pronounced incurable without any examination by a general practitioner of national reputation. At first sight the defect was hard to locate, the skin having healed over it so as to conceal the break in the continuity of the muscle. But when this was found by the depression under the skin, laid open, the edges of the muscle freshened and sutured exactly as is done every day in any old case of laceration of the perineum from childbirth, the cure was perfect.

This, then is the operation of choice—expose the divided ends of the muscle and suture them carefully and thoroughly with every precaution for obtaining primary union. Should there be a double defect in the muscle, operate on each separately after an interval.

Should this method fail, but it will not often fail to give great relief, if not a positive cure, we are reduced to plastic operations, by which other muscular fibers are transplanted to take the place of the sphincters—generally strips from the glutei. Of all these, Chetwood's promises the best results and is simplest in performance.

A skin flap, as shown in Fig. 14, is turned forward, the fat dissected away till the edges of the gluteus are exposed, and a bundle of its fibers about a quarter of an inch in thickness is separated from each muscle cut below and left attached at the coccyx. These bands are crossed and passed under the ligamentous tissue connecting the tip of the coccyx with the anus. They are then made to encircle the anus, and the free ends are sutured under the skin in front of it. A deep tension suture is a wise precaution, and the operative field is again covered by its skin flap, Fig. 15.

Pelvic Fistulæ.—In fistulæ of the pelvirectal space we encounter many much more serious conditions. These have for their origin the same causes as the abscesses from which they originate, viz., inflammation of ovaries, tubes, or ligaments in women; of the prostate, seminal vesicles, or urethra in men; acute inflammation of hemorrhoids; diseased bone in or near the pelvis, and chronic ulcerative disease of the rectum, as stricture or cancer.

Deep pelvic fistula, like the superficial, may be either blind external, blind internal, or complete, and are often multiple, with the openings at a long distance from the primary focus, extending far out upon the buttock or thigh, or upward upon the abdominal wall.

The diagnosis is not difficult, for a long probe or uterine sound introduced into the cutaneous orifice leads not into the rectum, but parallel with it, or even away from it, till lost somewhere in the pelvis.

Treatment of Deep Pelvic Fistula.—It is evident that this form of disease cannot be treated as the superficial would be. All operative interference is often contraindicated, especially in the variety with blind internal orifice opening into the rectum some inches above the anus, and in the varieties due to old organic disease of the rectum.

Where communications exist between the rectum and genital organs in the female, laparotomy is generally necessary to clean out the original abscess, and the opening into the gut may be closed at the same time. Every surgeon knows the additional danger of laparotomy for pelvic abscess where this complication is present.

In the male, where rectogenital communication has been established, or where as a result of old stricture of the urethra abscess or extravasation has occurred and tracks have formed after opening far away from the original site, colostomy may be the only resource. Under such circumstances the artificial anus should be of the temporary or provisional type, made with as little destruction of the intestinal wall as possible, and with the definite provision

Fig. 15.—Operation for incontinence

for future closure by plastic operation without opening the peritoneum, should it be found effectual in curing the fistula. That it will often accomplish this end, and in cases where all other means have failed, I have more than once proved by happy experience.

In one case in which I operated years ago for Dr. Bangs, these openings, discharging both feces and urine, were so numerous, and the tracks so

long, that any local interference was out of the question, and a perfect result followed a temporary colostomy. When all the sinuses had closed spontaneously we offered to close the artificial anus, as the rectum had regained nearly its normal condition, but the man declined the operation, being very well satisfied as he was, and experiencing very little trouble from the artificial opening.

The artificial anus in these cases should, as I have said, always be made so as to admit of subsequent closure by a plastic operation without opening the peritoneal cavity; and I would suggest that the great value of this procedure in the treatment of many varieties of fecal fistula has not as yet been thoroughly recognized by the profession. Many of the rectovaginal, rectourethral, and rectovesical forms, as well as those simple ones opening on the abdominal wall, which have resisted the most careful and elaborate plastic operations, will, I believe, close spontaneously or after a little freshening of the edges, when once the contact with the feces is prevented by temporarily diverting their course.

As showing what may be necessary in the way of treatment to cure these deep pelvic fistulæ, the following case may not be without interest:

Not very long ago a woman was brought to me from the West who had undergone fourteen operations and examinations under ether for fistula without benefit. The external opening of the supposed rectal fistula was not more than an inch from the anus posteriorly, and into this a probe passed somewhere into the pelvis about eight inches, but just where could not be discovered. By pelvic examination an old cellulitis on the left side could be distinctly felt, and my diagnosis was that this was the source of the abscess and origin of the track. Posterior colpotomy was therefore my first attack, but no pus and no upper end of a long uterine sound passed upward from the skin opening could be found. The incision was plugged with gauze and the abdomen opened again in front for more thorough search, with exactly the same result—only the evidences of an old inflammation around the ovary, but no pus and no probe. This incision was closed, the other being left open for drainage. The woman was then turned upon her face, and I started deliberately to follow that uterine sound with a knife from the skin as far into the pelvis as it might lead. I did follow it into the body of the sacrum on the posterior surface and up to the promontory, which was carious and filled with pus, and a good prognosis as to result and permanent cure was given. The patient did not do well, however. In fact, she steadily grew worse in general condition and became markedly septic, and I had just about given up the hope of saving her life when, more by accident than anything else, I discovered a painful tumor near the spine in the upper lumbar region. There had been no complaint of this, the patient being delirious and thoroughly septic, but that it was a huge metastatic abscess in the loin a deep incision soon proved.

From this time on recovery was uninterrupted. Many spiculæ of bone came away from the sacrum, and finally a long, thin fragment, four inches in length, after which all sinuses closed. The patient, when last heard from, had been free from all signs of the disease four years.

In the simpler forms, where a deep fistula five or six inches long, has formed with external and internal openings, and where much tissue must be cut to hope for cure with the almost certain result of incontinence, it is often better to abstain from operation, lest matters be made worse, instead of better. But should cutting be decided upon, provision must be made for severe hemorrhage. Some of these tracks have been divided with an elastic ligature, and it is just in these cases that this method of division finds its chief applicability.

As a rule, it is best to thoroughly open the cutaneous orifice, so that free access to the whole track can be secured. Then use the sharp curette thoroughly, and after this free application of saturated solution of nitrate of silver to every part, and keep the external opening free for subsequent drainage.

When this is done thoroughly as a surgical operation under general anesthesia, a cure will sometimes be obtained. When it is done in a pottering, half-hearted way in one's office, a little at a time and often repeated, failure may be expected. From this method I have had a few cases result most satisfactorily. One notable one was in a young man with a deep pelvic track, the outer two inches of which had been unsuccessfully cut several times, so that he refused further treatment by operation, and in whom the internal opening was above the reach of the finger. The agent used in his case was very strong tincture of iodine injected through a fine syringe, so as to reach and distend every part of the track. Two injections resulted in a cure.

44 East Twenty-ninth Street.

SCHLÖSSER'S ALCOHOL INJECTIONS FOR FACIAL NEURALGIA.

SIXTEEN MONTHS' EXPERIENCE WITH 55 CASES; THREE FAILURES.*

By OTTO KILIANI, M.D.,

NEW YORK.

On December 7, 1906, I read before the Surgical Section of the Academy of Medicine a paper† on Schlösser's treatment for Trigeminal Neuralgia. I now wish to report my personal experiences of the last sixteen months with this method. Before I enter into my statistics, it may be necessary to shortly describe the idea, as well as the technique of the treatment.

Within the last six years quite a literature has developed upon the injection method as a treatment for tic douloureux. A great many different remedies have been tried for injection, as, stovain, cocaine, chloroform, air, nitrate of silver, antipyrin, and osmic acid. The last named has probably been used most extensively. All these substances were injected *loco dolenti*, usually simply subcutaneously at the seat of pain.

Schlösser was the first to make 80 per cent. alcohol injections either into the foramen through which the respective branch emerges into the face, or, if necessary, into the foramen ovale and rotundum.

As it is impossible to demonstrate to a large meeting the technique employed, it must suffice to say that all the foramina named can be reached with a needle in an experienced hand, safely and with certainty. The amount of alcohol injected is about 2 c.c.

Since September 1, 1906, I have seen and treated by injection 55 cases of facial neuralgia. I have learned a great deal about this disease and its peculiarities, but have to confine myself to-night strictly to the alcohol injections.

*Read before the Medical Society of the County of New York at its stated meeting, December 23, 1907.

†Published in the Medical Record, December 29, 1906.

As to the branches affected, the cases were divided as follows:

I. Branch alone affected	0 cases
II. Branch alone affected	13 cases
III. Branch alone affected	0 cases
I. and II. Branch affected	4 cases
I., II. and III. Branch affected	3 cases
II. and III. Branch affected	35 cases
	55 cases

In five cases the patients located the pain only in the II. branch and did not find out until that one was successfully treated that the III. branch was affected too, only in a lesser degree. In one case the occipital nerve was also affected, and successfully treated.

The neuralgia had been established for from six months to twenty years, namely:

Under one year	1 case
One to two years	7 cases
Two to five years	30 cases
Five to ten years	10 cases
Ten to twenty years	7 cases

As to the age of the afflicted patients, there was

22 years	1 case
30 to 40 years	2 cases
40 to 50 years	16 cases
50 to 60 years	28 cases
60 to 77 years	8 cases
	55 cases

There were 35 men against 20 women, that is, a proportion of 7 to 4.

I do not wish to give a percentage statistic of the occupation, because it would be without any value, if we do not know the relative proportion of the occupations themselves from the stand of political economy. But I can say that the rich and the poor are represented, the learned professions as well as the farmer and workman; among women, the maid and hard-working housewife as well as the stately lady of leisure.

Neurasthenic or neurotic predisposition could be proven in 10 cases. Of other possibly predisposing diseases, such as gout and diabetes, we find 9 cases.

As immediate causes are given: Shock (explosion), 1; exposure to cold and water, 3; grippe, 7; no cause given, 44.

Side affected: Left, 35 cases; right, 18; both, 2.

All patients had been treated before with internal medicaments, sedatives, external applications, as salves, etc., electricity, osteopathy, and what not. One case was treated with *x*-rays. Thirty-seven patients had teeth extracted, some, all of them. Peripheral operations (resection) had been done on 22 patients, namely, I. branch, 4 cases; II., 6; II. and III., 6; III., 6.

In four patients the Gasserian ganglion had been removed by the Krause-Hartley method. One patient had as many as seven operations performed on him.

The frequency of attacks varied from one in three days to one every few minutes. Although the resistance and self-control of patients doubtless varies greatly, the violence of the attacks is not the same in all patients.

I come now to the injections and their immediate and remote results. In all cases I have made peripheral injections first, even if I expected that I might have to inject into the ganglion. All the injections are done without any narcosis or local anesthesia. The insertion of the blunt needle (Schlösser's needles are of rather heavy tubing beveled off at 45 degrees to avoid any piercing effect of the needle) into the foramen is rather painful; the slow injection of the alcohol somewhat more so, but not beyond the endurance of the patients, who are accustomed to a great deal of pain. Every successful injection must produce, within a few minutes, a burning or benumbing sensation within the region of the nerve injected. This develops, sometimes after a severe period of pain for two or three hours, into a more or less pronounced anesthesia. Any of the three peripheral injections produces a swelling, which in the first and second branch results in edema of the eyelids, and in the third branch sometimes in a slight trismus. Nearly every injection into the second branch through the foramen infraorbitale produces a slight facial paresis, owing to the connecting branch of the ganglion sphenopalatinum with the loop of the facial nerve. This paresis disappears within a period of from three days to two weeks. To reach the part of the II. branch which supplies the roof of the mouth and the roots of the rear teeth, it is sometimes necessary to inject into the ganglion sphenopalatinum, a procedure which I have ventured only lately, as I was afraid of the entrance of the alcohol through the outer fissure into the orbita, with its possible disastrous results on the eye-muscles or even the optic nerve. But a carefully slow instillation has prevented any trouble so far.

Injection through the foramen ovale or rotundum into the root of the II. or III. branch, or the ganglion itself, must at once produce, if carried out properly, a complete anesthesia in the region of the nerve attacked. Only if gasserectomy has been done before, the effect may be delayed, owing to the scar-tissue resulting from the former operation.

The number of injections necessary to produce freedom from pain ranged with the I. branch from 2 to 4; with the II., from 4 to 16; with the III., from 2 to 5. I may add here that in those cases, where so many peripheral injections were necessary, one or two injections into the ganglion would have achieved the same result. The time occupied to get the patients free of pain varied from three days to five weeks.

The diagnosis of facial neuralgia rests to a large degree upon the statements of the patients, although a typical severe paroxysm cannot be mistaken for anything else. It is therefore only fair to pronounce a patient cured for the time being, only if the patient says so himself or herself.

Of the 55 cases treated, I have been informed by three patients that they considered the treatment a failure, and I therefore accept them as such, according to the above reasoning. The worst experience I had with a patient kindly submitted to me by Dr. Dana, a woman 65 years of age, afflicted with neuralgia of the II. and III. branch. After the third injection into the II. branch, the patient showed a typical paresis of the oculomotorius nerve,* producing ptosis, squinting and double vision, a condition which lasted, according to my information, nearly four weeks. When I saw the patient last, she was, according to her own and her family's statement, free of pain; but she stated later to Dr. Dana that she was as badly off as before. As I have not had a chance to re-examine the patient, I accept her statement and count her as a failure.

The second patient who considers the treatment a failure, a woman of 34, a rather unruly patient, left after four weeks of treatment for her home in

*This being the only surgical accident I had.

Virginia. Six months afterwards, examined by Dr. George W. Jacoby, the patient showed complete anesthesia in the II. branch treated. When her attention was called to the fact that she could not very well have pain in the region where there was complete anesthesia, she said, "Well, that's just it, this numbness is as bad as the pain!" I leave it to the Society to decide the value of her statement.

The third case (in a woman of 32) was not benefited at all. I was so doubtful about the differential diagnosis of hysteria and tic douloureux that I asked Dr. Jacoby in consultation to decide it for me. He thought she had both. I kept her for two weeks in the hospital, but never was a paroxysm observed either by me or any of the assistants or nurses. Being questioned, when she had pain, she answered, with a serene smile, "I have the most excruciating pain now." I have never seen such self-control, and accept her statement. She was not benefited.

These are the three failures. Of four further patients I have been unable to get any report, either directly or through their physicians. When they were discharged, they were free of pain, and grateful. I instructed them to report as soon as the pain recurred, but have not heard from them. One patient, a dispensary case, stayed away after the second injection into the II. branch, and I have not heard from him since.

All the other patients are entirely free from paroxysms and pain. The question now comes up, for how long? So far, no treatment or operation has been able to prevent recurrency of the pain. If, after a resection of a branch the tic returned, the nerve could be re-resected, although this is rather difficult, or the Gasserian ganglion had to be extirpated. But that even this operation does not prevent recurrency with certainty, is shown, aside from other proof in the literature, by the fact that I treated within nine months four cases of gasserectomy with recurrency of neuralgia.

I think it should prove of some interest to shortly describe those four cases where gasserectomy had been performed before.

The first case, 74 years of age, had had six previous peripheral operations performed, and finally gasserectomy. The pain returned in the II. branch fifteen months after operation. When I saw him, he had about twenty attacks a day, sometimes fifty, and a slight facial cramp. After the second injection into the foramen ovale, he was free of paroxysms and pain, and of his facial cramp; a third injection was given prophylactically. Since then, March, 1907, he has been entirely free. I presented him only ten days ago before the Clinical Society of the German Hospital.

The second case, 77 years of age, had a resection of the II. and III. branch and finally gasserectomy. Nine months afterwards the pain had returned. After two injections in the foramen ovale the man was free of pain and has remained so since May.

The third case, a man of 52, had been primarily gasserectomied with recurrence of pain after one year. The man left against my advice after one injection into the foramen ovale in April, 1907, because he considered himself cured. When I saw him in October, he was free of paroxysms, but complained of some occasional slight pain, but not enough to interfere with his enjoyment of life or to necessitate any further treatment.

The fourth case, a well-known minister and preacher, had been suffering for twenty years, had the II. and later on, the III. branch resected, and finally the Gasserian ganglion removed ten years ago. Seven months after the extirpation, recurrency. After a number of peripheral injections in April, with no decided result, I made two injections in the foramen ovale with the effect that three weeks afterwards he was free of pain, but his general condition is now very bad, owing to his excessive use of cocaine.

In a certain percentage of neuralgia cases treated with alcohol injections, recurrencies are said to be expected after eight to fourteen months. So far I have seen none personally, but I have been informed that a patient referred to me by Dr. Collins, whom I began to treat in the I., II. and III. branch and occipital nerve in December, 1906, and who was free of pain according to her statement in May, had by the middle of September a recurrency of the pain. In one of my earliest cases, a colleague, I made one prophylactic injection into the II. branch two weeks ago, that is, eleven months after the beginning of the original treatment. This was done because the patient intended to leave for California for three months, and he had a premonition, as he expressed it, that the pain might return. Besides, he had a certain tenderness near the nasolabial fold. One injection seemed to suffice.

If it is true that all treatmnets and operations, when tested long enough, will not prevent recurrency of the pain, this is very unfortunate, not only for the patients but also for the surgeon, as he is at a loss what further to do. I therefore consider that treatment the most efficient which permits repetition when recurrencies appear. This desideratum is supplied by the injection method.

I have given you to-night my personal experiences as impartially as possible. If asked for conclusions, I would say the following: I consider myself entitled to pass judgment upon the treatment of trigeminus neuralgia, as probably few people have seen fifty-five cases within sixteen months. Of these fifty-five cases I call three "failures," as described above; one patient has had a recurrence, and is out of my reach as she lives in Paris. The rest are free from pain, so far as I know. Of forty-seven I am positively sure.

Anybody who knows how frightfully those patients suffer, must admit that such a treatment, comparatively simple and in the hands of an experienced operator safe, with practically no risk, is a boon to mankind.

116 East Fifty-seventh Street.

INSTRUCTION IN HYDROTHERAPY.*

By SIMON BARUCH, M.D.,

NEW YORK.

To address a representative body of the rising generation of teachers on medicine is a privilege which I value highly, because it affords an opportunity for propaganda in a cause that is near to my heart. It lacks but eighteen months to complete a half century since I entered the medical profession. During the first and larger portion of this period I was unacquainted with the remedial properties of water; during the latter two decades I have endeavored to study and utilize them. A clinical control experiment was thus presented, the result of which I would fain impress on you could I adequately voice the comfort, satisfaction, and the saving of sorrow and suffering which the addition of water to my other therapeutic resources has brought.

*Read by invitation before the Interurban Club.

The development of hydrotherapy during the past twenty-five years has been so phenomenal that it has become imperative to formulate some method of instruction on this subject in our medical schools. The sooner this fact is realized the better for the schools and for suffering humanity. Permit me to illustrate this proposition by a practical example.

The Bath in Typhoid Fever.—You are familiar with the rise of the methodical system of bathing typhoid fever cases, known as the Brand bath. It was originated by a practitioner of Stettin during the Franco-Prussian war and was adopted by the army surgeon with such success that in 1882 the chief of the Statistical Bureau in Berlin, Professor Guttstadt, stated that "the mortality of typhoid fever had been greatly reduced by improved treatment, chiefly the method of Brand." And in 1883 the surgeon-general of the Prussian Army issued a circular in which it was urged that "inasmuch as the Brand bath had saved many lives, it was advisable to utilize this method more frequently in order to save a still larger number of the sick." Despite this testimony from unbiased and authentic sources, this bath never became popular in the civil hospitals and fell into desuetude. What was the cause? The German professor, who is an autocrat in his own school and hospital, treated the Brand bath with indifference and neglected to teach it. Each professor had his own method of bathing typhoids and seemed unwilling to accept the teaching of a private and obscure practitioner. Read the discussions of the Congress at Wiesbaden in 1885 and other societies, and you find that Liebermeistev, Ziemmssen, Nothnagel, Leyden, Fihlene, Naunyn, Immerman, Hagenbach von Mering, Senator, Fraenkel, Strümpell, each speaks ex cathedra of his own temperature, duration, technique, and indications, but not one admitted having subjected the strict Brand bath to a fair trial. Even those who had been converted to the true principle of Brand which was opposed to the antithermic action of the cold bath and advocated its refreshing and invigorating effects upon the nervous system and heart not only failed to credit Brand, but misrepresented him. Witness Curshman's statement in Nothnagel's cyclopedia. "At first," writes the celebrated Leipzig teacher, "under the profound influence of Brand and his successors and in consequence of overestimation of the significance of febrile elevation of temperature, cold baths were given at temperatures as low as 6° to 10.6° (44° to 50° F.), etc." The deplorable result of this indifference to and ignorance of Brand's method, which as you know was quite *the reverse* of that criticised by the professor (Brand never advised a bath below 65° F. and averaged 70° F.) was that its life-saving properties are not now appreciated in Germany, the place of its nativity. When I made the latter statement in the historical section of the Carlsbad Congress in 1902, it was disputed by a Dresden doctor, who said that all typhoids are treated with cold baths in the Dresden hospitals. This colleague had disregarded the fact, as many do to-day, that while every Brand bath is a cold bath, not every cold bath is a Brand bath. Two days later I had occasion to witness baths for typhoid in two of the latest and best equipped hospitals of Germany. One of the physicians had met my question if the Brand baths were used in his hospital by willingness to demonstrate that much milder baths "would reduce the temperature quite as well." When I pointed out after the completion of the bath that though the axillary temperature had been reduced two degrees, the rectal temperature was unchanged, the courteous house physician exclaimed: "Jetzt versteh' ich es."

Here you have one illustration of the dire result of lack of instruction on hydrotherapy.

Now, let me offer you an illustration of the result of correct teaching on the same subject to demonstrate how instruction may save many lives.

In February, 1889, I made an earnest plea for the Brand bath before the New York State Medical Society. The paper was discussed by two colleagues who condemned it. An editorial in the MEDICAL RECORD held that it "is improbable that heroic treatment would be accepted." These discouragements were offset by a request from Dr. Austin Flint, in charge of a division of Bellevue Hospital, in 1889, to explain the technique of the Brand bath to his staff. And it was at once adopted by him and brilliantly continued by Peabody and Ball, who taught it in their clinics and lectures. In 1890 I read a paper in the New York Academy of Medicine, a synopsis of which was published in the MEDICAL RECORD. The report of the discussion states that "Dr. Alfred Loomis said he would take the first opportunity of giving this method a trial," and "Dr. Delafield said that he had no real experience with the Brand bath." Both of these teachers began to teach this method at once, as I learned from reliable members of their classes. That their teaching had fallen on fruitful soil is evident from the fact that in 1902 Dr. Gilman Thompson's textbook on practice stated that the mortality from typhoid fever in the New York and Presbyterian Hospitals had been reduced from 16 per cent. to 6 per cent. by the Brand bath. And in 1903 Dr. H. P. Loomis reported to the Practitioners' Society that "the mortality from typhoid fever in the New York hospitals had been reduced 50 per cent. by the systematic use of the Brand bath." (MEDICAL RECORD, January 10, 1903.)

In 1886 the mortality due to typhoid fever from 1878 to 1886 in the New York hospitals was calculated by Dr. Delafield to be in 1,300 cases 24.66 per cent.; it is evident that the Brand bath had saved about one thousand lives in the hospitals of New York alone during the past fifteen years. Since the method can be more perfect only in private practice, when patients are subjected to treatment in the first week, the total saving of life would seem enormous. *That this was the result of instruction in hydrotherapy* of typhoid fever "goes without saying."

It is your mission to teach your students to save life; hence it is incumbent upon you to add hydrotherapy to the remedial armament with which you equip them for the battle with disease and death.

The attitude of the medical profession of the two countries towards the teaching and practice of hydrotherapy in chronic diseases is quite the reverse of that just depicted, for while it has been taught in Germany for more than a decade, Columbia University is the first to inaugurate a special course by a special chair of hydrotherapy. It may serve to incite you to a desire to emulate this example, to acquaint you with the reason for the sudden and phenomenal rise of chairs and clinics on hydrotherapy in Germany. For many decades Winternitz stood alone in Europe valiantly battling for instruction in hydrotherapy. True, Erb, Charcot, and Semmola practised and advocated it in their respective countries; they did not teach the technique, for the simple reason that *they* had not been taught this most important subject. They sent their

patients to specialists in hydrotherapy. The latter continued to exist precariously in a commercial sort of manner; it was aptly named by Winternitz "the stepchild of medicine." Suddenly there came a great revulsion, and—tell it not in Gath—the reason thereof was the *rise of the Naturärzte*, of whom Father Kneipp was the most prominent exponent. When I visited Germany in 1890 I discovered great alarm, because of the enormous inroads made by these empirics upon the income and status of the medical profession. Witness the plea of Professor Credé (*Berliner klinische Wochenschrift*, 26, 1895) insisting upon the necessity of applying hydrotherapy and other physical remedies in the hospitals, and pleading for instruction in these branches in the universities. He claims with clear discernment that *"if physicians were better versed in these branches, the field of operation of many quacks would be greatly curtailed."*

The serious inroads of these empirics upon the interests of the medical profession led to the appointment of a "commission for the revision of medical examinations," of which that eminent and practical teacher, Prof. Kussmaul, acted as chairman. His report (*Deutsche medizinische Wochenschrift* for 1896) clearly sets forth the alarming conditions which were existing and becoming more acute constantly, and suggests the remedy as follows: "It cannot be denied that the faith in prescriptions is waning among educated people, and that confidence in dietetic remedial methods and in the curative power of water is in the ascendant."

"Even the lower strata begin to realize how much may be accomplished with air, water, and proper regulation of habits of life without the use of medicine. A distrust against even the most powerful and indispensable medicinal agents is becoming more pronounced in large circles. Water is the chief agent, which has won steadily growing confidence as a remedy, because, unlike every other, it may be utilized in varied and changing temperatures and forms of application, for the most varied therapeutic purposes. According to the correct and skilful selection of the procedure, it regulates the circulation and distribution of blood, the production of heat and tissue change, and influences the respiration and the nerves.

"The treatment by water has passed its childhood days when it still staggered upon feeble limbs, and not infrequently did as much damage as is done by improper medication. Ripened experience and physiological knowledge have fortified the treatment and rendered it safe. Hydrotherapy, combined with diet, may undoubtedly bring about, or aid, in the cure of numberless acute and chronic diseases.

"Of hydrotherapy the young physician knows almost nothing when he leaves the university. Unfortunately he sooner or later may encounter discomfiture when an uneducated water doctor steps in and cures the patient after he has failed. Deeply chagrined and disappointed in his confidence in scientific therapeutics, he may pass into the camp of crude empiricism.

"Here lies a great gap in the education of our physicians; here lies the real cause of weakness in the contest for the favor of the public which sooner or later must be encountered by the physician with the layman who may have gotten experience in water treatment or be naturally adapted for it. A revision of our course of study must be made, above all things.

"The teacher of clinical medicine has now so many duties to perform in his work of instruction that no time is at his disposal for familiarizing his students with hydrotherapy. In order to instruct them more than superficially, distinct chairs and clinical divisions are required, in which appropriate cases may be treated by hydrotherapeutic procedures. These lectures could be combined with others on balneology and purely dietetic treatment, but, for Heaven's sake, let not this professorship be connected with that on pharmacology!" (*Deutsche medizinische Wochenschrift*, 1896.)

For the benefit of my colleagues, I wrote in the Medical Record, December 20, 1902 (Observations on German Therapeutics). "This energetic report appears to have borne good fruit. In Jena, Professor Matthes is appointed to teach hydrotherapy in connection with clinical medicine; in Leipzig, Professor Windscheid; in Halle, Professor H. Winternitz (not the Viennese Nestor). In Berlin Professor Brieger was given charge of the new Institute for Hydrotherapy, which he teaches practically and ably, assisted by Drs. Krebs, Lacquer, and Machant. At present clinical lectures are delivered with demonstrations on four days each week, 11 to 12 A.M." (Prof. Curschman, in Leipzig, showed me with much satisfaction his institute for physical therapeutics, and dwelt upon the value of the Wellenbad (wave bath) for increasing bremoglobin and blood cells in chlorosis and anemia.)

"I found quite a number of German, Austrian, Russian, Japanese, and Swiss students in attendance in the large pavilion (constructed for this purpose in the Charité grounds), in which there is an anteroom for polyclinic patients, dressing rooms, and a large room for douches, tub, and other baths. In this room Professor Brieger lectures on practical hydrotherapy. In another building Zabludowski teaches massage. Brieger also has another pavilion of thirty beds devoted to clinic (ward) patients, in which physical methods are chiefly applied. In the near future the outfit for hydrotherapy is to be greatly enlarged. The appointment of this man of exact science to teach hydrotherapy is fortunate for the development of this special branch of therapeutics. Any one who knows the career of Brieger must feel assured that its merits and failings will be cautiously and methodically studied and taught." Brieger was assistant to Frerichs, Onineke, and Koch, and has earned the pseudonym "Pfeilgift Brieger" by reason of his splendid investigations on the Avron poison of the Africans, at the instance of the Imperial Government. From correspondence with Brieger, it appears that the university has greatly enlarged his hydrotherapeutic institute "because of the increased number of students and patients."

In a letter received from Prof. Brieger yesterday, he writes: "I rejoice that hydrotherapy is, under your guidance, gaining ground in America and that it may soon become the common property of physicians as it is with us."

Not alone do most medical schools on the continent teach hydrotherapy, but the interest of this subject has awakened a literary activity in the special lines of physical therapeutics of which hydrotherapy is the chief. A number of special journals are now published, of which *die Zeitschrift fuer physikalische und diätatische Therapie*, by Leyden and Goldscheider, is the most prominent.

Thus has it come about that the "instinct of self-preservation," that most potent of all factors in life, has accomplished what Winternitz and a few earnest

and courageous men had failed to do. May I not urge upon you to draw a lesson from this brief historical résumé?

Happily Columbia University has taken the initiative in this movement for the betterment of our therapeutics. It is surely the most eloquent evidence of my estimate of the enormous import of the addition of hydrotherapy and its legitimate branches of physical therapy that at a time when I lack but a few years of my allotted three score years and ten I am devoting all my energies to the diffusion of knowledge on this neglected and yet momentous subject in the hope of training some younger men to perpetuate my work.

In response to a request I offer you the following outline of the course I have mapped out: Let me say here that ten years ago the late Professor Gaillard Thomas, a man who at all times had the interest of his profession at heart, suggested to the Dean of the College of Physicians and Surgeons the establishment of a chair and clinic on hydrotherapy, with the result that this course was regretfully regarded as impossible on account of the already too crowded curriculum. The elimination of non-essentials by the present faculty appears to have secured the necessary time for teaching this important subject. The senior class is divided into sections of ten or more who receive clinical instruction in the hydrotherapeutic department of the Vanderbilt Clinic on Mondays and Fridays. The first half of the clinic is devoted to demonstration of cases, the diagnosis is briefly dwelt upon, and the pathology and etiology are referred to with a view to point out the therapeutic indications. The aid of hydriatric measures and the reason for their employment, with or without drugs, in the concrete case are clearly gone into and the patient is treated in the presence of the students, who are encouraged to ask explanations of any obscure points. The latter half of the clinic is devoted to demonstration of the technique of hydriatric procedures and students are requested to practise them just as they are taught bandaging or other manual procedures in other clinics. The clinic is under the charge of a chief and two assistants and an attendant, who treats cases under their direction on Mondays, Wednesdays, and Fridays from one to four P.M. Only males are treated for obvious reasons. Female patients and cases not required for teaching are referred to the Riverside Association, Hydriatric Department, which is under my direction, and treats about fifty cases daily. Wednesday afternoon is devoted to experiments in hydrotherapy. A course of lectures during the latter half of the semester is also provided for in which I propose to dwell upon the principles of hydrotherapy and their practical application in disease. The final examination will contain not less than two questions on hydrotherapy.

Before concluding you shall witness a demonstration of our successful treatment of sciatica, which so often eludes medicinal and other measures. [The Steam Scotch Douch was demonstrated on a patient. The douche table was also demonstrated to show the importance and feasibility of exact "dosage" by changing the pressures of duration and temperatures.]

In conclusion let me admonish you to ponder upon the facts and deductions presented in this brief time, and to indulge in the hope that you may become imbued with the desire to arm your students with this additional potent weapon against disease and death.

135 West Seventy-third Street.

THE TREATMENT OF CHOREA MINOR, WITH ESPECIAL REFERENCE TO THE DANGERS OF THE ARSENIC THERAPY.

By HENRY KOPLIK, M.D.

NEW YORK

If one were to step into the consulting rooms of the practitioner to-day he would find that to a child with chorea minor the first drug prescribed in most all the cases would be Fowler's solution, and the first injunction to the parents of a patient suffering with chorea is to put the little unfortunate to bed. If the practitioner wished to be thorough, he would probably advise that the room be darkened, and utmost quiet in the surroundings of the little patient should be the keynote of management. So common is it to find this the therapy of the general practitioner, and so universal is the support he will get from the text-books, either special or general, for his procedure that the conclusion is forced upon us that chorea minor, as far as its treatment is concerned, has not received that attention of late years accorded to more innocent affections of early and late childhood.

If the progress of our knowledge of the etiology of chorea is still slow, there are some facts which it will be well to consider as universally recognized. The disease partakes in its course and manifestations the character of an acute infectious disease of self-limited duration. In a certain number of cases there develops from the outset a cardiac lesion, an endocarditis. In another set of cases this cardiac involvement may not be evident in the first attack, but will appear in some subsequent recurrence of the disease. In other cases we have the chorea as a sequel or accompanying a so-called articular rheumatic attack. That chorea minor therefore is an infection pure and simple, and that in some cases this infection is apt to attack the cardiac structures can no longer be a matter of doubt. In the face of this it is all the more surprising that the therapy of chorea minor has of late years not been in keeping with the above recognized facts. The therapy of chorea minor must sharply differentiate between the various sets of cases and their degree of severity. It is hopelessly incorrect to apply the same therapy in all cases, and it is no doubt productive of considerable harm to do so. It is certainly improper to apply the same methods to a case of chorea complicated with even slight endocarditis as to a case in which the heart is still free from involvement. It is likewise too severe a procedure to cause a case of slight, mild manifestations to undergo the same segregation we would apply to a severe paralytic chorea. There are certain cases in which arsenic acts as a direct poison, and others in which this drug is comparatively well borne, and it is the purpose of this paper to emphasize that the indiscriminate prescription of arsenic is even more harmful than the prescribing of quinine in every febrile case. Arsenic is more dangerous because its effects in a certain direction, strange to say, have entirely escaped notice. I refer to the kidneys. The toxic effects of arsenic have been known for some time through the writings of Osler, Lees, Martin, Marshall, and a number of writers, too many to note here. One of the most recent cases is that of Lees in which arsenical neuritis resulted from the administration of M XV of Fowler's solution for five weeks with resulting paralysis of the tibial muscles, and extensors of both wrists as well as pigmentation of the skin. In a report recently given

to me personally the number of cases of neuritis as presumed to follow the administration of arsenic in a certain hospital were so frequent as to cause a suspension of the administration of the drug.

I will not stop longer than to mention a few other symptoms, such as vomiting, edema of the eyelids, skin eruptions, with the above forms of neuritis as manifestations even under moderate dosage of the toxic effects of the drug. My own hospital service includes a large number of the various forms of chorea minor, both those complicated with or complicating endocarditis, the very mild forms, and those which are so severe as to be placed in a separate category of paralytic cases. In these cases the patients are unable to walk or use the extremities, and in some instances unable to lift the arms or lower extremities. In the severest forms of paralytic chorea the organs of speech are affected, the patients cannot phonate, and are mentally much depressed.

I have thus been enabled to form a definite picture of the disease in all of its manifestations at the bedside, and to formulate the methods of therapy along lines consonant with our knowledge of the disease. It has been my custom in all cases of chorea to watch the action of the kidneys, more especially in cases which are receiving the arsenic therapy. My method has been to begin with one drop three times daily of Fowler's solution and to increase *one drop* a day (not three times daily) until a point has been reached which is called tolerance, that is, until there is a slight puffiness of the eyelids. As a rule, with older children ten drops three times daily is a maximum dose. A close study of the urine revealed a most interesting phenomenon. In some cases before any stomach uneasiness or puffiness of the eyelids were apparent a slight trace of albumin appeared in the urine. If the administration of the drug was continued casts would appear, and in some cases blood cells. At first the cases were regarded as exceptional. In none of them was there any cardiac lesion, and in all the cases the urine not only was free from renal elements on admission, but cleared up on suspension of the arsenic. It soon became evident that these cases were not exceptional, but formed a marked proportion of the cases of chorea which were receiving arsenic. In some cases the dosage was quite small, five drops three times daily to a child six to eight years of age, the drug was suspended in some cases and, as the urine cleared, the administration cautiously begun until it was found in a few days that the kidneys again reacted and then the drug was permanently suspended.

Another interesting feature was recently brought to our notice. Albumin and casts appeared in a number of cases in which the administration had been kept within bounds of moderate dosage. It was suspected that the preparation of Fowler's solution might be unstable, and indeed analysis showed our Fowler at that time to have evaporated to an extent as to make it fully twenty-five per cent. stronger than the officinal preparation. Thus unless freshly prepared Fowler's solution gathers strength. Although this was the case with a recent preparation, the dosage allowing for the increase of strength only exceptionally ran beyond ten to twelve drops three times daily. We have proven then to our satisfaction that in a definite number of cases Fowler's solution is an irritant to the kidney, causing the excretion first of a trace of albumin, which in time becomes more marked, and is then accompanied by casts and blood cells. In view of the above, long before a puffiness or edema of the eyelids occurs, we have in a study of the urine a most delicate test of the point of tolerance for arsenic. That is, when a trace of albumin occurs in the urine it is time to stop the drug no matter how small the dose or how excellent the general condition as to the other signs, such as the absence of puffiness about the eyes or gastralgia. So convinced am I of the delicacy of this test that I now administer arsenic with a daily examination of urine, except in cases in which the dosage of arsenic is exceedingly small, approximating what is for the sake of a better term called tonic dose.

Of the recognized treatment of chorea not much can be said in praise and quite some in criticism. The total disregard of child nature which causes the complete isolation of a child in a dark room for an indefinite period seems well nigh brutal, yet this is what is done, and what I find of daily occurrence. Children need air and sunshine in health and disease—to deny it to them on the ground that by thus doing we quiet the nervous system seems to me hardly a tenable proposition. In fact most children are made much worse for fretting and worry if put in what is practically solitary confinement. Again to give a drug such as arsenic to a point of tolerance, disregarding the ill-effects of the drug on the general well being, the appetite, the stomach, the nervous system, the kidney without even the supporting conviction of a specific effect seems to me intolerable. Yet I find this is daily practice simply because it has been recommended from authority to authority. No one seems to have had the courage to look into the action of such a powerful drug on the disease or on the economy of the child.

What, then, will be the basis of a rational treatment of chorea minor. In the first place it should be granted that the disease is a self-limited one and the most we can do is to endeavor to protect the patient against anything, such as undue excitement or exposure, which might exacerbate symptoms. We know that a mild form of chorea may pass rapidly into a severe form of chorea insaniens under the influence of undue nervous strain or excitement. We should place the patient under the best hygienic management and should remember that drugs at the most only aid us to attain the above ends.

The mildest cases of chorea minor in which there are twitchings to a limited degree, and in which the patient is able to be up and about, are best managed by a modified rest cure. The patient retires to bed early and arises late in the day (10 A.M.). Before rising a light breakfast is taken in bed. Before breakfast the patient is given a warm bath and a cold water rub down, is put to bed, and after an interval of an hour partakes of the above light breakfast. The patient is then rested and at 10 A.M. arises and is indulged in the ordinary duties of childhood. At midday, after luncheon, the patients are encouraged to rest whether they sleep or not for an hour, and they may again indulge in mild play or read. Early in the evening the patients are put abed (5 P.M.) and at 6 P.M. a light supper is partaken of, and after an hour of reading or occupation in bed the little ones are encouraged to sleep.

This is the main regimen for mild cases without any cardiac involvement. It is unwise to give such cases increasing doses of Fowler's solution. They certainly are not benefited by it. More to the purpose is the constant administration of a sedative, and one which can be utilized with considerable

effect is sulphomethylmethane (trional), 5 grains three times daily, or chlorotone in very small doses, the final dose being given just before retiring. Light nutritious food must be chosen, and of these milk and eggs with very little meat should be the mainstay of the diet. If there is sleeplessness to a marked degree a dose of the mixed bromides is quite sufficient. Open air, play without undue excitement are more in accord with child nature in these cases than isolation, darkness, and depressing surroundings. The latter only aggravate the symptoms of the disease.

The moderately severe cases are those in which the chorea is seen to interfere with the mental stability of the patients; they become morose, melancholy, or are subject to outbursts of temper. The choeric movements interfere with coordinate locomotion, objects are dropped, and speech is notably affected. Such cases are put abed, but not completely isolated; they should be surrounded with quiet, but even here a little play is useful therapeutically. It is unnecessary to darken the room except when asleep or inviting sleep. If there is slight or marked cardiac involvement no arsenic should be given; such cases do very badly under arsenic therapy; the appetite is interfered with, and I really believe the cardiac condition is aggravated by the stomach distress and nausea caused by physiological dosage of the drug, not to mention the kidneys. In these cases, if well borne, moderate doses of sodium salicylate are useful for the alkaline effect only and possibly as a prophylactic if there is a rheumatic tendency. If the salicylate of sodium is badly borne, no drug beyond a sedative given in the mild cases should be used, nor should digitalis be given to drive the heart. Of great use in these cases, it has seemed to me, was the administration of strychnia as a bitter tonic. In fact, in some cases it is the only drug we should turn to.

The hygienic management of the mild cases is continued in these cases. If arsenic be given it should be only in cases free from cardiac involvement. Inasmuch as some will insist on the use of arsenic, it should be given with frequent examination of the urine in order to detect any sign of deleterious action of the drug, as above indicated. As I have repeatedly said, arsenic in my hands has never cut short nor modified the course of chorea minor, and if I do turn to it it is only to use it in small doses. The use of arsenic in ambulatory cases is to be deprecated.

Of great utility in cases of the second class is hydrotherapy. Children take kindly to this form of hygienic and toning treatment. In the morning, an hour after the early breakfast (glass of milk and crackers), the little patients are given a pack at 100° F., and the temperature of this pack is gradually lowered by the addition of cold water on the pack, the patient, pack and all, is wrapped in a warm blanket for fifteen minutes, and then the blanket removed, also the pack, and a good rubdown, with cool water, given to secure reaction. A child's skin should glow after such procedure, and complete rest is enjoined until the second and full breakfast, which may be given an hour after the completion of the pack treatment. A little quiet play is useful in bed cases, but if play is accompanied by undue excitement, it must be restricted. Visitors in my wards are astonished that choreas are not confined in darkened rooms. Why should they be? . . . it aggravates the disease. Children who are sitting up in bed like to see and talk to other children; to deny them this is a hardship and not in accordance with their natures. They do better for the agreeable quiet companionship of other children. The diet in these cases, as in those of the first class, should be light and assimilable, meat and vegetables in moderate quantities being allowed.

The severest forms of chorea minor are those in which speech is lost. The children are mentally depressed, there is absolute loss of coordinate motion, there is a constant motion choreic of all the body, and in severest forms there is a paresis in which the extremities either cannot be moved at all or but to a limited extent; any attempt to move them only calls forth choreic movements of the face, tongue, and trunk. Some of these cases can neither raise nor lower the extremities. When any approach is made the patient becomes very uneasy; either cries or becomes extremely restless. Such cases cannot support the body weight, they are for the nonce paralytic, and are indeed called paralytic chorea. In most of the cases of this class there is no endocarditis, though the heart action may be extremely weak. In these cases I think the use of arsenic is fraught with danger, for, though we have means of judging the limits to which the drug may be pushed, we may go a little too far and add a neuritis to our already helpless picture. In these cases more complete isolation is indicated than in cases of the previous class, no communication should be allowed with other children, and yet there should be sunshine and air. Inasmuch as some of these cases at first or in course of the disease are thrashing about in bed and are apt to injure themselves, the sides of the bed should be padded and the knees and elbows bandaged so as to avoid abrasions, which otherwise would occur. In girls the hair should be neatly done up in a species of cap to avoid matting. Here the sedative treatment, hydrotherapy and strychnia, lend their best aid to the physician. These cases, which I may in a future communication dilate upon more fully, are very trying to the physician and nurse, and only patient waiting, careful diet, and nursing are eventually rewarded with success. In these cases, after the choreic symptoms quiet down and mentally the patients are depressed, much benefit is attained both mentally and otherwise by getting the patients out of bed in an invalid chair, in a sunny room, and with the intercourse of quiet children.

I have in this paper not touched upon those cases of chorea minor affected with endocarditis, or those rheumatic cases, so-called, which are complicated with chorea, because I wished to point out clearly the treatment pursued successfully in uncomplicated chorea minor and to demonstrate as fully as I could the dangers of arsenic and the futility of its use in this disease.

692 Madison Avenue.

MEDICAL AND SCIENTIFIC WORK IN NEW YORK STATE CHARITABLE INSTITUTIONS

By ANDREW MACFARLANE, M.D.,

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The consideration of the care of the insane in this State, involving as it does the welfare of 28,000 of the most sadly afflicted of mankind, the expenditure of $6,000,000 annually and provision for constantly increasing numbers is a subject which should appeal to the economist, the philanthropist, and the scientist. The evolution of the management of the insane

*Read at the New York State Conference of Charities and Correction, November 13, 1907.

has been from the county houses to State custodial oversight, as at Willard and Binghamton, then to scientific medical care. The ultimate goal of medical and scientific work must be the better understanding of mental abnormalities with the diminution of insanity by the prevention of the passage of the acute, curable forms of insanity into the chronic incurable types.

The removal of the insane from the county houses by the State Care Act in 1890 to the direct control of the State placed the responsibility for the well-being of these unfortunates upon the people of the State, and this real white man's burden must continue for all time.

The first effect of this humanitarian impulse was to crowd all the State Hospitals with a mass of patients for whom little medically could be done, thus essentially interfering with proper classification. Gradually the needs of the acute, curable insane were recognized. Schools for more efficient nursing were established, infirmary wards instituted, laboratories developed, more scientific case records evolved, and medical conferences frequently held.

In spite, however, of these great advances during this time, the medical care of the insane in State Hospitals has not progressed with the same strides as have the other branches of medical science. The reason for this is partly inherent to the work itself and in part the result of conditions which might be remedied.

The superintendents of these enormous institutions with two thousand patients or more are no longer able to devote themselves to the strictly medical care of their patients. Their time is necessarily taken up with the consideration of the general affairs of the institution rather than the direct medical care of the individual patient. As a result there is a tendency for the entire staff to lack that inspiration and impetus to clinical medical work which only the head of an institution is able to give. Then too physicians in State work lose the stimulation of competition and outside rivalry which develops the best in a man. They too often also miss the joy of their work and the ennoblement which comes from seeking to advance human knowledge no matter what the subject may be.

Physicians in the outside world who do not take part in the scientific discussions of their societies, who do not seek to broaden their knowledge by occasional post-graduate work, who do not aim to become progressive by attaching themselves to some general hospital, drift along, are distanced in the daily struggle, and at fifty are practically in the same scientific position as they were at thirty. Human nature is the same in State Hospitals except that promotions there are too often made on account of duration of service rather than medical efficiency. It would seem as if there might be a method devised without doing injustice to anyone whereby the drudges, the drones, and the commonplace should not altogether stand in the way of the alert, the progressive, and the efficient. The good of the whole service should be kept in mind and not entirely the welfare of the individual.

It is a fair assumption that at least nine-tenths of the patients in State Hospitals are the chronic insane. The care and management of this greatly preponderating majority must give its impress to the entire institution. The variety of occupations, the care of the farm, the question of buildings, the forms of amusement become of much more seeming importance or at least urgency than the examination of the blood or spinal fluid, the determination of changes in metabolism, the careful analysis of statistics, the keen observation of psychological processes, and the scientific correlation of clinical symptoms at the bedside with pathological findings at the post mortem.

In spite of the fact that the State is ever planning and building new institutions, the number of the insane in the State is increasing more rapidly than the accommodations. The inevitable result everywhere is overcrowding with unsatisfactory classification and loss of medical efficiency. The public, the medical profession, and the State officials must grasp the fact that the care of the insane in New York State is to-day the biggest kind of a problem and that it is a medical problem. True economy consists not in petty cheese-paring, but in a breadth of view which seeks the greatest good for the largest possible number. The solution of this problem lies either in a general hospital for the acute insane, in the hospitalizing of the old asylums, or part of it, or in both.

The State has recognized both these remedies and has or is constructing reception pavilions for the acute, curable insane in connection with the State Hospitals at Buffalo, Rochester, Utica, Middletown, and Poughkeepsie and has also appropriated $300,000 for the construction of a psychopathic hospital in New York City.

The effect of both of these tendencies is to separate and isolate the insane from the sick people and to unconsciously maintain the idea that the insane are different from other sick people and have no connection with general medicine.

Germany, which has taken the lead in modern clinical medicine, is also in the van in the science of psychiatry. The great names in Germany are not those in charge of large institutions, but the directors of small psychiatric clinics connected with a university general hospital. Kraepelin at Munich, Wernicke at Breslau, Krafft-Ebing at Vienna, Zieben at Jena, occur to the mind at once as the leaders in the science of insanity. They have each a small number of acute cases, who can be closely observed, thoroughly studied, and scrutinously examined in every detail. The resources of a great university—clinical, experimental, pathological, are at their command. Would anyone for a moment doubt that the care of the insane under these conditions was not a purely and strictly medical question? Germany with its nineteen famous universities has nineteen psychiatric clinics to which the acute insane are sent from their respective districts. How can New York State meet this sysyphean problem?

If the superintendents are unable to give time to the individual cases, then the first assistant physician's position should be elevated and he should be held responsible for the medical work accomplished. Just as in one of our huge modern vessels there is a captain, the executive officer, and a chief engineer who is responsible for the working of the vessel, so in these enormous institutions the superintendent could confine himself to the executive work and the chief medical officer to the direct medical oversight of the patients. Such an arrangement would provide honor enough for both. The other assistants would be stimulated to special research and as a result of their work, could be placed in charge of their reception pavilions and would be in line for chief medical officers.

Although National and State service by its routine is often destructive of original work, still there are enough exceptions to prove that it is not impos-

sible. I need only mention the British army surgeon, Donald Ross, who worked on the problem of malaria in India when the perspiration from his head rusted the microscope he was using, the fatal dangers to which our army surgeons, Drs. Reed, Lazear, and Carroll gladly subjected themselves in solving the problem of yellow fever. There is no reason why under proper stimulus the same results should not be shown in our State Hospitals.

There are two forces in nature affecting every organ and every human creation. Their harmony makes the perfection of the universe and the wellbeing of every organism. They are the centrifugal and centripetal forces. It is the same question, old as the race, even the universe, centralization and decentralization.

The care of the insane was at first local, then it became centralized and the question now arises whether it may not with profit be decentralized to at least a slight but important extent.

The cry for the human when ill is for home and it takes no stretch of the imagination to picture the agony of one of these poor creatures taken from home to a distant city and placed in a huge structure with strange surroundings. The State has appreciated this need and has appropriated the ridiculous sum of $300,000 for a psychopathic hospital in New York City, while Munich with one-quarter the population and probably less than one-tenth the wealth has spent over $500,000. A similar sum would easily construct a psychopathic pavilion in connection with general hospitals in at least ten of the cities of this State. To these psychopathic pavilions every insane patient from that section could be sent. If after a few days' observation the patient was seen to require State Hospital care, he could be regularly committed to such a hospital. If it were determined that a stay of a few weeks would probably be sufficient to induce recovery, then no commitment would be necessary and the patient would escape the stigma of ever having been officially declared insane.

The ownership of these pavilions would remain with the State which would necessarily exercise some control over its general management. Such detention pavilions under local control have been in operation in Bellevue for years, in Albany for four years, and accommodations for the acute insane in general hospitals are being arranged in Auburn and Rochester. The University of Michigan has a pyschopathic pavilion in connection with its university hospital.

The State might easily and successfully train in its State Hospitals men who would accept the superintendency of general hospitals and the especial charge of the psychiatric clinic. These men after a term of service might be made eligible to superintendencies of State Hospitals. The inevitable result would be that the medical care of the insane would be placed on the highest possible plane.

That State Hospital trained physicians make good executive heads of general hospitals is demonstrated by the successful administrations of Dr. Henry Hurd at the Johns Hopkins Hospital and Dr. Goodwin at our Albany Hospital. The reverse that superintendents of general hospitals may become efficient officers in hospitals for the insane is shown by the brilliant career of Dr. Cowles who went from the management of the Boston City Hospital to the McLean Hospital and has since played a prominent part in American psychiatry.

The growth of knowledge is through the diffusion of knowledge and the marvelous advances of the past half century are due to the fact that workers all over the world know almost instantly the results obtained by their coworkers in every part of the globe.

Our knowledge therefore is nothing more nor less than the collation and deduction from findings or statistics. We know that the sun will rise to-morrow because it always has risen. We know that general paresis and paranoia are chronic, progressive, incurable diseases because they always have been. There are many facts, however, about insanity which are still unknown or at least very hazy, and we need statistics to shed light upon these dark places. What effort is our State with the enormous material in its possession making along this line?

Would not one or two statisticians, devoted to this work, after a time illuminate some of the problems connected with the etiology and prevention of this affliction which might be of incalculable value to the human race?

One word more—It is a well known fact that every successful business house takes an inventory yearly of its business in order to avoid the mistakes of the past and to ascertain exactly their present position. Some progressive firms even employ an outside expert at a large salary to investigate their methods of conducting business and to recommend changes which would be more economical and more efficient. The State could copy these methods of successful business and after seventeen years take stock of her work.

A commission consisting of members directly connected with the State care of the insane, of well known neurologists and general practitioners, of level-headed and broad-minded laymen might with great profit even at considerable expense investigate the present status of the care of the insane, ascertain the best methods of treatment, and provide a definite plan to meet this ever-present and constantly-increasing problem.

No greater blessing could come to the insane and also to the State than to maintain the work of her State Charitable Institutions on a truly medical and thoroughly scientific plane.

198 Washington Avenue.

PREVENTION OF DEATH DURING ANESTHESIA BY CHLOROFORM AND ETHER.*

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One of the most horrible occurrences that can happen to a physician is the death of his patient during anesthesia. It is unfortunately true that in a certain indeterminate number of cases, death will occur during anesthesia by these substances, when every precaution has apparently been taken and the anesthetic has been given by trained experts, yet I believe that the number of the fatalities we now meet with is greater than can be properly accounted for, and arises from the neglect of certain precautions, which it is the object of this paper to endeavor to point out.

As yet we have discovered no perfect method of producing anesthesia. What we want is some substance that is capable of producing insensibility to pain without danger to life, and it is to be hoped that in time our chemists may discover it.

*Read before the Medical Society of the District of Columbia, October 23, 1907.

It is the belief of a great number of the members of the medical profession that anesthesia by ether is almost devoid of danger to life. This belief is not shared in by the writer, and in his opinion anesthesia by ether is nearly as dangerous as that by chloroform. It is true, death does not usually result as quickly during ether anesthesia as it does during the administration of chloroform, yet the fatality is just as certain to result, in a number of cases, in the one as in the other.

Death by chloroform is usually speedy and almost instantaneous. The respiratory and cardiac centers are so overwhelmed by the poisonous vapor that the patient sinks quietly into eternal sleep. Death by ether is usually, though not always, differently produced, and occurs in one of two ways.

In the first method of death it may occur in a way very much resembling that of death by chloroform, and there is sometimes asphyxia by the concentrated ether vapor, with speedy death. The writer has seen ether given for anesthesia in a most reprehensible manner. He has seen the ether cone held over the face of the patient so closely as not to allow the proper admixture of air in spite of the struggles of the patient. He objects to every complicated apparatus for the induction of anesthesia, and objects even to the cone, for in a prolonged operation the cone often becomes so wet with the ether as to give a too saturated vapor to the patient. A simple metallic framework covered with one layer of muslin is much better, and the drop method of anesthesia, should always be used, whether chloroform or ether is the agent employed.

One reason for the fatality during anesthesia has been that undergraduates, in many of our hospitals, have been allowed to administer the anesthetic. Anesthesia should be regarded as a major operation, which always involves danger to life, and should always be administered by experts, and under the strict supervision of the surgeon.

Another and slower method of death during ether anesthesia is very different from the first, and may occur at any period, from five days to a month after the period of anesthesia. This is caused by the ether vapor in prolonged anesthesia being absorbed in large quantities, producing a form of acute nephritis, which may cause suppression of the urine, coma, convulsions, and death.

About twenty years ago the great English surgeon, Lawson Tait, wrote an article describing the histories of several cases of deaths, occurring at periods varying from a few days to a month after surgical operations, in which ether had been used as the anesthetic. This condition admits of ready explanation, when we recall that the renal artery is one of the largest branches given off from the abdominal aorta, and hence furnishes a ready vehicle for the absorption of the ether vapor.

Deaths after ether anesthesia may also occur by the irritating effect of the vapor upon the bronchial mucous membrane. When we consider the enormous surface exposed by the terminal bronchi and air-cells to the action of the atmosphere and to any vapor mixed with it, this is not to be wondered at. Dr. Dalton estimated that the air-cells of the lungs exposed a surface of sixteen hundred square feet.

Ether vapor is to many persons excessively irritating and produces a form of bronchitis or bronchopneumonia, which in a few days may prove fatal.

How can the first method of sudden death from either chloroform or ether be averted?

The first step, and one to which I attach more importance than any other, is the rapid inversion of the patient and preferably in the prone position. Late researches on the resuscitation of drowned persons have shown that the prone position for the revival of such patients is much better than the supine, and that artificial respiration in that position is much more effectual.

What is the mechanism of the sudden death in these cases? I believe that it is directly caused by the column of venous blood filling the jugular and innominate veins, thus pressing upon the auricle and preventing it from opening. When the patient is rapidly inverted (with the head downwards) the venous blood drains back toward the brain and allows the auricle to open and the circulation to begin. Of course, this must be done instantly, for seconds, not minutes, count for life or death. I do not believe much in the hypodermic use of strychnine or nitroglycerin in these cases, for before the drug can be absorbed, the patient is usually dead.

The hypodermic use of suprarenalin solution is highly recommended in this class of cases, but I have not had the opportunity to use it. A faradic battery is often of inestimable service and should invariably be at hand when a patient is about being placed under an anesthesia.

I well remember a case of threatened death during the inhalation of a mixture of chloroform, alcohol, and ether (the A. C. E.), which taught me a useful lesson. A woman patient in Freedmen's Hospital required a simple incision, and at first it was not intended to use any anesthetic. The patient, however, objecting, with inexcusable carelessness (without calling for an assistant physician who was in the next room) I reached to the side table and taking the inhaler, poured an ounce or two of the mixture in the cone and caused the patient to inhale it. To my horror the patient, after a few whiffs of the mixture, suddenly collapsed. Her breathing ceased, her heart stopped beating, and she was practically dead.

A man can think a good deal in a few seconds at a time like that. There was no time to call for assistance, so I quickly threw the patient over my shoulder, with her legs in front, and the rest of the body, head downwards, hanging down my back. After two or three minutes, which seemed to me like hours, had been passed in this position, I heard a gasp of returning breathing, which seemed to me the sweetest sound I had ever heard; the patient rallied without any further trouble.

I have seen many narrow escapes from death during anesthesia, but the only case of death I remember that actually occurred while I was present was in the case of Rev. Father Boyle, in Providence Hospital, some years ago. In that case, which was during ether anesthesia, the face of Father Boyle turned perfectly black. In such a condition of venous stasis, I would suggest, if other means fails, the opening of one of the jugular veins to relieve the pressure of the column of venous blood which shuts up the auricle and stops the circulation.

The delayed death which occurs from the poisonous action of the ether vapor upon the kidneys and the bronchial mucous membranes is largely preventable, and is due, I believe, chiefly to the prolonged anesthesia. I would earnestly plead for rapid surgical operations. When an operation is prolonged over one or two hours the danger to the patient is enormously increased, not only from the ether vapor but from the toxins which are accumulated in the system during anesthesia.

I never saw a death occur during anesthesia while on duty as Medical Officer during the Civil War, 1861-5. The anesthetic employed during the Civil War was mostly chloroform, but the A. C. E. mix-

ture was used considerably in the latter stages of that terrible conflict. I had an abundant experience in the induction of anesthesia, both during the Civil War and for many years subsequent to this period.

I reported for duty on May 7, 1862, as Acting Assistant Surgeon, to the Surgeon General's Office, and had expected to be ordered to join the army of General George B. McClellan, who was then waging his disastrous campaign on the peninsula in front of Richmond. Very much to my disgust, however, this order was countermanded, and I was ordered to report to Surgeon John E. Summers, Medical Director of the Hospitals in Alexandria, Va. This change of program was, however, ultimately greatly to my professional advantage. The disastrous campaign of General McClellan in 1862 culminated in the Northern Army being driven back from the vicinity of Richmond, to the region of country in front of and adjoining Alexandria, Va. The Battle of Manassas (or, as it is often called, the Second Battle of Bull Run), the Battles of Cedar Mountain, Chantilly, and the two battles in front of Fredericksburg, were all fought within a short distance of Alexandria.

The rush of wounded and sick soldiers to our hospitals after these battles was almost indescribable. After taking possession of every empty house, church, school-house, and public building in Alexandria for hospital purposes, after the Battle of Manassas, we fed in one day twenty-two hundred sick and wounded soldiers who were still in the ambulances and army wagons in which they had been conveyed to Alexandria, and who could not be housed for lack of accommodation.

There is one fatality that has not been mentioned, which is the result of chloroform anesthesia, and this is acute yellow atrophy of the liver and kidneys. The following extract from the MEDICAL RECORD of October 19, 1907, is illustrative of this point: Guleke's patient was a robust young woman on whom a herniotomy, lasting half an hour, was performed under 25 c.c. of chloroform. The anesthesia was unusually smooth; hernial sac contained only omentum. Jaundice and cholemia developed in less than twenty-four hours, and at the end of ninety-two the patient died in coma after delirium and convulsions. The microscope revealed extreme destruction and fatty degeneration of the cells in the liver and in the convoluted tubules in the kidneys. The chloroform was evidently responsible for the trouble, as infection and thrombosis could be excluded. The same chloroform, used for other patients the same day, caused no by-effects in other cases.

All the similar cases of yellow atrophy of the liver on record, following administration of chloroform terminated fatally in from three to six days. The patients were generally young and robust. It is noticeable that the operations had always been abdominal and that the patients were moderately or extremely fat. Other facts are cited which suggest that an unusually fat liver is less resistant to chloroform than one less so."

Finally, to recapitulate the precautions in giving an anesthetic:

1. Give the ether or chloroform drop by drop.

2. Operate rapidly, thus diminishing the time of anesthesia.

3. Invert the patient, in case of threatened death, preferably in the prone position.

4. Have a faradic battery ready.

5. Use artificial respiration.

WRITER'S CRAMP; WHAT IT IS AND HOW IT CAN BE TREATED BY THE FAMILY PHYSICIAN.

BY S. H. MONELL, M.D.,

NEW YORK.

THIS condition is usually classed with the neuroses and referred to neurologists, but the experience of fourteen years in the study and treatment of cases leads me to the reasonable conclusion that it is a state of chronic fatigue and should be treated as such. My excuse for again presenting this subject is the desire to assist the ordinary practitioner to relieve his own cases, for sufferers are scattered everywhere, there being no fewer than fifty thousand in the United States, most of them working for small salaries and unable to travel far or pay a specialist.

If I recollect rightly the MEDICAL RECORD in the first thirty years of its publication printed but one article on writer's cramp by any physician.

About ten years ago the writer prepared a monograph covering treatment with resources then in use, but it has long been out of print and the introduction of newer apparatus has affected favorably both the prognosis and methods employed. The need of calling attention to present means of affording relief is brought to mind by the following letter which prompts me to add to what I have hitherto written:

Stratford, England,
November 14, 1907.

Dr. S. H. Monell, Dear Sir—Seeing your book, "The Cure of Writer's Cramp" sold by a London firm of publishers, I bought the same, as I am troubled with writer's cramp, both in telegraph keying and writing. It was a disappointment to me to find that it would have to be a case of going to New York for treatment. This is a course which is impossible for me for several reasons: first, financially, second, if I gave up my present position I couldn't obtain another, and also that I depend on my present post for a living. I write to you under the hope that possibly you may know some one either in London or England who is qualified in giving your course of treatment. I am 27 years of age and have been troubled with the cramp for close on six years, till now keying and writing are both absolute torture: in fact nearly a physical impossibility. I have tried everything and anything but it is no good and I am threatened with dismissal for incapacity. I feel depressed and miserable.

Possibly when looking at my writing you might think that my cramp isn't as bad as I make out, but this letter is an hour's effort."

Signed.....

Appeals of this kind are pitiful and sufficiently warrant the space taken in briefly telling the home physician what he can do in ordinary cases.

First, an explanation of the real character of writer's cramp will simplify matters in the minds of many who have puzzled over theories as to whether the "neurosis" was central or local. When a healthy person tires his arm by unusual work for a brief time, the muscles have the power to recover from the lameness and exhaustion by natural rest, especially if aided by a little stimulus to the circulation. But this natural power of recuperation will not stand too much abuse, and has its limitations. If overtax is continued day after day in excess of the elastic capacity of the muscle fibers the nutritive regeneration of the tissues does not keep pace with the

waste of wear, and rest becomes less and less restorative, because incomplete.

In time then in severe cases nature ceases to eliminate the poisons—the toxins of combustion—that result from work, and by remaining in the tissues they irritate and enfeeble the muscle fibers and their nerve supply so that aches, pains, heaviness, stiffness, lessened rapidity of contraction, lack of endurance, nagging irritability, and gradual "loss of grip," cramp, spasm, and palsy, mark the downgrade of the overworked arm and hand.

When the same set of muscles and the same coordinating functions of brain centers work day after day in writing or telegraphing at a rate of speed beyond the normal endurance of the given person, there develops a chronic state of fatigue which finally becomes a localized "disease," inasmuch as the person so affected cannot restore the functions of the impaired muscles to normal by either rest or exercise.

The main indications for treatment are, broadly, two: the elimination of the toxic products which result from high pressure muscular work and part of which gradually stagnate in the tissues, and the improvement of the nutrition of the affected tissues so that the powers of recuperation are renewed.

The first of these indications is admirably met by means of the modern electric light radiant-heat cabinet bath, and if this is not available for the practitioner he should advise a course of Turkish baths as the next substitute. The superiority of the radiant-heat bath over the conducted heat bath is, however, demonstrated by many tests which show that it produces nearly double the amount of perspiration in the same length of time, with an increased elimination by the skin and an important stimulation of vital activity. The living tissues are porous to rays of "radiant heat" while conducted heat penetrates more slowly and with less of the effect desired. This elimination must underlie direct treatment to make it satisfactory. Prior to my demonstrations of this in practice the results secured were rapidly obtained only in commencing cases, while the treatment of the last stage of total disability was tedious and exceedingly difficult.

The measures of direct treatment are comprised in the resources of electrotherapeutics. In employing these resources there are but three requisites to success; a determination of the therapeutic actions which must be set up in the tissues to promote their restoration to normal; the selection of the means of best setting up the desired actions, and the technical knowledge of how to make the selected agent do the therapeutic work that the operator intends it to do.

No special skill, apart from a general command of the resources of modern electrotherapeutics, is therefore required to enable the physician to undertake a case of writer's cramp if he will first acquire an understanding of the conditions to be treated and the indications present in the given case. It is simply the question confronting us in all practice, the question of meeting the indications with the right means. In former days it was the custom to describe mechanical methods as if the prescription for the case was a "method," regardless of individualizing as to dosage, actions, and the fundamentals of medical prescribing—especially of prescribing electric currents. But to-day emphasis need only be laid upon the indications. The practitioner must possess the knowledge acquired by study of how to make each and every "tool" he uses in either surgery or medicine do what he wants to make it do, and if he lacks this rudimentary knowledge he will not undertake an appendectomy and he ought not to undertake to set up alterative and nutritional actions in diseased tissues. If he does he will deserve to fail of the desired results.

But with this essential fundamental knowledge of physiological actions and how to produce them at will with selected resources of electricity, the practitioner can accomplish much with any of the modern appliances which will give him the means of dose regulation and quality of current action that these cases need. The writer has variously employed with success all the currents. The galvanic current, currents from fine high grade faradic coils, the great resources of static electricity, and high frequency apparatus can all be made to do the work demanded, provided the given apparatus has efficient therapeutic resources and the means of applying them.

In most cases it will be necessary to improve the quality of the blood as well as the circulation through the affected tissues, for anemia, if present, retards the regenerative processes. A "sedative-tonic" action is also indicated to allay irritability and remove aches and pains. Tonic contractions of the affected muscles are always needed but must be carefully "dosed" to avoid the reactions of fatigue. The physician who is well grounded in the ordinary principles of current-control, actions, and dosage can easily apply his knowledge to the relief and improvement of writer's cramp, and in early cases can rapidly restore the arm to normal endurance and comfort. The mental relief to the patient will be incalculable.

230 West One Hundred and Seventh Street.

Bacteriological Investigations in Cerebrospinal Fever.—An interesting report has just been issued by Dr. R. M. Buchanan, bacteriologist to the city of Glasgow, in connection with cerebrospinal meningitis. For some time past cerebrospinal fever "contacts" have been subjected to a systematic examination for evidence of the meningococcus, and for this purpose swabs have been taken of the secretion of the nasopharynx. The principal difficulty has hitherto been that in the throat there exist several organisms closely resembling the meningococcus, but Dr. Buchanan believes that he has now obtained a nutrient medium which serves to demonstrate the organism in the throats of a certain proportion of patients and "contacts" within two to three days. During the month of May eight cases of cerebrospinal meningitis came under bacteriological investigation for verification of the diagnosis, and in seven of these the meningococcus was demonstrated. The "contacts" examined during the month numbered 81, representing 20 families. In 12 of these families an organism was found in the throat, which had all the microscopical and cultural characters of the meningococcus. In five of the families it was found in one individual, in six of the families in two individuals, and in one family in three individuals—giving 20 positive results in the 81 "contacts." These results have principally been got in adults. In addition, the nasopharyngeal secretion of seven patients and four convalescents—all verified cases—was examined. The meningococcus was found in three of the patients on the twenty-third, twenty-sixth, and sixty-first days of illness respectively, and in all the convalescents on the seventeenth, thirty-fifth, fifty-sixth, and seventy-fifth day from the onset of their respective illnesses. These results serve to indicate that the disease may be carried and spread by individuals who offer no evidence of its presence and that it may remain for a long time in the throats of individuals who are recovering from the disease.—*The Lancet.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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AN UNNECESSARY BILL.

A BILL purporting to be in the interest of humaneness has recently been drawn up for introduction at the present session of the New York Legislature. The promoters of the bill have been sending canvassers about among the members of the medical profession in this city endeavoring to obtain signatures to a petition favoring the passage of the measure. As the bill, on hasty reading, seemed to be moderate enough and devoid of oppressive features, a number of signatures were obtained, but we understand that many of these were withdrawn by the signers as soon as they appreciated the real significance of the movement. Even a medical contemporary was led to commend the measure editorially, but withdrew its support the following week. This is the only basis for the statement that the medical profession of the State is in favor of the proposed legislation, and the assertion that has been made that the New York physicians themselves drew up the statute is entirely erroneous. The New York physicians are opposed to it and the more they study it the stronger is their opposition.

It may not be known to all of our readers that the existing laws regarding the prevention of cruelty to animals, which seem to have been very wisely drawn, already constitute a safeguard against possible abuses. The law allows the performance of "any properly conducted scientific experiments or investigations, which experiments shall be performed only under the authority of the faculty of some regularly incorporated medical college or university of the State of New York." This law has proved sufficient for its purpose, and under it New York has advanced to the front rank among American centers of medical and scientific progress. Neither in the interest of humaneness nor on the part of the medical profession is any change in the existing law needed or desired, and we can conscientiously counsel our professional brethren to stand as a unit against lending their assistance to any such movement.

The measure now proposed is the more dangerous from its plausibility. It requires the licensing of all buildings in which animal experiments are to be performed, provides for semi-annual reports regarding the statistics and details of experiments, limits demonstrations, and places upon experiments a number of restrictions frequently demanded by the out-and-out antivivisectionists. Under the notion that the disposition of experimenters is such that they require restrictive control—a notion, the insulting character of which must be evident to every member of the medical profession—the bill offers barriers to medical progress. It should be strenuously opposed.

Especially should the argument be allowed no weight that the bill in question would forestall more radical and more dangerous legislation. It would inevitably pave the way, should it become a law, for other oppressive and more restrictive measures. Such an argument reveals only more clearly the insidious nature of the present attack. Here, as elsewhere, it is the first step that counts. The passage of the first antivivisection law in this State would mean the beginning of improper limitations which would have no end. The united effort of the medical profession is needed to prevent this first step.

THE TUBERCULOUS COW.

WHEN it was announced recently that 72 per cent. of all the herds of cattle in this State contained each one or several animals affected with tuberculosis, and that of 2,753 cows examined by the State Agricultural Department 22.8 per cent. responded to the tuberculin test, the statement was made by an official of the Health Department of this city that there was no special significance in the fact and that there was no danger of a contamination of the milk supply. This optimistic view is not shared by the officials of the Bureau of Animal Industry at Washington, who assert positively what everybody already knows, except apparently some health officials in New York, that there is "danger to public health so long as cows which react to the tuberculin test are allowed to furnish milk or butter for public consumption," and moreover furnish proof of the truth of their assertion.

In circular 118 of the Bureau of Animal Industry, entitled "The Unsuspected but Dangerously Tuberculous Cow," Dr. E. C. Schroeder urges the general application of the tuberculin test, and the immediate segregation of all cows found to react to it. He says little can be learned from the appearance of the cow, for many markedly tuberculous animals look and act like healthy animals; eating well, not emaciating, and presenting neither symptoms of disease nor signs of discomfort; yet they may be continually distributing tubercle bacilli in the saliva, milk, and feces. Even if the udder is not diseased and the milk therein contained is free from bacilli, the feces will be found to contain them in enormous numbers, and that a large proportion of milk furnished by all but the really "model" dairies—and now and then accidentally even by them—contains at least a minimal sediment of feces is microscopically, and often macroscopically, demonstrable. Straining dirty milk will remove some or all of the gross impurities, but it will not remove the free bacilli with which those impurities have contaminated it before their removal. Centrifugalization is much more effective than straining, as anyone with a strong stomach can learn for himself by visiting a creamery where this method is in use and examining the sediment so obtained. He will need a strong

stomach to drink ordinary milk after such a demonstration.

A tuberculous cow is, however, not only a contaminator of milk, but a menace to all the others in the herd. Dr. Schroeder says that the experiments made by members of the Bureau of Animal Industry show that the commonest way in which tubercle bacilli pass from the body of a tuberculous cow is with her feces. In every case of tuberculosis examined in which tubercle bacilli were being expelled they were found in the feces, and often when they could not be detected elsewhere. When we remember that the average cow passes about thirty pounds of feces a day, a large part of which falls in the pasture where the other cows are feeding, and the remainder in the cowbarn, it is difficult to see how the infection of the entire herd can be long delayed. The necessity of the tuberculin test, applied at least once a year, and of the immediate segregation of all animals reacting to it, is therefore apparent. Whether or not such an animal should be killed at once, or whether its milk should be allowed to be sold or the cream used for the manufacture of butter is a difficult problem. Undoubtedly the destruction of all tuberculous cows would lead to a milk famine, for the figure of nearly 23 per cent. of tuberculous cattle in New York State would probably hold or be exceeded in other States. If it were possible to keep the milk from such diseased animals separate from the general supply, to remove the fecal and other contamination by centrifugalization, and then to pasteurize the clean milk, it might be used with a measure of safety in the manufacture of butter or cheese, but it should not be allowed to mix with the general supply. The temporary shortage in the milk supply, would, no doubt, cause distress and raise the price for a time, but the decrease in tuberculosis would compensate for this, and a campaign of education would reconcile the consumers of milk to the temporary inconvenience. The natural increase in the healthy herds would soon bring the number of milk producers up to the normal. Then yearly tuberculin tests would serve for the detection of the disease in its early stages and prevent it from ever again prevailing to the present deplorable extent.

THE DANGEROUS EFFECTS OF ETHER AND CHLOROFORM.

No one can for a moment question the blessings which ether and chloroform have conferred upon suffering humanity. It is not necessary to dilate upon the fact that thousands upon thousands of lives have been saved through these beneficent agents, but one cannot either overlook the fact that both ether and chloroform are dangerous agents and that death has often followed their administration. But though a fatal issue from ether and chloroform is not a factor to be entirely disregarded (thus, for instance, according to the statistics of Gurlt one death occurs in 2,075 chloroform anesthesias) we do not desire to speak of this factor at the present moment, but would call attention to the injurious remote after-effects which so frequently follow the administration of chloroform and ether and which are generally overlooked. We seem to forget that both chloroform and ether produce a profound effect on the human organism and the effect may be permanent.

In subjecting the organs of patients who died from the effects of chloroform to a careful microscopical and pathological examination, B. Mueller (*Archir für klinische Chirurgie*, 1905) found that the most important organs of the body, such as the heart, lungs, liver, brain, and kidneys, underwent a fatty degeneration. He also found that ether possessed the same property of producing a fat metamorphosis, though in a milder degree, as chloroform. A dangerous fat metamorphosis which shows itself by the appearance of fine droplets of fat was found in the liver and kidney cells after a single prolonged chloroform anesthesia and also after one prolonged ether anesthesia. The pathological findings were in every way intensified if the anesthesia had to be repeated in twenty-four hours. Experiments on dogs yielded the same results. The idea that a mixture of various anesthetics is less dangerous than either chloroform or ether has also been shown to be erroneous. In fact, according to Mueller (*Deutsche medizinische Wochenschrift*, November 8, 1907) the after-effects of a mixture of anesthetics are even more to be dreaded because we have a combination of several toxic actions.

It is a mistake, therefore, to think that the inconvenience of ether and chloroform consists merely in nausea, vomiting, thirst, secretion of mucus, ether-pneumonia, etc., for the effects are more profound; and the opinion is gaining ground that many a fatty parenchymatous degeneration of the heart, liver, kidneys, etc., has had its starting point in a chloroform or ether anesthesia. It is for this reason, as well as on account of the danger of a fatal issue, that many men have been earnestly working for a substitute for general anesthesia by chloroform or ether. Thus there have been developed local anesthesia, infiltration anesthesia, regional anesthesia, hyoscine-morphine anesthesia, and spinal anesthesia.

General anesthesia by chloroform or ether will probably always be employed to some extent, but its field of usefulness will doubtless become more and more restricted. It is the duty of every surgeon who has the future as well as the immediate welfare of his patient at heart to consider the profound metamorphosis which chloroform or ether anesthesia may produce on the human organism, and so far as possible and whenever feasible to select one of the less dangerous methods of inducing anesthesia.

Bilateral Nephrotomy in Calculous Anuria.

In calculous anuria the all-important thing to do is to relieve the anuria, whether there is a unilateral or bilateral calculus present. In unilateral calculus with anuria the diseased kidney is usually cut down upon, but often this does not relieve the anuria, a fact to which F. S. Watson draws attention in the *Annals of Surgery* for September, 1907. He advises bilateral nephrotomy in those cases in which the entire calculous kidney is destroyed, it being clear that the operation on one side will not secure any compensating advantage as regards the urinary

secretion; in such cases the secretion, which took place before the anuria set in, was effected in the other kidney, and therefore a relief of this condition can be caused only by cutting into this kidney. In cases in which the calculous kidney is not entirely destroyed the question as to whether the remaining liberated renal tissue is sufficient to relieve the anuria becomes more difficult to decide. He reminds us that a very small amount of healthy tissue is capable of sustaining life after having been freed of its obstruction, and therefore it is frequently not necessary to do a nephrotomy of the other kidney in cases of noninfected hydronephrosis. On the other hand, with infected renal retention of calculous origin, a well-marked infection will render unfit for service what appears to the eye to be a considerable amount of renal substance, and Watson therefore advises cutting into both kidneys in infected cases with anuria. In the presence of bilateral renal calculus he advocates bilateral nephrotomy at one sitting, unless the patient's condition is such as to make the long time required for operating on both kidneys an obviously improper danger to which to submit him. He relates the history of several patients upon whom this was done with good result. The advantage Watson claims for this procedure is that neither kidney is subjected any longer to the destructive influence of the calculus, and that he has thus liberated all the functionally capable renal substance which is possessed by the individual, all of which he usually needs.

Paresis and Tabes in the Colored Races.

By means of the ingenious method of fixation of the complement Wasserman has been able to show that in a very large proportion of the cases of paresis and tabes there is a definite indication of a previous syphilitic infection. Although these results as yet lack sufficient confirmation to be regarded as firmly established, and it is by no means certain that syphilis is a forerunner of every instance of these diseases, it is likely that this line of investigation will prove very fruitful in clearing up the etiology of these maladies of civilization. It has long been understood that the comparatively carefree existence enjoyed by the natives of countries whose state of culture secures them immunity from the mental stress that attends the higher degrees of intellectual development are rarely subject to these two diseases, and this fact has often been used as an argument in favor of the view that syphilis alone is not responsible for their causation. The greater interest now being taken in the demography of the tropics promises to aid in clearing up this as well as many other questions, and recent writers are confirming what has already been alleged on more or less hearsay evidence. Ziemann, for example, (*Deutsche medizinische Wochenschrift*, December 26, 1907), who has had much experience in Africa and tropical America, has found that while syphilis is especially common in these latitudes, the nervous diseases in question are exceedingly rare among the natives, and Baelz, who spent thirty years in Japan, has said that, though syphilis was prevalent in that country, general paralysis was seldom seen until within recent years, when the intellectual attitude became more nearly like that of the white races. There seems little doubt that syphilis can at most be only the predisposing factor in the etiology of these diseases, and that other elements, among which that of undue or unnatural mental activity is prominent for paresis at least, also enter into the question.

Vaginal Varicosities in Pregnancy.

Among the earliest and most constant signs of pregnancy is the dark bluish or purplish coloration of the lower portion of the vagina, sometimes known as Jacquemier's or, in this country, as Chadwick's, sign. It depends, of course, on the circulatory disturbances attending the changes in size and position of the uterus, and may, therefore, also accompany other conditions in where there is enlargement of this organ. Not infrequently the dilatation of the veins becomes extreme and true varicosities are formed. The proportion of cases in which this takes place is variously stated by different authors, probably owing to a lack of a definite standard for determining what shall be considered as varicosities, but is certainly far from low; Kehrer, for example, affirms that varicosities in one situation or another are found in 75 per cent. of all pregnant women, and that over 25 per cent. of these involve the vulva. While ordinarily the presence of such venous dilatations is the source simply of a certain amount of discomfort to the patient through the itching, feeling of fullness, etc., that they occasion, the danger of rupture is always present and involves serious risk to life. Three cases in point are reported by Grünebaum in the *Münchener medizinische Wochenschrift*, December 24, 1907, the immediate cause of the hemorrhage being in one case trauma through the entrance of a foreign body into the vagina, in another coitus, while in the third rupture of the varicosities apparently occurred spontaneously. This latter patient, in the eighth month of pregnancy, was found lying dead on the floor bathed in blood. One of the others fell from a wagon in such a way that a stake entered the vagina, and, though medical aid was obtained without great delay, the loss of blood was sufficiently severe to cause the patient's death two days later. In the third instance coitus during the seventh month gave rise to a copious hemorrhage which was controlled by packing and ligature, the woman recovering. While such cases are unusual, the danger is none the less a real one, and pregnant women should always be warned of the possibility of accidents of this kind and be instructed as to the measures to be resorted to while the physician is being summoned.

The Material Position of the Medical Man.

The position of the medical man everywhere is not improving, if we look at it from the pecuniary standpoint. In America the excessive competition among members of the medical profession tends to keep the average earnings of the ordinary general practitioner at a low limit, and there are various other causes which fight against the medical man. Perhaps the greatest obstacle in his path, after all, is the ever-increasing scope of preventive medicine. In Great Britain the situation in this respect is very similar to that of this country. Dr. William Ewart, speaking recently at the opening of the winter medical session of St. George's Hospital, London, drew attention to the fact that specialization was spreading and the field of general practice was contracting, and the reason for all this was largely found in the results attained through the instrumentality of preventive science. He predicted that at the present accelerated rate of prevention there would soon be little left of preventable disease to attend, and he went on to say that the altered conditions of life must tell upon

local practice, whether in town or country. The reward a man gets for a large expenditure on his training and years of faithful study only averages from £200 ($1,000) to £300 ($1,500) per annum. All this is perfectly true, the province of the physician is becoming less to cure, but more to prevent disease. In the interest of public health such a consummation as the gradual stamping out of disease is one much to be desired. The medical man will still be needed and must in the nature of things play a prominent part in bringing about this hoped for result. In the meantime, and probably so long as the world lasts, his services will be required in the curative and remedial sense, although in these respects undoubtedly they will be greatly curtailed. He must adapt himself to the new conditions and can only ask for more fair play than is accorded him at the present time.

News of the Week.

Amendments to the Sanitary Code.—At last week's meeting of the Board of Health Section 159 of the Sanitary Code was amended so as to provide that all physicians and midwives "shall file with the Board of Health reports of all births at which they assist, within ten days of same." The change was made to prevent the loss, or alleged loss, in the mail of the reports, which it was formerly permissible to send in by post. Another section amended was No. 42, which provides that no unwholesome food should be brought into, stored, or offered for sale in the city and was amended by adding the provision that "any foods offered for sale anywhere in the city by dealers in food shall be deemed to be offered or held for sale as food."

Summer Resort Hotels.—The report of State Health Commissioner Porter, issued on January 8, shows that of sixty-four summer hotels and boarding-houses in the Catskills and Long Island inspected during a month, forty were found above reproach as to water supply, plumbing, and methods of sewage disposal. The remaining twenty-four showed undesirable conditions in these lines, and some were badly kept, had dirty kitchens, and outbuildings generally unclean. These cases all have been taken up by correspondence with the proprietors and requests made that the particular offense charged against the hotel be remedied before the opening of the next season. If at that time it is found that the remedies advised have not been adopted the department announces its intention of so informing the public.

Occupational Diseases in Illinois.—Governor Deneen has appointed the following named physicians on the committee of nine authorized by the General Assembly for the purpose of investigating occupational diseases in the State and submitting a report to the next General Assembly, viz., Dr. Ludvig Hektoen, pathologist Rush Medical College; Dr. George W. Webster, president State Board of Health; Dr. James A. Egan, secretary State Board of Health.

State of Health in Chicago.—According to the weekly bulletin of the Chicago Health Department, in the month of December there were 2,704 deaths reported, equivalent to an annual death rate per 1,000 of 15.10. Chief among the death causes were: Pneumonia, 447; consumption, 278; heart disease, 237, and violence, including suicide, 218.

Death Rate in New York City.—During the first week of the month there died in this city, according to the Health Department, 1,561 persons, or 156 less than last year, the rate being 18.46, as against 20.95. There were notable decreases in the number of deaths from pneumonia, tuberculosis, and heart disease.

Eleven Cases of Caisson Disease in One Night.—On one night of last week eleven workers in the compressed air locks of the Long Island City tunnel were taken with the "bends" as they emerged after a night's shift. They were quickly taken to the hospital air lock, and all recovered except one who had been engaged in such work for five years and was considered immune to the disease.

Railroad Deaths.—In its twenty-first annual report issued on January 6 the Interstate Commerce Commission states that the total number of passengers carried by the railways during the year ending June 30, 1906, was 799,507,838, and on the above date the number of employees on the payrolls of the companies was 1,521,355. During the year ending June 30, 1907, 647 passengers and 4,353 employees were killed and 13,597 passengers and 62,689 employees were injured.

Royal Invalids.—The Czarina is reported as being very ill as the result of a vigorous anti-obesity cure followed by an attack of grip. The condition of the Japanese Crown Prince, who is tuberculous, is said to be causing grave anxiety, and Professor von Baelz, a German physician, who has spent many years in Japan, has been sent for to consult with the Japanese medical men. The Crown Prince is twenty-nine years of age and has three sons.

Plague in China.—The epidemic of bubonic plague at Teng-chow-fu, province of Shan-tung, has been checked, apparently by the advent of cold weather. It caused over 100 deaths. The authorities are taking precautionary measures against an outbreak along the coast in the spring.

Smallpox in Immigrant Ship.—The Russian steamship *Moskva,* from Libau and Rotterdam, was held at Quarantine on January 9 because one of her steerage passengers, a woman, had died at sea of a disease resembling smallpox. All the steerage passengers were transferred to Hoffman Island for observation, and the steamship was disinfected.

Radium Baths in Austria.—The Austrian government has decided to establish radium baths on a large scale at Joachimsthal, at present the most productive source of radium known. The municipality of Carlsbad and an English syndicate have been attempting to obtain control of the deposits, but the government has decided to retain all rights, partly as a source of revenue and partly from the standpoint that so important a therapeutic institution should be under State supervision.

Study of Cancer of the Breast.—Dr. Horace Packard, 470 Commonwealth avenue, Boston, Mass., desires information regarding any alleged recoveries or cures of inoperable or recurrent carcinoma of the mammary gland. If any case or cases are known to any reader of this request and can be authenticated by facts as to the history and condition prior to recovery and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged. Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcome. Cancer paste cures, *x*-ray cures, radium cures, or cures as result of surgical operation are not wanted. Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

Tuberculosis Exhibition.—The exhibit of the Committee on the Prevention of Tuberculosis of the Charity Organization Society, which has been at the Jamestown Exposition, was last week opened to the public in a store lent by the Metropolitan Life Insurance Company in its building in East Twenty-third street.

City Fire Gongs to Be Removed from Hospitals.—The fire gongs giving the location of fires occurring in the various districts, are to be removed from the city hospitals that have them, as they are not considered necessary. These were installed with the idea that ambulances should be sent to fires in the neighborhood of the respective hospitals, but it has become customary to wait for the usual police call before sending out the ambulances. The alarm boxes for the purpose of summoning the fire department in case of fire in the hospitals will, of course, be continued.

Organization to Urge Canteen Restoration.—The governing board of the Army Canteen Association, recently formed to create sentiment in favor of the restoration of the canteen at army posts, at a meeting held in this city last week, decided to establish similar organizations in every State in the Union. Branches are to be formed in all large cities and an active campaign will be conducted in behalf of a bill to be presented to Congress providing for the reestablishment of canteens at army posts and soldiers' homes.

City Hospital Changes.—Plans have been filed for extensive improvements on Blackwell's Island and Randall's Island. These comprise for Blackwell's Island a four-story tuberculosis pavilion, with roof gardens, solarium and exterior verandas, to cost $180,000; a one-story and attic hospital pavilion for the City Home for the Aged and Infirm to cost $75,000, a two-story pathological laboratory to cost $40,000 and a three-story and attic residence for the medical staff to cost $80,000. All these buildings are to be grouped about the Manhattan Hospital, of which they are to be annexes. The fifth projected improvement is a four-story home for the nurses attached to the Children's Hospital on Randall's Island, which is to cost $200,000, making a total of $575,000 to be expended on the five buildings.

To Enlarge Chicago Hospital.—A movement is on foot to enlarge the Hospital of St. Anthony of Padua at a cost of approximately $100,000, the addition to include a five-story building, 50x115 feet, with a rear wing of 38x50 feet.

Illinois State Board of Health.—At the thirty-first annual meeting of the Illinois State Board of Health the following officers were elected during the morning sessions: *President*, Dr. George W. Webster of Chicago; *Secretary and Treasurer*, Dr. James A. Egan of Springfield. This is the twelfth time Dr. Egan has been elected secretary of the State Board of Health.

Annual Meeting of Visiting Nurses of Chicago.—According to the report presented at the annual meeting of the Visiting Nurses' Association by Miss Harriet Fulmer, superintendent, 14,081 cases were cared for during the year, of which 1,137 were tuberculosis and 464 scarlet fever.

Lavoisier Medal.—The Lavoisier medal of the Paris Academy of Sciences has been awarded to Professor Adolf von Baeyer of Munich in recognition of his work in organic chemistry.

Dr. George T. Jackson has been made professor of dermatology in the College of Physicians and Surgeons, Columbia University, to succeed Dr. George H. Fox, resigned.

Death of a Surgeon at the Operating Table.—Despatches from Berlin state that at an operation in the Birkenfeld Infirmary, the surgeon, who was operating on a child, died suddenly of heart disease. Before another operator could complete the work the patient died.

The Suggested Vivisection Bill.—Letters have been sent out from the College of Physicians and Surgeons, the University and Bellevue Hospital Medical College, Cornell Medical College, and the New York Post-Graduate Medical School and Hospital, to all the officers of these institutions urging them not to lend their influence in favor of the bill to regulate vivisection which it is proposed to bring before the State Legislature at the present session.

Blue Earth County (Minn.) Medical Society.—At the meeting of this society, held on January 2, the following officers were elected: *President*, J. A. Hielscher; *Vice-President*, Dr. J. T. Schlesselman of Good Thunder; *Secretary*, Dr. T. C. Kelly of North Mankato; *Treasurer*, Dr. Lida Osborn.

New London (Conn.) Medical Society.—At the annual meeting of this organization held on January 2 officers were elected as follows: *President*, Dr. E. A. Henkle; *Vice-President*, Dr. Daniel Sullivan; *Secretary and Treasurer*, Dr. H. H. Hyer; *Librarian*, Dr. F. W. Howes. The address of the evening on tuberculosis was delivered by Dr. James E. Newcomb of this city.

Dallas County (Ala.) Medical Association.—This society elected the following officers at its meeting held in Selma on January 1: *President*, Dr. S. Kirkpatrick; *Vice-President* Dr. S. Alison of Carlowville; *Secretary*, Dr. B. B. Rogan; *Treasurer*, Dr. C. Ritter.

Death of Dr. Lassar.—Professor Oskar Lassar of the University of Berlin, a dermatologist of international eminence, died on December 23 at the age of fifty-eight years.

In Memory of Dr. Shrady.—The following minute was adopted at the meeting of the New York Pathological Society held on January 8, 1908:

It is with deep regret that the New York Pathological Society has to record the death of its late member, Dr. Geo. F. Shrady, on November 30, 1907.

Dr. Shrady became a member of the society in 1858, and, after thirty years of service as an active member, was in 1888 duly elected an honorary member of the society. During the time of his active service he served the society as president during the years 1883 and 1884 and as secretary from 1861 to 1879, a period of eighteen years.

During the time of his service as an officer of the society he always had the respect of its members and was ever faithful in the discharge of his duties. By his death the society has to mourn the loss of a faithful member and officer.

(Signed) Geo. C. Freeborn,
George P. Biggs,
Committee.

In Memory of Dr. Loomis.—The Board of Trustees of Bellevue and Allied Hospitals adopted the following resolution at its meeting held on December 31, 1907:

Whereas, The Board of Trustees of Bellevue and Allied Hospitals has learned with profound regret of the death of Dr. Henry P. Loomis, for many years one of the attending physicians to Bellevue Hospital, be it therefore

Resolved, That the Board desires to place on record its sense of the value of Dr. Loomis' services to the patients he has treated within the walls of Bellevue Hospital, as well as his more extended services to the cause of medical science in general; and be it further

Resolved, That copies of this resolution be forwarded to his family and to the medical journals of the City of New York.

True copy of resolution adopted at meeting held on December 31.

J. K. Paulding,
Secretary Board of Trustees.

Obituary Notes.—Dr. S. F. Pomeroy of Springfield, Mass., the father of Dr. William H. Pomeroy, died on January 11 at the age of eighty years. Dr. Pomeroy was graduated from Yale Medical School with the class of 1855 and had practised in Springfield for more than fifty years.

Dr. Levi Jewett of Cobalt, Conn., died of pneumonia on January 3 at the age of seventy-two years. Dr. Jewett was a native of Griswold and received his medical education at the Bellevue Hospital Medical School. He practised for a time in Windsor Locks and then served through the Civil War as assistant surgeon and at the time of his death was medical director of the Connecticut Department of the G. A. R. In 1905 he was made a member of the Legislature from Chatham. Mrs. Jewett died of the same disease five days after her husband.

Dr. W. H. Giddings of Bakersfield, Vt., died on January 3 at the age of sixty-seven years. Dr. Giddings was born in Bakersfield and was graduated from the medical school of the University of Vermont in 1866. He practised in his native town until 1892, when he was made superintendent of the Vermont State Hospital for the Insane, holding the position for several years. In 1880 he represented his town in the Legislature.

Dr. John Boice of Denver, Col., died on December 28 at the age of sixty-eight years after an illness of ten days from grip. He came to Denver from Detroit eighteen years ago and for a long period was connected with the Gross Medical College.

Dr. Thomas E. Williams of Hanover, Va., lost his life at the age of seventy-two years in a fire which destroyed his home on December 31. He was a native of Maryland and served through the Civil War in a Maryland regiment. At the close of the war he began practice in Hanover County and continued there until failing health compelled him to retire a few years ago.

Dr. William L. Coleman of Salina, Kan., died suddenly on January 2 at the age of seventy-two years. He was born in Illinois and served in the Civil War in the One Hundred and Third Illinois Infantry, being discharged in 1863 owing to disability due to a bullet wound received in the battle of Missionary Ridge. He then practised in Chicago, moving to Salina about five years ago.

Dr. Philip J. Strathy of Toronto, Can., died suddenly on January 2 at the age of forty-two years. He was a graduate of Trinity Medical College and was on the staff of the Toronto General Hospital.

Dr. James F. Moliere of San Francisco died of pneumonia on December 28 at the age of eighty-one years. He had practised for many years in San Francisco and other California cities.

Dr. Calvin A. Wetmore of Catskill, N. Y., died on January 12 at the age of seventy-six years. Dr. Wetmore received his diploma in the early fifties from the Berkshire Medical College and had practised for twenty-six years in Emporia, Kan.

FOURTH HARVEY SOCIETY LECTURE.

The fourth of the present series of lectures held under the auspices of the Harvey Society, was delivered at the Academy of Medicine on Saturday evening, January 11, by Professor Ernest H. Starling, of the University of London, the subject being "The Chemical Control of the Body."

For ages, the speaker said, man had been seeking to obtain the same control over the actions in his body which he had succeeded in obtaining in the inanimate world about him. He had long recognized that he could profoundly influence the body by means of chemical substances, or drugs, as they were called. But the art of drugging had been almost wholly empirical, and this had led to the well-known satire that most of our medication consisted in the "pouring of drugs of which we know little, into a body of which we know less." However, the art of drugging was gradually being placed on a scientific basis, and the speaker hoped to show some of the more recent conceptions which were guiding the development of the subject. He would begin by illustrating the employment, by the body itself, of chemical means for bringing about physiological processes at a distance. It was well-known that in the digestion of food, the various juices must be poured out in proportion to the amount of food to be digested, and at the time when the food is present in the organ. It had always been felt that the mechanism for regulating this was a nervous reflex. But it was found, even when the vagus was cut, that the introduction of some acid chyme into the duodenum caused a flow of pancreatic juice. Pavlov thereupon conceived the idea that there were nerve reflexes direct from the duodenum to the pancreas. However, when the question was studied by the speaker, the entire matter appeared in a different light. In the experiments which he made, all the nerve connections between the duodenum and pancreas were cut, leaving only the blood-vessels as a bond between them. When now the acid chyme was introduced into the duodenum, the reflex occurred just as before. The conclusion forced upon him, therefore, was that the massenger from the duodenum to the pancreas traveled by way of the blood-vessels, and was a chemical substance. It was natural to think that it was the hydrochloric acid in the chyme which acted in this way. But when this was injected in the vessels to the pancreas, no reflex action was produced in that organ. After a number of experiments, it was found that when the cells of the upper part of the duodenum were scraped off, and this mass mixed or boiled with hydrochloric acid, there resulted a substance which, when injected into the pancreatic vessels, at once caused the production of pancreatic juice. Evidently a peculiar substance was involved, for not only did it withstand boiling, but it was soluble in alcohol, and was readily diffusible. It did not give the reactions for protein with the ordinary reagents. Evidently it was a substance of small atomic weight. It had not been possible thus far to obtain it in a pure form, as it was highly oxidizable. From what had just been said it was quite evident that this could not be a haptin in Ehrlich's sense. This chemical messenger was but one of a number of such substances which the speaker had discovered. He had termed them collectively "hormones."

The hormone just discussed acted on three different organs at once, the liver, pancreas, and the intestine. In the latter it caused the production of succus entericus. This showed that there was an

economy of mechanism. This gut hormone had no effect in the stomach or in the mouth.

The speaker then went on to say that it could readily be understood how this hormone action could cause an accurate coordination between the amount of food to be digested and the amount of pancreatic juice poured out by the gland. The pancreatic hormone, as had just been shown, was produced by an interaction of the acid and the duodenal cells. When, then, there was an influx of acid chyme into the duodenum, the hormone was at once produced, and this led to the reflex actions in the pancreas and the other organs. As soon, however, as the alkaline intestinal juices had neutralized the chyme, the production of hormone ceased, and with it, of course, the reflex production of pancreatic juice.

Hormone actions, the speaker said, were not confined to the alimentary tract. We all knew that the contracting muscle was always supplied with just the amount of oxygen needed for its work. This was very simply regulated through the respiratory center. Just as soon as the contracting muscle began to send into the blood stream more carbon dioxide than before, the respiratory center began to signal to the respiratory apparatus to do more work, thus at once sending more oxygen to the working muscle. This carbon dioxide was a typical hormone.

There were other examples of this kind of action, but the reflex character of the mechanism was not so pronounced. Thus we knew that atrophy of the adrenal glands caused the complex of symptoms known as Addison's disease, with its vomiting, bronzing of the skin, and weakness. Subsequently it had been shown that a chemical substance of rather simple constitution could be derived from the adrenals, and this substance, adrenalin, acted particularly on the sympathetic nervous system. Adrenalin should be classed as a hormone. The Pituitary body also had some such action, as was shown in the overgrowth of bone, acromegaly, which was associated with affections of this organ. The thyroids were likewise of this class, and the substance iodothyrin which could be made from these glands was to be regarded as a hormone.

Prof. Starling then spoke of the action which the sexual organs exerted on the body, and alluded to the well-known effect of castration. There was also a marked correlation of the mammary glands and pregnancy. Prof. Starling had carefully studied this, and found that it was due to a hormone mechanism. In the rabbit the mammary glands began to grow with the beginning of pregnancy, and they continued to grow as long as pregnancy lasted. They did not secrete any milk, and yet regularly, two or three days after the termination of the pregnancy, the flow of milk began. His experiments had shown that this was not a nervous reflex, but was a hormone action. In order to determine where this hormone originated, he had injected a virgin rabbit with sterile extracts of placenta, uterus, or fetus from pregnant rabbits, and had found that the hormone in this case was derived from the fetus. The speaker then showed some pictures of the mammary changes induced in a rabbit by pregnancy, and in a virgin rabbit by injections of fetus hormone. After injections from over 150 fetuses the changes in the virgin rabbit about equaled those in a rabbit pregnant nine days. The speaker called attention to the difference between the continuous injections of hormone taking place normally in pregnancy, and the relatively few injections which it was possible to make in an experiment.

In conclusion, Prof. Starling admitted that the knowledge thus far obtained regarding these hormone actions was not of much practical applicability, but he thought we might look forward to increasing the power of control over our bodies if we worked further along these lines. He felt that at the present time no field was more promising of future success than was this one.

After a vote of thanks had been moved by Prof. Lee, the chairman announced that there would be two changes in the program of the lectures. It had been found impossible for Prof. Schäfer to be here for the lecture in April. His lecture would therefore be postponed until May 9. The other change was the announcement of an additional lecture, to be given by Prof. Alonzo Taylor, of the University of California. This would be given in March, but both date and subject would be announced later in the medical journals. The next lecture will be delivered on January 25, the speaker to be Dr. George W. Crile, and the subject of his lecture, "Shock."

Correspondence.

A MODERN CORNARO.

To the Editor of the Medical Record:

Sir:—Thank you for the note of sweet reason that rings through your editorial on the subject of Fletcherism in the Medical Record for January 4. If we eat only when we are hungry, the boy will devote most of his time to eating, and that will interfere with his preparation for the sciences and the humanities. If we expend a very long time in "divine mastication," a valuable part of the day will have to go to the profit and loss account, for the determination of blood to the digestive organs at meal times interferes with the higher cerebration. Imagine Sir John Lubbock proving that life is a beautiful gift, while he gravely chewed a cracker for an hour; or Schopenhauer proving that life is a great mistake, while slowly chewing the rag. Bringing the matter down to one of comparative physiology, which animals are the healthiest? Why, the ones that bolt their food, to be sure. Look at the hog, or the dog, or the bear.

One must not forget the psychic effect of a determination to get well and strong under any kind of system whatsoever. For an object lesson, note the Christian Scientists, or the Dowieites, or the followers of any historical movement of the same sort. Or for exhibit No. 2, look at the sanatoriums. Are there many in which the physicians make more than a shallow pretense at finding the real causes for a neurasthenia? Do they look for eyestrain, or for loose kidneys, or involuting appendices, and the various well-known leaks below the water line? Not at all! They depend upon the psychic influence of the environment for getting up the patient's steam, or filling his sails. That is why these patients are successfully cured so many times in a year.

It is a comfort to have your explanation that Fletcher's system probably belongs to his own system, and that we are not obliged, in order to be up-to-date, to inflict the system upon our patients, or even in extreme cases upon ourselves.

The doctor with deficient circulation goes on his rounds just now with a heavy overcoat and woolen underclothing. He advises every patient suffering from a psychosis or from corns to dress in the same way if he would be well. On the other hand, the doctor with vigorous circulation runs about without an overcoat, and with thin underclothing, and advises these same patients to wear the same things that he does, and not to forget to throw the window wide open at night.

There is no doubt that Chittenden is right in showing the dangers of an intake of proteids greater than we can safely manage, and that Fletcher is right in pointing out some of the dangers of rapid eating, but if the matter is to be reduced to a system, and the system is to be fired at us for a flock shot, it is profitless philosophy.

Robert T. Morris.

616 Madison Avenue.

DOMESTIC PETS AS ACTIVE CARRIERS OF INFECTIOUS MATERIAL.

To the Editor of the Medical Record:

Sir:—An hypothesis of the relation of human disease to disease affecting the lower animals, is by no means a gratuitous one; on the contrary, it has much to recommend it. Thus the communication of bubonic plague, diphtheria, smallpox, scarlet fever, measles, and other infections and contagions from the lower animals to man has long ago been established.

Now, the various orders of animated nature are so interdependent in regard to causation and spread of disease, that it appears unwise to limit our investigation to any one family or class. Without a clear comprehension of the factors that produce disease in individuals, attempts at prevention must be what a great deal of our so-called preventive medicine is—a mere sisyphusian waste of time. That diseases are not infrequently traceable to the lower animals such as cats, dogs, the various species of the feathered tribe, or the so-called house pets and household pests (rodents) is unquestioned. Indeed, on account of the filth endangered by the so-called domestic animals with their attendant parasites (fleas, etc.), the German government has promulgated rules whereby no domestic animals such as cats and dogs can be tolerated in a pharmacy, for every detail of the practice of pharmacy, especially in the larger cities, is closely supervised by the German government.

Some curious facts showing that the so-called domestic animals are carriers of contagion are recorded in the sustained prevalence of diphtheria in Enfield, Eng., by Dr. Bruce Low of the local (British) Government Board. He incidentally states, says the Sanitary Record, that during December, 1887, and January, 1888, there was a large mortality among cats. The following incident occurred at Enfield at the time, and shows the possible connection between diphtheria in children and in cats. "A little boy was taken ill with what turned out ultimately to be fatal diphtheria. On the first day of his illness he vomited, and a cat which was in the room at the time licked the vomit from the floor. In a few days (the child meanwhile having died) the animal was noticed to be ill, and her sufferings, being so severe and so similar to those of the dead boy, the owner destroyed her. During the early period of its illness the cat had been let out at night in the back yard as usual. A few days later, the cat of a neighbor who lived a few doors away was noticed to be sick. It had also been let out in the back yard at night. The second animal was a pet and playfellow of four little girls, who, grieved at the illness of their favorite, nursed it with great care. All four girls developed diphtheria, the mother being convinced that they got it from the cat; indeed, no other known source of contact with infection could be discovered."

Dr. Mason, the Port Medical Officer at Hull, Eng., in his official report as to the origin and outbreak of bubonic plague on board the steamship *Friary* at her dock at Hull and there held in quarantine and thoroughly fumigated, where she arrived with a cargo of cotton, January 10, 1901, says: "I am of the opinion that the probable cause of the malignant outbreak was a cat, which went aboard at the Port of Alexandria (Egypt) and which showed signs of illness during the voyage. It had frequented the forecastle occupied by the sailors. Of the nine sailors taken with the plague, eight of the victims succumbed to the attack. The mortality was confined to the men who lived in the forecastle of the ship, and to these only. The ship had twenty-one hands all told, with clean bills of health from Alexandria and Algiers, where she had touched. Ships had been arriving regularly in Hull from Alexandria with clean bills of health and the plague was not believed to exist there, or at the Port of Algiers, which also had been declared to be free from the plague. There was no outbreak of the plague in Hull proper. The bodies of three rats, afterwards discovered in the hold of the ship, were sent to Yorkshire for bacteriological examination. They were found, however, not to be affected with the plague."

In 1886 Dr. George Turner, Medical Officer of the local Government Board, stated to the writer that in the village of Braughing, Eng., diphtheria was prevalent at a farm among the fowls. A man from a neighboring village bought a chicken from an infected farm; he took it home, and diphtheria broke out in the house shortly after. This was the first case in that village. Dr. Turner further stated that his attention was called to these facts by the medical attendant, and the man himself corroborated the information in all particulars.

Similar accounts are received from abroad as well as in this country, as to the identity and transmissibility of disease from the lower animals such as have been observed in swine, sheep, dogs, horses, and cattle, to human beings. I may here incidentally state that hair, fur, wool, and feathers are carriers of infectious material.

I am encouraged, therefore, to be content with drawing attention to the danger from infected domestic animals such as cats and dogs, whose ratting and mousing propensities and other habits render them especially liable to infection.

William B. Meany, M.D.

New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

CONTROL AND PREVENTION OF PLAGUE—OBITUARY, PROFESSOR ANNANDALE AND SIR P. H. WATSON.

London, December 27, 1907.

Preventive medicine in relation to plague is very much to the fore with the intelligent public as well as the profession. This is as it should be with the great calamity of India before us. Sir George Clarke, Governor of Bombay, has addressed himself to the subject in a most enlightened way, visited the districts where the epidemic rages and investigated for himself the process of manufacture of the prophylactic, so as to be able to assure the suffering people that they are altogether mistaken in regarding the injections as dangerous or as otherwise than most beneficial. He has also sent a circular letter to the native journals in which he asserts that "if all the people in infected areas would be inoculated the plague would quickly disappear." The *Times of India*, in commenting on the Governor's letter, makes the excellent suggestion that the editors of the vernacular journals should be invited to visit the laboratory and see for themselves the process of manufacture as to learn for themselves the truth and help to remove the suspicions and ignorance of their readers.

A paper on the control of the plague has been contributed to the Epidemiological Section of the Royal Society of Medicine by Mr. Haffkine. He pointed out how it is that previous efforts to deal with epidemics have been so largely unsuccessful. Treatment of the sick, disinfection, evacuation of infected areas, destruction of rats, and so on, are not without some effect, but cannot be relied on, for they cannot be carried out with absolute completeness or else they only deal with minor factors. This is why immunity should be conferred on the population in the manner that vaccination confers it against variola. This is to be obtained by Mr. Haffkine's prophylactic, as experience has shown that (1) in a native of India who was more susceptible to plague than Africans, Europeans, and some other races, the inoculation reduced the liability to attack to less than one-third; (2) in one-third of the cases which still occurred the rate of recovery was at least double that in the noninoculated, the ultimate result being a reduction of mortality of 85 per cent.; (3) in an inoculated European if attacked recovery always occurred, so far as the author knew; (4) inoculation of those already affected or incubating plague prevented or mitigated the attack, a fact which discloses a basis for the bacteriotherapeutic treatment; (5) in natives the degree of immunity conferred, though gradually vanishing, seemed to last during several outbreaks; on Europeans the effect has not been seen to disappear during the time that has passed since the inoculation method has been under investigation, *i.e.* from 1897.

Another paper was read by Dr. Ashburton Thompson, the head of the Public Health Department of New South Wales. He dealt with the part of the statesman in preventing the disease. When a community is faced with an outbreak of plague it is not his part but rather that of the administrator to deal with it, and the only means of doing so are the immunization of the people, which Mr. Haffkine's genius has made possible, evacuation of the locality, and the destruction of rats. These measures, Dr. Thompson said, are remedial and not truly preventive. Consequently they may have to be repeated when another outbreak occurs. The arrest of present outbreaks is quite a different matter from the diminution of the liability of a country to suffer them. This last is the statesman's business. It is the rat-flea which carries the infection. As we cannot completely exterminate rats we must render all occupied buildings rat-proof, and this, says Dr. Thompson, is the only method to which the term "preventive" can be applied with correctness. Every building rendered inaccessible to rats is a fortress impregnable to the enemy. This shows the road the statesman must take. The difficulty of saving a people from attack is proportioned to that of rendering their habitations rat-proof. Further, the difficulty of clearing a place of plague is propor-

tioned to that of removing the harborage of rats in the mouths of sewers, in heaps of rubbish, dilapidated sheds, and the like. The problem of eradicating the plague thus put forward is one that extends over vast periods, and it must be acknowledged that in Dr. Thompson's opinion no speedy exemption is to be expected.

Edinburgh has lost two of her most eminent surgeons and teachers by the almost simultaneous death from cardiac failure of Professor Annandale and Sir Patrick Heron Watson. The former was found dead in his bed on Friday morning and his colleague died on Saturday. They lived within a few doors of each other.

Thos. Annandale, F.R.S.E., Regius Professor of Clinical Surgery, was an Honorary Fellow of the English College of Surgeons as well as that of Edinburgh, and a member of numerous medical societies, Surgeon to the Royal Infirmary, the Children's and other hospitals. In early days he was Demonstrator of Anatomy at the University and took the gold medal for his graduation thesis on "Injuries and Diseases of the Hipjoint." He also took the Jacksonian prize of the London College of Surgeons for his essay on "The Malformations, Diseases, and Injuries of the Fingers and Toes, and Their Surgical Treatment." With such a beginning he passed rapidly to the highest surgical posts in the University and Infirmary. He was made Surgeon-General to the Queen in Scotland and received honors from various surgical societies at home and abroad, including the honorary fellowship of the American Surgical Association. Dr. Annandale was in his seventieth year and the day before his decease seemed in his usual health and operated in the Infirmary. In this the two deaths did not resemble each other, as Sir P. H. Watson had been out of health for some time and in some quarters his death was anticipated.

Sir Patrick H. Watson, who had attained the age of seventy-five, took the M.D. (Edin.) in 1853 and two years later F.R.C.S. (Edin.). He served as Assistant Surgeon in the Crimea and received the Crimean, Sardinian, and Turkish medals. After the war he returned to Edinburgh and became Surgeon to the Royal Infirmary, the Lock Hospital, the Eye Infirmary, and other institutions. He also had the Volunteer decoration, having been Surgeon-Lieutenant-Colonel of the Queen's Edinburgh Rifles. He was made Surgeon to Queen Victoria in Scotland, and since 1901 Honorary Surgeon to the King. In 1881 the University made him LL.D. and in 1887 the Irish College of Surgeons made him an Honorary Fellow. In June, 1903, he was knighted. Many other honors have been showered upon him. He was a Deputy-Lieutenant, a Caballero of Spain, had been President of his College and its representative in the General Medical Council, and examiner for several qualifying bodies.

Lieutenant-Colonel J. Maitland, M.D., late of the I. M. S., has died at the age of fifty five. He graduated at Edinburgh in 1874, joined the Indian Service in 1876, was appointed to the General Hospital, Madras, of which he became in due course Senior Surgeon. In 1882 he was a professor in the Medical College and filled various appointments in the city, the college, and the hospital until in 1903 he was Principal of the college and a little later Professor of Surgery, Honorary Fellow of the University, and Senior Member of the Hospital Staff. He wrote "Elephantiasis and Allied Disorders" and various contributions on Filarial and other tropical diseases.

Dr. Sealy of Weybridge was drowned on the 24th through an accident in consequence of the Thames flooding over the bank and loosening it, so that the horse he was riding fell with him into the river.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 2, 1908.

The Value of Vaccine Therapy to the General Practitioner in the Treatment of Bacterial Disease.—This paper, by C. Floyd and A. M. Worthington, gives details of eighteen cases covering a wide variety of lesions. The results of the vaccine therapy were on the whole decidedly favorable. The authors believe (1) each new method in medicine should have a thorough trial before it is rejected. (2) A non-attenuated specific vaccine, given in proper doses, is essential to success in the treatment of cases with vaccines. (3) To control the amount and frequency of the dose of a vaccine, either the opsonic index or general clinical symptoms may be the guide. (4) Localized infections of moderate duration offer the best field for treatment. (5) The vaccine treatment, when used in conjunction with medicine or surgery, may lessen suffering and deformity and frequently save life.

Personal Experience with Specific Vaccines in the Treatment of Bacterial Disease.—M. W. Richardson details his experience with infected knee joint, puerperal septicemia, lupus, pustular acne, and tuberculosis of the ankle joint. He says: (1) Bacterial inoculation cannot accomplish the impossible. It presupposes the patient has still in reserve forces to be called into action. It must be employed as early as possible. (2) Physicians, therefore, intending to make use of this method of treatment must make original cultures from septic operations. Otherwise, valuable time will be lost, as in this case, with the study of organisms invading secondarily open wounds. (3) In this connection, too, it is perhaps well to emphasize the importance of blood cultures in cases of general bacterial invasion. This procedure gives at once, if successful, the kind of organism concerned, and the material for an autogenous vaccine. Blood cultures have proved their worth, especially in typhoid fever in the early days of the disease, when the Widal reaction so often fails. In a certain German clinic, the author has heard, it is a routine procedure to make blood cultures from any patient showing an elevated temperature.

New York Medical Journal, January 4, 1907.

Potassium Iodide in Mental Diseases.—J. M. Walker presents summarized histories of several cases of cerebral syphilis, alcoholic insanity, melancholia, etc., advocating the use of potassium iodide in rebellious or critical cases in very large dosage. Such doses should be taken immediately after meals, and will be borne only when the patient is on full diet. In almost every case there has been a primary eruption situated principally on the chest and face; in most cases this occurs at from 300 to 500 grains, with also slight nausea. Both disappear on increase of dosage. The author asserts that, in his experience, in a good percentage of cases of cerebral syphilis, if treatment is begun within three months after mental impairment is first noticed, the patient will invariably regain his normal mental faculties. The eruption and nausea spoken of seem to be a primary physiological effect of potassium iodide, as nausea disappears and the skin clears up on increasing the dose to its limit or full physiological action, which is evidenced by the patient's face becoming puffy and swollen, conjunctiva injected, abundant secretion from the mucous membrane of the nares and bronchi, severe vomiting, acneform eruptions covering nearly all of the body (however, this may or may not be present); diarrhea, loss of appetite, and stupidity, which lasts from four to five days; during the period of diarrhea and emesis pulse is increased ten to fifteen beats per minute, and lasts for about forty-eight hours, after which it becomes normal. Walker admits that there may be doubt in the minds of some as to whether or not these large amounts of the remedy are being digested or are passing through the bowels without change. As proof of the former view he points to the steady gain in flesh, the marked improvement in the patient's mental condition, also the positive results in testing the urine for iodine.

Pathogenesis of Stump Hallucinations.—Some observations are offered by G. A. Gordon on this subject, his remarks being suggested by the history of a case of twenty-seven years' duration. He declares that the appearance of the hallucination upon a physical irritation of the cicatrix of the stump speaks in favor of its peripheral origin. The spontaneous development of the phenomenon when the patient is at rest and without external irritation, aggravation of symptoms after an apoplectic seizure, are all manifestations which originate primarily in the brain. The question of the pathogenesis cannot, therefore, be decided in exclusive favor of one or of the other view. Both elements play an important rôle in producing the stump hallucination. The most interesting feature of the author's case is the unusual duration of the hallucination. Cases with the stump phenomenon persisting for several years have been reported, but a twenty seven years' hallucination is very uncommon. The habit of transferring to the periphery all sorts of sensations is due to the association of visual, tactile, and motor images. Normally this habit is gradually lost; in some cases at the end of a week or a month, and in others at the end of several years. When the hallucination persists for a great many years the cerebral centers are more or less in a state of instability. Such a brain cannot be considered normal. The author's patient is alcoholic. For a number of years he used intoxicating beverages in unusually large quantities (ten to twelve whiskies and as many beers a day). This fact illustrates the validity of the view concerning the cerebral origin of stump hallucination.

The Diagnosis of Unilateral Tuberculous Nephrocystitis.—Six operative cases are reported by M. W. Ware. Of these cases all but one were in the beginning mistakenly interpreted. One was treated for a vesical

calculus, another was operated upon (nephrectomy) for a pyonephrosis grafted on a gonorrhea, which eventually demanded a difficult secondary nephrectomy. A young girl was treated for six months, in vain, for a cystitis. After nephrectomy of one kidney in the face of inflammatory changes of the other kidney (casts, pus cells by ureter catheter), a tuberculosis of this remaining kidney resulted, possibly, by an ascending process. Still another patient operated upon previously for perineal abscess which did not heal, nor give relief to his urinary symptoms (pyuria) was nephrectomized on the basis of findings with the ureter catheter. Two nephrectomies were performed in spite of pathological conditions of sister organs. No cryoscopy or other tests for renal sufficiency were applied, and no deaths resulted. The author says that to foster the stigma of tuberculosis is justified only by a rigid diagnosis by exclusion, in which all the laboratory aids possible are employed, radioscopy, cystoscopy, etc. He calls attention to the fact that the condition of "cystitis," for which the physician often refers a case to the surgeon, is really the terminal condition of some lesion higher up in the genitourinary tract. If this fact were borne in mind fewer cases of tuberculous nephrocystitis would escape recognition at a time when the lesion was unilateral and amenable to surgical measures.

Journal of the American Medical Association, January 11, 1908.

Rachitis.—T. S. Southworth deplores the lack of attention by parents and physicians to the early symptoms of rachitis. It is a disease of the well-to-do as well as of the poor, and it is an error to assume that because some of the typical symptoms may be lacking the disease is not rachitis. The beading of the ribs comes nearest to being a constant sign, and the abnormal softness of the thoracic walls may be first apparent from the sinking in of the chest walls during inspiration in some acute respiratory affection. This is a serious handicap to the child, increasing the danger of pulmonary disease and crippling the respiratory function. This softened thorax and the nervous instability of the disease are the greatest dangers and make the prophylaxis most urgent. The disease may begin before the fifth month; just how much earlier is uncertain. After that it is recognizable with increasing frequency and may be most marked during the second year. It should be the physician's duty to detect the condition in its incipiency, even in nursing infants, when he should endeavor to improve the hygienic conditions, especially by attention to the mother's diet, checking the tendency to prolonged lactation and other remedial measures. While in the earlier months prophylaxis and treatment are practically the same as that of malnutrition in general, after the fifth and sixth months certain measures begin to have a definite value. Fresh orange juice has a beneficial effect in rickets as in scurvy, and at this period or even earlier it is well to begin the use of pure cod liver oil, beginning with small doses and increasing with tolerance to half a dram three times a day. More attention should also be given to securing an adequate supply of proteid in the infant diet, and by the seventh month the administration of beef juice once daily or the white of one egg will be of assistance. In older children who have entered on their second year scraped rare meat pulp and soft boiled eggs are useful. The intelligent management of starch-containing foods is important, but it is not necessary to cut them off entirely when any considerable degree of intestinal indigestion and distention is not present. The value of cod liver oil given for long periods is incontestable. It is also one of the best mediums for the administration of phosphorus, which Southworth considers a valuable remedy to cut short the more acute symptoms and especially for the rachitic instability of the nervous system.

The Roentgen Ray Treatment of Epithelioma.—W. A. Pusey gives his experience with the *x*-ray in patients treated more than three years ago. Excluding a few cases which at the time of beginning treatment were complicated with demonstrable carcinoma of neighboring glands, the total number of epitheliomas treated is 119. He has been able to follow up the records of all but 8 of these, leaving 111 to be considered. Of this number 80 patients are either well to-day or have died from other causes without recurrence of the epithelioma. Eight are dead from other diseases, one has been well over six years, 11 are well over five years, 22 over four years, 32 over three years, and 6 were living more than three years, but have since been lost trace of. Two patients are counted as practically cured. One of these died of pneumonia fifteen months after treatment with a minute suspicious looking spot remaining unhealed. In the other there is a small non-progressing ulcer resembling an *x*-ray burn remaining. In both cases the original disease was very extensive. Seventeen patients are classed as only distinctly benefited; that is, the disease was checked and life prolonged with comfort for at least a year, except in one case in which the patient, a man over 80, died within the year. All of these cases were recurrences after surgical removal of the growth and hopeless as regards other treatment than the *x*-ray. Brief reports are given of several of these cases. In only 12 out of the whole number was the treatment counted as a failure, though in several there was some benefit afforded. Counting all the 31, however, which are classed as not entirely successful or as failures, there remain 80 cures out of the 111, or 72 per cent., a showing which Pusey thinks will equal that afforded by any other method of treatment.

Adenomyoma of the Uterus.—T. S. Cullen has found these growths in over 5 per cent. of between 1,300 and 1,400 cases of myoma. Their pathological anatomy is described in detail; there is first a diffuse myomatous thickening of the inner muscular walls accompanied by a down-growth of the normal mucosa into this diffuse growth. Portions of this adenomyoma may become subperitoneal or intraligamentary and may form a large cystic adenomyoma. Portions of the diffuse growth may also project into the uterine cavity, forming submucous adenomyomata. The growth may also occur exceptionally in the cervix with like extension of the uterine glandular structure. No proofs of any causal relation between the ovaries and tubes and the development of adenomyoma could be found. The disease is most common between the ages of thirty and sixty, is found in both single and married women, and does not seem to militate in any way against normal pregnancy. The diagnosis is difficult and impossible in subperitoneal and subligamentary cases until the abdomen is opened. If a diagnosis can be made, abdominal hysterectomy is indicated. While Cullen considers these growths themselves to be benign, the coexistence with them of a squamous carcinoma is not rare, and they may themselves develop into adenocarcinoma. In the vast majority of cases the gland elements are derivatives from the uterine mucosa, though the continuity may sometimes not be traceable. The author's summary is given substantially as follows: In the examination of fifty uncomplicated diffuse adenomyomata of the uterus the mucous membrane origin of the glands could be traced in every case. In six additional cases with complicating squamous-cell carcinoma, the continuity was established in five. In the two remaining cases of adenomyoma of the body the continuity was destroyed by adenocarcinoma. In the remaining fifteen cases of subperitoneal or submucous adenomyomata one would naturally not expect to trace the relationship; nevertheless, in one case the mucosa literally flowed into the myoma. Thus, taking all kinds together, Cullen was able in 56 out of 73 cases to trace the origin of the gland element to the uterine mucosa. All adenomyomata of the uterus in which the gland elements are similar to those of the uterine mucosa, and surrounded by stroma characteristic of that surrounding the normal uterine glands, owe their glandular origin to the uterine mucosa or to Müller's duct, no matter whether they be interstitial, subperitoneal or intraligamentary, solid or cystic.

The Opsonic Index in Orthopedic Surgery.—C. Ogilvy and T. H. Coffin give an account of their work undertaken to determine: 1. The opsonic index in cases of tuberculous bone and joint affections; 2, the effect of tuberculin on the opsonic index in these tuberculous cases; 3, the relation between the opsonic index and the general and local conditions; 4, to compare the opsonic indices of patients living under the best hygienic conditions, but without the use of tuberculin. Several cases are briefly reported and the chief details of importance in a number of others are given. All were cases of tuberculous disease of the hip, knee, or spine. The authors feel warranted in offering the following deductions from the observations thus far: 1, Tuberculin in small doses and at proper intervals is of undoubted value in the treatment of selected cases of tuberculous bone and joint disease. 2. The rise of the opsonic index is accompanied by an improvement in the general and local conditions, provided there is no secondary infection. 3. The opsonic index will be of value in determining the advisability of discontinuing mechanical treatment. 4. The opsonic index is of value in determining the prognosis of tuberculous bone and joint disease. 5. When there are discharging sinuses and mixed infections the opsonic index may be raised by the use of tuberculin without corresponding improvement in the general or local conditions (specificity).

The Lancet, December 28, 1907.

Appendicostomy in Chronic Dysentery.—J. A. Pottinger states that the most striking result of this opera-

tion is the facility with which the irrigation of the large bowel can be effected. It has also been employed in chronic constipation for the administration of suitable medicinal remedies having a local action, while its use has been suggested in complicated cases of enteric fever and in cases requiring gastrostomy as a substitute for the graver operation. It is in dysentery and more particularly the chronic variety, that the operation seems in some cases to give very gratifying results. The author records the history of a man of twenty-seven years who had been ill for six weeks, having as many as twenty daily passages of mucus and blood. The patient did admirably and a perfect cure resulted. The author calls attention to a few technical points as illustrated by the progress of this particular case. The catheter was at first removed between each occasion of irrigation, but it was found that even in twenty-four hours the wound closed so, owing to the growth of granulations, that it was somewhat difficult to find the opening, and latterly a soft rubber instrument was used and was left in the opening, being removed each day, of course, to be cleaned. Care was taken never to have a big "head" of fluid and no attempt was ever made to *dilate* the bowel, free passage through the rectal tube obviating this, which in an extensively ulcerated condition of the gut would have been a true danger.

Diarrhea, Erythema, and Asthma Apparently Due to Nasal Disease.—The patient of J. W. Stenhouse was a woman of thirty-nine years with a diarrhea which had lasted some six months. Later asthmatic symptoms came on and still later erythema urticaria. It was noted that the asthmatic attacks were accompanied with a degree of nasal obstruction. Examination of the nose suggested the advisability of a partial turbinectomy and rectifying of a malposition of the septum. As a result of this treatment the patency of the nasal passages was reestablished and the patient has since had complete immunity from all her symptoms, asthma, diarrhea, erythema, and tachycardia. The author does not suggest that this is absolute proof that the intranasal condition was the starting point of the various reflexes in an unstable nervous system, but merely states the facts as they occurred.

Infantile Gangrene of the Cornea in which the Treponema Pallidum Was Found.—A series of four cases is reported by S. Stephenson. This corneal condition known as keratomalacia is characterized first by athrepsia, and, secondly, by a sloughing condition of one or both corneæ, associated with but slight symptoms of local reaction, such as redness, reflex blepharospasm, or swelling of the eyelids. Curious, dry, frothy-looking patches of xerosis (first described by von Graefe) may sometimes be found in the ocular conjunctiva. They are not essential to the diagnosis. The necrosis of the cornea, contrary to what might be expected, is not due to any particular microorganism. Practically any pyogenic microbe, other conditions being favorable, may cause keratomalacia. In the author's cases he found *Staphylococcus albus, aureus,* and *citreus,* as well as pneumococcus, *Bacillus coli,* and, of course, the xerosis bacillus, or, as it is better designated, the *Bacillus communis conjunctivæ* (A. Lawson). Keratomalacia often leads to destruction of the cornea and, if the cause in the shape of some general illness cannot be grappled with, to the death of the patient, usually from bronchopneumonia. In all the four cases of the author the *Spirochæta pallida,* or an organism not to be distinguished from it, morphologically, was demonstrated in smears from the affected cornea when stained by the Giemsa and the Proca-Vasilescu method.

British Medical Journal, December 28, 1907.

Malignant Endocarditis Lasting Over Six Months Without Bruit.—In the history of a case reported by R. Capes an interesting point is that, although the illness and the pyrexia lasted seven months, at no time was a bruit ever heard, though the patient was seen by five medical men, all of whom were looking out for signs of heart disease. The rapid wasting at the end, with the enlargement of the liver and spleen, and loss of consciousness, made the theory of growth seem likely, though the continued rise of temperature for so many months was against it. Hence although the petechiæ, the pyrexia, and the slightly increased heart rate all pointed to a possible fungating endocarditis, a positive diagnosis was not arrived at. Even towards the end, as the liver became quite as much enlarged in proportion as the spleen, the diagnosis still remained doubtful. Cases not infrequently occur in which for a long time there is no bruit, or only a very doubtful one; but it is very exceptional for a case of such prolonged duration to remain without a bruit throughout. The patient was a man of sixty-four years, whose illness began with an influenza attack. The autopsy revealed fungating endocarditis. There were three small flattened patches of vegetations on the inner margin of the mitral valve, firm to the touch and not friable. Their surfaces were fairly smooth and uniform. These surfaces allowed the valves to come together so that there was no incompetency; hence presumably the absence of the murmur. The masses lacked the usual verrucose appearance so often present in such cases, and which invariably interfere with the competence of the valves. The firm, flat, smooth, non-friable character of the vegetations indicate why there were no physical signs of valve lesion. There were three small hemorrhages in the cerebral cortex, two on the right side—namely, one in the temporo-sphenoidal lobe and one in the fissure of Rolando; one on the left side in the second frontal lobe. There were infarcts in the spleen and kidneys, and the liver was enlarged. The lungs were engorged.

The Automatic Rhythm of the Heart.—A. M. Gossage comments on the prolonged controversy during the last twenty-five years as to the origin of the automatic power of the heart to beat rhythmically and reviews the various stages of the discussion. He notes that the arguments adduced hitherto are on the whole rather in favor of the venous origin of the stimulus, but declares that they are not incompatible with a muscular source. It has been disproved that every cardiac muscle fiber is capable of supplying its own stimulus and beating independently. It is certain, however, that the muscular fibers possess the properties of contractility, excitability, conductivity, and tonicity, and it is probable that these are experienced during the normal beat of the heart without the intervention of the nervous tissue. It is also certain that all the muscle fibers are not capable of building up a stimulus for themselves, but there is evidence to show that certain fibers of peculiar structure possess this property. While certain facts seem to find their readiest explanation in the neurogenic theory, especially the response of the quiescent heart to the stimulation of the accelerator nerve, there are others pointing as strongly to the hypothesis that the heart beat is purely muscular; and in the face of Engelmann's direct observations on the great veins in frogs and the occurrence of pulsation in the embryo heart before development of nervous elements, it seems to me that the complete myogenic theory has the more weighty evidence in its favor, and should be accepted until stronger arguments are brought against it. The conception that the rhythmic beat is purely muscular in its origin does not preclude the possibility of the beat being influenced by outside nervous impulses; this would give a sufficient explanation of the large nerve supply to the heart. Attributing the rhythmic power of contraction to the muscle is, of course, only a very partial explanation of the cardiac beat, the cause of which lies deeper in physicochemical changes in the cells.

Tuberculous Chlorosis.—A. James states that when we meet with a case which presents in a more or less marked degree all the ordinary appearances of chlorosis, and which yet on examination of the blood reveals the number of red corpuscles and the percentage of hemoglobin to be practically normal, we are very likely to find in it a history of past or present tuberculous disease. This condition, often occurring in young women, is one which long ago Trousseau recognized and called false chlorosis or tuberculous anemia; and although in recent times, when blood examination has become more of a routine procedure, the coexistence in tuberculous disease of an anemic appearance with a practically normal blood count is quite recognized, it seems that in cases apparently of chlorosis this possible association of tuberculous disease often passes for long unrecognized. Inasmuch as the recognition of such cases is important from the points of view alike of diagnosis, etiology, pathology, and treatment, the histories of three cases of this category are given in detail. In a general way such cases, though more tedious than those of ordinary chlorosis, recover fairly well. But although their general condition may improve, the blood count remains practically the same. It is believed that such cases present in reality an oligemia, that is, a diminution in the total amount of the blood. Trousseau believed that iron should be avoided and placed his reliance on arsenic and general hydrotherapy. The author believes that the condition is one which occurs in individuals who, as the result of hereditary or acquired causes, have given indications that they possess low resistance power to the tubercle bacillus. In what way and to what extent this blood effect may be salutary as regards tuberculous lung disease, we can only conjecture. The author's idea is that it may be by inducing an air hunger, and so stimulating lung function and nutrition. Anyhow, when we reflect that the quality of the blood is quite good, we can under-

stand that treatment to improve the health generally rather than the blood specially is what is required.

The Mental Origin of Neurasthenia and Its Bearing on Treatment.—D. Drummond points out the fact that in neurasthenia the physical symptoms are generally without any physical basis. The mental history of both the patient and his family are of great importance. It may be difficult to have a definite family history, but with care this can usually be made out and not infrequently it will include cases of insanity. Clinically considered, this is of much importance in establishing the mental origin of the neurasthenic disorder; in practice what it points to is the fact that serious dangers particularly threaten persons who inherit a nervous temperament, for whom, therefore, special safeguards in home surroundings and personal habits ought to be observed, just as those who inherit a tendency to tuberculous mischief must observe careful precautions in their surroundings and manner of life if they are to escape harm. Drummond believes that overwork, mental strain in business or other ways, the grief of bereavement, or some alarming shock, do not in themselves produce neurasthenia and cannot be said to be its cause, though by lowering health and weakening mental control they may contribute to the development of the more serious disturbance. On the other hand, he emphasizes the cramping and damaging effect on the mind of uncontrolled and bad habits of thought in early life, partly because of its testimony to the mental origin of neurasthenia, and also on account of a growing conviction that to such habits may be ascribed a great deal of the depression and mental discomfort from which nearly every one suffers at times. Treatment calls for a combination of insight, sympathy, and firmness that all do not equally possess. The personal factor of the physician cannot be overlooked or minimized. There must be an honest and straightforward statement to the patient dealing with the facts of the case—a statement that enters fully ino its pathology and touches lightly upon the symptoms: a statement that, by its very firmness, disinterestedness, and kindliness, wins the confidence of the patient, and encourages him to think better of himself, and to make a real effort to rise above his trouble and ignore himself. The power to help and encourage our nervous invalids undoubtedly increases with experience and practice; and the sooner we begin to talk rationally to them the sooner will we acquire the art of curing them.

Berliner klinische Wochenschrift, December 23, 1907.

Neuralgia of the Rectum.—Albu says that this is a purely nervous disease, having as its chief or only symptom pain in the rectum, anus, and adjoining parts. The pain radiates into the gluteal regions, toward the sacrum and perineum, and even, as in two of the author's cases, into the thighs. The pain is described as boring, burning, or lightning-like; is sometimes extremely severe, comes on in sudden seizures, and lasts from a few minutes to several hours. Sometimes the sufferer is rendered incapable of work by day and of sleep at night. The patients always suffer from neurasthenia, due to mental overexertion, psychical stress, irregular living, the misuse of alcohol, or tobacco, etc. Of Albu's five patients four were men, while Gant says that women are more often affected than men. Albu was not able to determine any cause for the onset of the disease and found that it had no relation to constipation. The diagnosis should be made only by exclusion and every other possibility should first be thought of. As examples of possible sources of error, he describes the cases of two patients whose symptoms for a time simulated rectal neuralgia, but one of whom suffered from carcinoma of the prostate and the other from tabes. The treatment includes anodynes by mouth, rectum, and subcutaneously, avoiding opium and its derivatives, belladonna in large doses proving very useful. Other measures are hot sitz baths, douches of hot water and steam, hot compresses, moist applications, etc. A most effective procedure is the systematic introduction of thick bougies, which apparently act by distending the diseased nerves. Regulation of the bowels should, of course, not be neglected.

The Technique and Significance of Wasserman's Syphilis Reaction.—Meier describes the latest modifications in technique that are now used in Wasserman's laboratory and also gives the results of the application of the method in a considerable number of clinical cases. Three hundred and fourteen serums, twenty-nine cerebrospinal fluids, one placenta, and one hydrocele fluid were examined. Of the 181 patients known to be syphilitic 81.7 per cent. gave a positive reaction, 2.7 per cent. a doubtful reaction, and 15.6 per cent. a negative reaction. In 21 cases in which syphilis could be excluded the result was always negative. The author concludes that the test is specific for syphilis and that it is sufficiently reliable to afford a useful addition to our diagnostic methods, but that its complicated nature demands a skillful and experienced worker for its performance.

Münchener medizinische Wochenschrift, December 24, 1907.

Functional Tests of the Gastric Function.—Tottman has made very complete investigations of the gastric function in 60 cases of various sorts. In addition to the usual analysis of the test meal, Mett's pepsin method was used, Sahli's desmoid pills were given, and Schmidt's test diet was administered in order to determine the ability of the stomach to digest connective tissue. As the result of these comparative investigations Tottman states that the use of the stomach tube is the most unpleasant for the patient, but in cases of pronounced disease affords very reliable information. In instances of milder disorder it is less to be depended on and may even lead astray, since its introduction may of itself interfere with gastric efficiency. Schmidt's diet forms a most useful method and is little if at all liable to error. It is not adapted for repeated application, since the patients usually are not willing to resort to it a second time, and it is also unsuitable when only fluid food can be taken. Sahli's method can be used in all cases and is the most agreeable for the patient. Careful preparation of the pills from material of approved quality is an essential, and two pills should always be given at an interval of about five minutes. Under these conditions a negative result is more dependable than in the case of the test meal and is almost as reliable as with the Schmidt diet. Positive results must be accepted with more caution. It is very well adapted for use as a method for rapid orientation and for repeated application in watching the patient's progress.

Antitoxin and Albumin.—Much reports interesting experiments on the composition of antitoxins. Tetanus antitoxin was injected into women just before or some days after delivery and could be identified in the milk and in the serum of the infants. Ordinarily, however, when serum is given by mouth it does not reach the bloodstream unaltered. By means of the precipitin method and the fixation of the complement it was then shown that the mother's milk did not contain horse serum. The milk when injected into a nursing rabbit caused antitoxin to appear in the milk of this animal, but neither horse nor human serum could be detected in the milk. Three possibilities may be considered in connection with these phenomena: 1. The basis of the antitoxin remains horse serum, but can no longer be identified as such. 2. The horse antitoxin is converted into human antitoxin and then into rabbit antitoxin. 3. The antitoxin is not an albumin at all, and the mammary gland can effect what is not possible in the test tube, viz., the separation of the antitoxic function from the albuminous base. This assumption is the most daring, but also the most probable.

Twenty-five Conservative Cesarean Operations Without Maternal Mortality.—Eliseo Canton describes a series of twenty-five conservative cesarean sections done without a single maternal death, and gives his conclusions from this experience. The conservative cesarean section is no longer a fearful operation, but, thanks to antisepsis, every such operation lessens death from labor. In contracted pelves whose diameter is less than seven centimeters and a half, with a livng infant of normal development, the cesarean section is absolutely indicated. In contractions with diameter of more than seven and a half centimeters, with a living normally developed child, cesarean section should be done whenever the disproportion between the diameters of the head and the pelvis does not permit of the engagement of the head after several hours of strong contractions. In the same conditions with a diameter more than seven and a half centimeters, the choice between the cesarean section and symphyseotomy should be made for the first whenever the life of the mother is to not be preferred to that of the child. Under the same conditions the choice should be made between subcutaneous pubiotomy and the cesarean section according as the life of the infant or the mother is most important, since section is most beneficial for the child, and pubiotomy for the mother. In case of fever or infection pubiotomy is to be preferred. In contractions of more than seven and a half centimeters section is to be preferred to version in the interests of both mother and child. Between premature labor and hysterectomy we should choose the first on behalf of the child. In severe eclampsia forced labor is to be preferred in the interests of the child and mother.—*Annales de Gynécologie et d'Obstetrique.*

Book Reviews.

Insanity and Allied Neuroses. A Practical and Clinical Manual. By George H. Savage, M.D., F.R.C.P.; Late Physician and Superintendent of Bethlehem Royal Hospital; Lecturer on Mental Diseases at Guy's Hospital, and Co-editor of *The Journal of Mental Science*. With the Assistance of Edwin Goodall, M.D. (Lond.), B.S., F.R.C.P.; Medical Superintendent of the Cardiff City Hospital for Mental Diseases; Late Medical Superintendent Joint Counties Asylum, Carmarthen, and Co-editor of *The Journal of Mental Science*. With Six Colored Plates and Forty-five Illustrations in the Text. New and Enlarged Edition. Chicago: W. T. Keener & Co., 1907.

The general practitioner, in this country at least, has perhaps made greater use of Dr. Savage's manual than the psychiater, and this may continue to be the case. In this preface to the first edition the author states: "In this book I shall describe insanity and trace its life history. I shall explain the legal relationship of the insane, and make plain the duties of the physician who has to be responsible for their safety and welfare." In treating of idiocy, epilepsy, and chronic mental disorders he acknowledges drawing on the experience of others. In the present (fourth) edition the preface contains the remark: "I believe that all that is essential for the student of mental pathology, and for the general practitioner who needs aid and direction, will be found in this amended volume." The author conserves his former "provisional" classification, which he considers "more useful than elaborate new plans which would entail labor to the student to master, and which would in the end have to be thrown aside." Descriptions in such a small volume are necessarily brief. Chapters and appendices on legal relationships and hospitals, as long as the book is apparently for American readers, might preferably have related to America rather than to Great Britain.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Member of the Academy of Natural Sciences of Philadelphia; Member of the American Medical Association, etc., etc. Fourth Edition, Enlarged and Thoroughly Revised. Illustrated with Ninety-three Engravings. Philadelphia and New York: Lea Brothers & Company, 1907

The present has come to be recognized as one of the standard works on hygiene and sanitary science and its appearance in another new edition bears evidence of the appreciation of many readers. The author states that to bring the work fully up to date every sentence has been reviewed and many changes have been made, besides the addition of about twenty pages of new matter That the revision has been a thorough one is shown by the presence of sections on the opsonins, on the permanganate-formaldehyde method of disinfection, on the construction of septic tanks for sewage disposal for private dwellings, etc. One of the few criticisms that suggests itself to the reviewer is that the illustration on pages 48 and 119, respectively, seems hardly important enough to require another appearance later on in the book. Figure 33 is referred to on page 188 when it is Fig. 36 that is meant. It is a pleasure to call attention to this most satisfactory book on a highly important subject.

Diseases of the Stomach. By Dr. I. Boas, Specialist in Gastroenteric Diseases in Berlin. The sole authorized English-American Edition from the latest German Edition, by Albert Bernheim, M.D. (Freiburg, Germany), Philadelphia; Assistant to the Late Dr. D. D Stewart at the Polyclinic Hospital and Post-Graduate School, as Instructor in the Department of Diseases of the Stomach and Intestines; Privileged Physician to the Jewish Hospital of Philadelphia; Examining Physician to the Free Hospital for Poor Consumptives, Philadelphia —White Haven; Consulting Physician to the Nazarene Home for the Aged; ex-President of the Northern Medical Association of Philadelphia Illustrated with Five Full page Plates and Sixty-five Engravings in the Text. Philadelphia: F. A. Davis Company, 1907.

The work just issued compares very favorably with its predecessor which dealt only with the diseases of the intestines. Hitherto there has been no authorized translation into English of Dr. Boas's views, *in toto*, on diseases of the stomach, and a well deserved reception may confidently be expected to meet the present edition. The author has made his text perfectly clear, readable, and interesting. The many conflicting views which he considers irrelevant are calmly ignored, leaving a virile presentation of his personal views which, when read, are also remembered. Rarely does he hesitate, but rather speaks with an authority that begets conviction. Throughout, the large personal experience of the author shows as plainly as it would in a didactic lecture, and we feel that it especially fits the needs of the general practitioner.

In the first two chapters, the topography, histology, physiology, and chemistry of the stomach are dealt with concisely and in a practical manner. The author then divides his work into two large parts, the general and the special. The first deals with an excellent system of history taking and the examination of the patient, and about one hundred pages relating to the examination of the gastric contents. He concludes the first part with urine and blood analysis, and general methods of treatment, such as diet, balneotherapy, physical therapeutics, and medicinal agents. The second part is more like the usual text-book arrangement of the subject and treats each disorder separately. The writer is fair and rational in his opinions, practical in his therapeutics, and in diagnosis has the necessary breadth to make a good clinical teacher and a helpful guide.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon., Edin.), Professor of Gynecologic Surgery at the Johns Hopkins University; Gynecologist to the Johns Hopkins Hospital, Baltimore; and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia; Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia. Illustrated by Hermann Becker, Max Brodel, and Others. Volume I. Philadelphia and London: W. B. Saunders Company, 1907.

Among the novel features of this latest work on gynecology may be mentioned the recognition of the close relationship existing between gynecology and general surgery, the inclusion of certain obstetrical subjects which are closely allied to gynecology, the presence of a lengthy chapter on medical gynecology, the absence of matter of an elementary kind which is found in every text-book, the insertion of much interesting material on the historical development of gynecology and abdominal surgery, and chapters on special subjects such as operations before puberty. In the present volume H. A. Kelly contributes the chapters on Gynecologic Technique; Vesical Fistulæ; Vaginal Drainage for Pelvic Abscesses; Conservative Operations on the Ovaries and Tubes, and (in conjunction with E. Hurdon) Operations before Puberty. The latter also supplies the chapter on the Pathology of the Reproductive Organs. C. P. Noble is responsible for the chapters on Plastic Operations on the Perineum, Vagina and Cervix; Curetage of the Uterus and Inversion of the Uterus; the Preparatory Treatment of Celiotomy Cases; After-Treatment of Celiotomy Cases; the Celiotomy Incision; Operations for Retrodisplacement and Prolapse of the Uterus; Abdominal Hysterectomy and Myomectomy; Vaginal Myomectomy, and (with B. M. Anspach) on Medical Gynecology. Bacteriology is handled by W. W. Ford. A. M. Fullerton writes on Non-plastic Operations of the Vulva and Vagina. G. M. Edebohls has a short chapter on Combined Gynecologic Operations. G. L. Hunner is responsible for the chapter on Diseases of the Bladder and Urethra. Ovariotomy is treated by A. J. C. Skene. H. T. Byford is responsible for the chapter on Vaginal Section for Diseased Ovaries and Tubes. J. C. Webster writes on Removal of the Uterine Appendages Abdominal Hysterectomy for Inflammation of the Uterine Appendage is contributed by J. M. Baldy. Radical Abdominal Hysterectomy for Cancer of the Uterus is from the pen of J. G. Clark. The Byrne Method of Treatment of Cancer of the Uterus is by X. O. Werder, and F. Henrotin supplies the chapter on Vaginal Hysterectomy. It will thus be seen that the editors have drawn up an attractive bill of fare; and on sampling many of the chapters and reading some of them we find that the expectations aroused by the preface and contents are fully realized. The two longest chapters in the book, and in some respects the most important, are those on Medical Gynecology and on the Pathology of the Reproductive Organs. The former of these will prove of much value to the general practitioner, who will find in this one chapter much of the information which he requires on gynecology. The chapter on Ovariotomy contains much that is found in the same words in Skene's "Diseases of Women," published twenty years ago! The reader can choose for himself between the abdominal and vaginal routes for the performance of various operations; the claims for each method are well presented by eloquent advocates. The book is well printed and illustrated. For the surgeon, the gynecologist, and the general practitioner it will prove valuable.

Society Reports.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held December 23, 1907.

THE PRESIDENT, DR. WALTER LESTER CARR, IN THE CHAIR.

Memorial Address.—Seneca D. Powell, M.D. By Dr. EDWARD D. FISCHER.

Treatment of Hyperphonia (Stuttering and Stammering) by the General Practitioner.—Dr. EDWARD W. SCRIPTURE read this paper. He said that stuttering and stammering were terms loosely applied to one disease, which might be defined by its fundamental symptom, namely, excessive innervation of the vocal cords. The disease might, in fact, be properly termed "superenergetic phonation," or "hyperphonia." (See MEDICAL RECORD, May 11, 1907, page 771.) This disease had no connection with another disease of speech which arose from insufficient and mistaken coordination of the speech muscles, due to defects in the vocal organs, in the nervous control, and in the ear. This form of speech defect might be properly termed "subenergetic phonation," or "hypophonia." The symptoms of superenergetic phonation might be classed as follows: 1. Cramps and hypertonicity of the breathing muscles. He had had several cases in which the cramps had lasted twenty to thirty seconds. 2. Cramps and hypertonicity of the laryngeal muscles. These sometimes went along with the breath cramps and shut the larynx up tight so that no tone could be produced. About nine-tenths of stutterers spoke in a monotone; this was presumably due to the fact that it was easier to fix a group of tight muscles for one position than to keep them in easy action. 3. Cramps and hypertonicity of the muscles of pronunciation. The patients who forcibly contracted these muscles for a moment or more were often called "convulsive stammerers." Those who had a series of cramps whereby they repeated a sound were termed "stutterers," or "reduplication stutterers." There was no essential difference between the two classes. 4. Accessory cramps, contortions, and tics. He said the specific term for the disease would thus be "hyperphonia," and the three groups of symptoms would be called "respiratory, laryngeal, and articulatory cramps." The facial and bodily contortions might be termed "accessory spasms and tics." He believed the disease to be a pure psychomotor neurosis; it was a habit over which the patient had no control. Among the exciting causes were found irritation in the breathing organs, as from adenoids, imitation of other stutterers, injuries to the breathing organs, fright, etc. The general therapeutic indications were naturally treatment of any nose or throat trouble that might be present, building up the general health, etc. Every case of hyperphonia required special therapeutic procedures. In most instances he began at once to teach the person to speak melodiously, using little verses, and sliding the voice somewhat excessively. Then the individual was taught to speak and converse with melody. This "melody cure" was as simple as it was effective, and Dr. Scripture stumbled on it quite by chance while trying the various other cures. Fully one-half of the patients would absolutely cease to stutter as soon as they had learned to speak melodiously. The reason why this cure was so effective was that the stuttering habit was associated with one definite manner of speaking. It was not carried over to a manner of expression that the patient felt to be utterly different. A stutterer never stuttered when he sang, because singing was to him something quite different. Expressiveness was developed. Most hyperphonics were stiff and awkward in their manner of expressing themselves, in their posture, in their gestures, etc., and for these defects it was well to exercise them in talking with gestures, in declaring emotional pieces, etc. They should have distraction from the compulsive idea. The patient might be taught to beat time in a vigorous and snappy way, for instance. These procedures would produce a permanent cure in three-quarters of the stutterers and stammerers, if practice was given at first as often as possible and then at steadily increasing intervals. Dr. Scripture then presented some of his patients.

Dr. CHARLES L. DANA expressed the interest that all felt in the demonstration by Dr. Scripture. It was generally agreed that stammering was a form of mental tic. His own experience showed that a certain percentage of stutterers got well, outgrowing the trouble without any particular difficulty; then again there was a certain proportion that never got well. A good deal of the success depended upon the faithfulness of both the teacher and the student. A good many boys started well in the treatment, but unless they kept it up relapses would occur.

Dr. L. PIERCE CLARK said that he believed Dr. Scripture's studies were sound and in the right direction concerning the nature and cause of stammering. The disorder was no doubt to be classed with the minor psychomotor neuroses. Its real pathogenesis was a disorder in coordination of mental associations. A block in the outlet of the flow of vocalization in speech resulted in a spread of the cramp defect into other adjacent and closely related motor centers, such as spasms of the face and finally in the upper and lower extremities. Thus the manner of spread of the cramp was an exquisite illustration of the well-known diffusion law of motor discharge in cortical centers, vulgarly represented as the ever-widening circles or waves caused by throwing a stone in the water. It seemed to him the most practical issue to be drawn from Dr. Scripture's study was the importance of the ounce of prevention idea. These speech disorders were so much more readily overcome before the cramp habit was old and fixed. Taken early the cure habit ought to have an equal chance with the cramp habit. Mental analysis for the initial cause of the cramp ought to go hand in hand with the suppression and substitution treatment shown by Dr. Scripture. He was struck with the fact that nearly all the stammerers were usually of emotional and sensitive temperaments. No doubt faulty mental hygiene in the home and school associations produced or increased the stammering defect in such, a remedy for which was quite obvious to all who dealt much with neurotic children.

Dr. L. E. LA FÉTRA said he wished to bear testimony to the success obtained by Dr. Scripture in the cases referred to him at the Vanderbilt Clinic. It was necessary that these patients should be taught to breathe properly. He thought that all must admire the ingenuity of the mental therapeutics employed in the treatment of these cases; he managed and redistributed the nerve forces and so accomplished his results. An interesting thing was giving the child another voice.

Dr. GRAEME M. HAMMOND said he did not believe that a severe stammerer ever got over this trouble as long as he was sensitive; embarrassment made him stammer more. The cure of a severe stammerer was at most a matter of time. No stammerer stammered when alone. He should learn to speak when alone. Timidity was a most potent factor in keeping up stammering.

Dr. Scripture said that the moment the patient, even in severe cases, found another voice, he gained confidence and was then all right.

The Treatment of Trifacial Neuralgia: General Medical Treatment.—CHARLES L. DANA spoke on this subject. Trifacial neuralgia, he said, was a name given to a group of symptoms characterized by pain along the course of the trigeminal nerve. It might be caused by toxins and diseases of all sorts. No single measure of therapeutics availed against it. There was a subgroup

of the disease known as tic douloureux, a definite, easily recognized clinical condition. Tic douloureux was not one thing Symptomatic tic douloureux might be caused by a growth or tumor, or exostosis, or other organic conditions. Symptomatic tic douloureux he said he would not consider. This disease was one of early life, before the age of forty, and was severe and chronic in its manifestations. He called attention to the association of these tics with migraine. In typical cases these attacks fused into one and left the patient with a typical trifacial neuralgia. He called this form of tic migrainous tic. This form occurring in the younger class of people was one which he did not believe should be operated upon. The more they were operated on the worse were they made. The operative treatment of tic douloureux might be very effective in the degenerative form of the disease, but should be applied cautiously in early life. True tic douloureux was a degenerative neurosis affecting the trigeminal nerve and occurred rarely before the age of forty. The pathology of the disease he said he did not know. It seemed to him to be a degenerative condition affecting the peripheral nerves. It seemed associated with vascular conditions so much that it seemed as much a vascular as a nervous disease. As was first demonstrated many years ago, the blood supply to the nerve in these cases was very poor. Degenerative tic douloureux was a disease about which one must bear in mind one point, *i.e.* the tendency to get well spontaneously. There was another peculiarity—its great tendency to remissions. The attacks at first might last for weeks and recur in six months; or they might recur two or three times a year. The remissions and disappearances of the pain for several months a year were a characteristic feature of the disease. Because of this fact he had seen many cases supposed to be cured by all sorts of agents, such as Christian Science, osteopathy, etc. He had also seen a case supposed to be cured by washing out the antrum, when there was nothing wrong with the antrum. So far as the medical treatment went, his therapeutics were pretty well formulated. If he got hold of a case of tic douloureux not over two or three years in duration, he gave the rest cure and doses of strychnine; in more than one-half the cases the patient would have the remissions and in one or two years there would be no return. If the disease had lasted five or six years the rest cure had some but doubtful value; such cases should be sent to the surgeon. He had not had much experience with the alcohol treatment. As to the surgical treatment, he said he was satisfied that the operation as performed by Dr. Robert Abbé was an effective and satisfactory one.

Schlösser's Alcohol Injections for Facial Neuralgia.—Dr. Otto Kiliani read this paper. (See page 90.)

Electro-Anesthesia: Introduction to the Subject and Its Surgical Possibilities.—Dr. James E. King (by invitation) read this paper. He said that many of the great advances in surgery had only been possible through the agency of general anesthesia; advances in surgery had been in direct ratio to the improvements made and perfection obtained in safely abolishing sensibility to pain. All the agents at present, however, at their command for this purpose were more or less lethal poisons to the organism. It could now be safely said that there would be no further improvement in anesthesia with the agents at their command at present. Anesthesia as they had it to-day was not an unmixed blessing, and even the most sanguine optimist must admit that there was still much to be desired, and every effort to discover new agents or methods for anesthesia should receive hearty encouragement from the profession. Some three years ago, in conversation with Dr. E. W. Scripture, he detailed to Dr. L. Pierce Clark and himself some experiments undertaken by him some years before in the production of local anesthesia by the sinusoidal current. They then decided to consider ways and means for undertaking further experimentation. Before they had completed their arrangements, however, the article by Stephen Le Duc appeared describing the use of a special current by which he obtained local and general anesthesia. Then they decided to abandon their original plan and to first experiment with the Le Duc current. He touched only upon the more salient and significant features of their work. Dogs were used for general anesthesia. After describing the peculiar current used, he said the points selected for the application were over the cerebrum and on the back over the kidneys in order that the current might pass through the brain and spinal cord. The shaving and cleansing must be carefully done, for any hair offered a considerable resistance to the passage of the current and interfered with the success of the experiment. The head electrode was attached to the negative pole and the back to the positive pole. Until the resistance of the skin was overcome there was no effect. As the current began to be felt the animal looked about in a dazed manner. From this point the increase in voltage should be very gradual. The dog quickly passed into a stage of excitement which was quite analogous to the same stage seen in chloroform and ether narcosis. At this stage the current was increased more rapidly and the animal lapsed into unconsciousness. A slight further increase in the current would secure relaxation and abolition of all movements. The dog could then be placed in any position and operations performed. After the current was shut off the awakening was immediate and the dog rose to his feet at first a litle confused, but soon acted the same as before his anesthesia. He had kept dogs under the current from a few minutes to two hours and found the animal recovered as quickly after the longer period as the shorter. The circulation did not seem to be much affected, except for a slight rise of blood pressure. In some of the animals the respiration was very much embarrassed throughout the anesthesia and this difficulty had been their most difficult problem. When death occurred it was from respiratory failure, but it was possible in many cases to restore the animal by artificial respiration, as the heart continued to beat long after the breathing had ceased. The same current had been used for local anesthesia, but their experience would seem to indicate that at its present imperfect state it might have a limited range of practical usefulness. The only record of the use of this current in producing general anesthesia in man was the testimony of Le Duc himself, who twice submitted himself to it. He described his experience as not an unpleasant one, except for the mental distress arising from the realization of the gradual loss of his faculties. With this came a feeling of helplessness and inability to make voluntary movement or speak. He characterized it as a nightmare. The fear of the current prevented the experimenters from pushing the voltage to a point where loss of consciousness and anesthesia were complete. The length of time he was under its influence was twenty minutes. Upon cessation of the current the return to normal was immediate. They believed that the problem of anesthesia would one day be solved in this way.

Demonstration of Le Duc's Apparatus.—Prof. F. L. Tufts of Columbia University (by invitation) demonstrated and explained this apparatus.

Value of the Le Duc Current in Neuralgia.—Dr. L. Pierce Clarke considered this phase of the subject. He said that more extended experiments were necessary to determine the final value of the Le Duc current in neuralgia. The majority of thir electric currents were nerve stimulants, such as faradism and galvanism, but few currents lent themselves readily as nerve sedatives. He believed the Le Duc current was one of the best of this latter class. Until very recently it was generally held that the brain was not directly excitable by the electric cur-

rent. Until 1870 all investigators like Magendie, Flourens, Louget, Weber, and others believed in the non-excitability of the brain. During the seventies, although a host of new facts in cerebral localization were added to their knowledge, it was quite generally held that the brain remained non-excitable to electricity, applied from without the skull. The possibility of passing an electric current through the intact skull was first shown by Erb in 1867. In a few years Bouchard and von Ziemssen confirmed Erb's views.

The speaker said that the electric resistance of the cranium impregnated with blood and organic fluids was much less than was generally supposed. Thus Le Duc found that between the electrodes, one placed on the forehead and one on the occiput, there was a resistance of 300 or 400 ohms. Experimentation on the fresh skull showed that the skin, muscles and bone covering the brain had a resistance of but 150 to 200 ohms. Furthermore, von Ziemssen proved that the cerebral substance was the best conductor of electricity in the human body, with the exception of muscle, which was about three times greater than cerebral tissue. Of all the deep-seated organs, the brain was the most accessible to electricity. In view of this it was difficult to understand why brain disorders had remained untreated by electricity. On account of the great volume of muscle intervening, which must first be penetrated from without, the spinal cord was much less easy to reach, yet not a few spinal cord diseases were apparently successfully treated by electricity. In making cerebral applications of electricity one must bear in mind that labyrinthine vertigo was invariably induced if applied from side to side. The vertigo was very unpleasant and should be avoided by applying the current antero-posteriorly, so as to have it spread quite evenly over the hemispheres of the brain. Different brain disorders were being treated by the Le Duc current in this country and abroad, but the tests had not been carried far enough to be spoken of at this time. One of the greatest values of the Le Duc current would be shown in the field of cerebral physiology. By means of the current genuine epileptic fits might be liberated in the brain, and that, too, after the current had been suspended. The amount of potential current able to induce a fit might be definitely established for each animal specie. Then different sedatives might be administered to the animal and the differences of the amount of current showed the strength of the sedative. The accurate therapeutic advantages of this form of experimentation, he said, were quite obvious.

The general effect of the cerebral application of the Le Duc current was highly characteristic of normal sleep. It was not a coma from which the animal slowly recovered. The awakening was instantaneous, as from normal sleep. All bodily functions were resumed as before the application. The future value of the current in special forms of insomnia was obvious. He said it remained for him to speak briefly of his own observations concerning the use of the Le Duc current on all forms of peripheral nerve pain. The relief of all sorts of neuralgic and neuritic pain was instantaneous. The length of time during which pain was abolished varied from two to six hours. As a temporary sedative in locomotor ataxia and facial neuralgia, when the relief from pain for a few hours, even without the use of sedatives, was a matter of great moment, he said he could very heartily recommend the use of the Le Duc current.

Dr. George E. Brewer said that seven or eight months ago, when Dr. Clark suggested to him electro-anesthesia, he was skeptical; but after reading the report of Le Duc, which was so full and convincing in argument, he was glad of an opportunity of watching some observations carried on in the laboratory of surgical research. As the result of the observations he had made, and as the result of Dr. King's and others' experiments, he said he was convinced that in this current they had something extraordinary for the production of anesthesia. On one or two occasions he had seen animals to whom the current had been applied go through identically the same symptoms which followed ether or chloroform narcosis, resulting in the same condition of profound surgical anesthesia. There was this, however, to be said, at the present time, that they were in no position to recommend a trial on the human subject. During October he was able to give a demonstration of this method; he was enabled to show an animal in complete surgical anesthesia upon whom he performed a laparotomy without the evidence of the slightest pain. At that time he said that the procedure was such that he could give no definite prediction. There were some respiratory disturbances in some cases; in some they passed from the condition of excitement into one that threatened the life of the animal. But, on the other hand, without any particular change in the technique or in the current, one found that certain animals responded easily to the influence of the current, passed through the cerebral irritation and excitement into a natural sleep; the general anesthesia appeared superior to one following the use of any other agent. One did not know as yet how long it would be before this method could be used with safety on the human subject; but he believed they were on the eve of a great improvement. It would be a boon to all surgeons if they could have an agent which was devoid of all toxic effects, which did not irritate the lungs and kidneys, and particularly which did away with the often very unpleasant after-effects of the general anesthetics now in use.

Dr. Graeme M. Hammond considered tic douloureux a degenerative process and it did not seem to him that it was curable by any agent known to them at the present time. He compared it with locomotor ataxia; the pains were those of locomotor ataxia; the pains in both conditions disappeared spontaneously. So far as medication went he knew of nothing better than massive doses of strychnine. In his practice he carried the treatment much further, using doses of one-third to one-half a grain three times a day; to reach this dosage, however, required a gradual increase in the dose covering a period of from one year to a year and a half. This treatment should be kept up for two or three years and there would be no period of remissions. He had little experience with the alcohol treatment. He had had one case in which the strychnine treatment appeared to be serviceable for a time, but eventually it failed. The patient was subsequently sent to Dr. Kiliani, who employed the Schlösser method, and success followed the injection. This was a very severe and obstinate case.

Dr. Edward D. Fisher asked if this method of anesthesia possessed any difference from the electrocution method used in Sing Sing.

Dr. I. S. Hirsch said that the current described by Le Duc in February had been employed in the Mt. Sinai laboratory since 1905. In that year this was described as a humane method of electrocution, judging from animal experimentation. The experiments were carried on in rabbits; these animals required more current than dogs. When the current was turned on similar effects were noted as were seen in human beings in the beginning of the anesthesia. There was a period of excitement and the animal gradually fell on the left side. Why the animals fell to that side as a rule he did not know. A very important thing noted in the experiments was the period of inhibition of respiration. Dr. Hirsch said that he was not inclined to be very sanguine regarding the use of this current in the human being.

Dr. James E. King and Prof. F. L. Tufts closed the discussion.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twentieth Annual Session, Held at New Orleans, La., December 17, 18, and 19, 1907.

THE PRESIDENT, DR. HOWARD A. KELLY OF BALTIMORE, IN THE CHAIR.

(*Concluded from page 79.*)

Abdominal Cesarean Section.—Dr. HENRY D FRY of Washington, D. C., discussed the management of labor in minor degrees of pelvic contraction, with especial reference to the relative indications for abdominal cesarean section. He tabulated 18 cases of cesarean section.

Treatment of Diffuse Suppurative Peritonitis.—Dr. STUART MCGUIRE of Richmond, Va., reviewed the work of Muscatello, Clark, Fowler, Bond, Cannon, and Murphy, and stated that the present generally accepted method of treatment had not been adopted empirically, but was the result of deductions from scientific observations. A recent analysis of the last five hundred cases of appendicitis operated on in his private hospital gave a record of twenty-four patients with diffuse suppurative peritonitis. The first six were treated by the old method of irrigation and multiple drainage, with five deaths; the last eighteen were treated by the so-called Fowler-Murphy mehod, with but one death. The difficulty he had experienced in carrying out the treatment was in maintaining the patient in an exaggerated Fowler position. He found by visiting other hospitals that two principles were in practice, angulation of the patient and angulation of the bed. The first was effected by keeping the bed horizontal and elevating the body of the patient by means of a shoulder-rest; the second by elevating the head of the bed and allowing the patient to lie flat on the inclined mattress. The advantage claimed for the semi-sitting position over bed elevation was that it gave better drainage, but this he did not believe to be true, as it was impossible to maintain the patient in the proper position on a shoulder-rest, while it was an easy matter to prevent his slipping on an inclined mattress. The disadvantages of the semi-sitting position were that it made it difficult for the nurse to handle the case, that it was attended by muscular tension and fatigue, and that the patient would slip down so that his body would bend at the costal arch and his abdomen would be on a plane parallel with the surface of the bed. The advantages of elevating the head of the bed are that the mattress might be put at any angle, that the patient lay on the flat surface, often unconscious of his position, and that he was completely relaxed and easily nursed. Dr. McGuire exhibited a model and photographs of an apparatus which he had employed for more than a year to elevate the head of the bed, and to prevent the patient sliding down the incline. The bed elevator consisted of a wooden base and upright piece, with notches on its side. An iron link supported a block which received the leg of the bed. When horizontal, it would slip up or down, but when oblique would catch in one of the notches. The bed-seat consisted of a board which made a shelf on which the patient sat. A wooden shaft projected downward and passed through a second board, which rested against the foot-piece of the bed. In the shaft were a number of holes, and a peg placed in one of them would prevent the shaft passing through the bottom board, and thus transfer the weight of the patient to the foot of the bed.

The Mechanism and Clinic of Pulmonary Embolism.—Drs. WILLARD BARTLETT and R. L. THOMPSON of St. Louis went into the history of the circulation of the blood, thrombosis, and embolism. They discussed the various reasons why thrombus formation took place, stating that it was most common in neighborhoods rich in venous blood. An embolus might float off if there were such thrombi and cause instant death if it plugged the pulmonary artery or one of its main branches, but if the clot was small and lodged in a small lung vessel no symptoms at all might be seen. Attention was called to varicose veins conducting the blood from large abdominal tumors, and the object of the paper was their recognition and treatment. Thrombus formation had attended as high as 5 per cent. of certain long series of operations, while 2 per cent. of the same were attended with fatal pulmonary embolism. The authors reported 22 cases, 16 of them surgical. Autopsy was performed on the majority of the 22. Pulmonary embolism occurred in these cases at intervals varying from one to twenty eight days. Two of their patients recovered, but 20 died, the interval being the onset of pulmonary symptoms and death varying from a few seconds to twelve hours. The symptomatology was considered, as was also the prophylactic treatment.

The Diagnosis of Extrauterine Pregnancy.—Dr. H. J. BOLDT of New York read a paper on this subject. Under the term extrauterine pregnancy he included all fecundations which were situated outside the uterine cavity. While, anatomically, extrauterine pregnancy might be divided into several varieties, from a clinical point of view, such differentiation was not essential. Tubal pregnancy was the most frequent form of ectopic gestation. Uninterrupted extrauterine pregnancy was but rarely recognized, and then usually by mere accident, when operating for other conditions, or when examining a patient for a complaint causing symptoms independent of extrauterine gestation. He had never palpated a tubal pregnancy prior to the occurrence of symptoms due to the pathological implantation of the ovum, except in one instance, a double tubal gestation. In this case, however, the right tubal gestation gave rise to symptoms and was diagnosed. On the opposite side a tubal enlargement was felt, the nature of which was not diagnosed, but on operation the tubal distention proved to be due to a tubal pregnancy which had not begun to be interrupted by bleeding within the tube, or by any inflammatory process about the tube. The distention was limited to the outer two-thirds of the tube, which was freely movable and did not possess the doughy feeling of a pyosalpinx, or the tense elasticity of a hydrosalpinx, which he had supposed to exist on that side. The symptoms were divided into subjective and objective, and these were discussed at length. The absence in the history of the passing of a decidua did not, however, exclude the presence of ectopic gestation. In the large number of extrauterine pregnancies the author had seen, nearly three hundred, less than one-half gave an affirmative history on this point. A decidua might be passed unnoticed, or it might remain in the uterus and eventually be transformed into normal endometrium. After considering the diagnostic features of early extrauterine pregnancy, the author pointed out that after the second half of the gestation period the diagnosis depended on one's ability to determine the presence of a fetus outside of the uterus, which was, as a rule, not very difficult, unless the fetus was located between the folds of the broad ligament, and the woman had thick abdominal walls, or the fetus had been dead for some time, and was not in close contact with the abdominal parieties or the cul-de-sac of Douglas. At this period of gestation the history would aid very much, because in nearly all cases, in addition to the symptoms that were present in the early stages of ectopic pregnancy, there were also in the history symptoms which showed that one or more attacks of local or even general peritonitis had occurred. A pregnancy in the interstitial part of the Fallopian tube caused bulging of the uterine cornu of the invaded side. This bulging, being in an upward direction, necessarily made the cornu much higher than that on the opposite side, and the tube was given off at a much lower plane than that of the impregnated side. In the event of rupture, which

nearly always occurred during the first half of the gestation period, sometimes before the end of the second month, the hemorrhage was very profuse and required rapid intervention. The diagnosis was based upon the determination of pregnancy, with the appreciation of the local findings. Pregnancy in the horn of a bicornate uterus should not cause difficulty in diagnosis, if the pregnancy had gone to the fifth month or more and the fetus was still living. During the first half of gestation, in addition to the subjective symptoms of pregnancy, one should ascertain the presence, alongside the non-impregnated cornu, of the impregnated cornu, which was of a doughy consistency, unless the fetus was dead. In such event, the impregnated uterine horn became harder and more globular, so that it might be mistaken for a pedunculated myoma, or perhaps an ovarian cyst. But if one took all factors into consideration, the history and the objective symptoms to be found on bimanual examination, the diagnosis should not be difficult under ordinary circumstances. It might, however, be quite difficult if the patient was corpulent and had rigid abdominal walls. The greatest difficulty in making a correct diagnosis was in differentiating an ectopic gestation in its early stages from purulent inflammatory conditions of the adnexa, because the latter patients sometimes gave a history identical with that of ectopic gestation, and objectively the tube was distended and firm in consistency. Also the change in the uterus and in the vaginal mucous membrane might be similar. We might have the delayed or omitted menstruation, or atypical bleeding, and he had seen two cases where the blood was similar to that described above as atypical for the bleeding of interrupted extrauterine pregnancy. Furthermore, the character of the pain was sometimes identical, except that no collapse ever followed, as in profuse hemorrhage. He frankly confessed that occasionally in such cases he was unable to make the differential diagnosis without surgical intervention. The error most frequently made by physicians was that of mistaking ectopic gestation for early abortion. Of his ectopic gestation patients who had been curetted by their attendants more had been so treated under the impression that they had had an incomplete abortion than for any other erroneous diagnosis. In taking the history it would be found that with abortion cases the pains usually began with a moderate aching or drawing pain in the lumbar region, radiating toward the hypogastrium. In tubal pregnancy the pains were much more intense and were unilateral in the beginning, and the periods of intermission were generally further apart. Appendicitis might sometimes be mistaken for extrauterine pregnancy, or the opposite error might occur. In an inflammation about the appendix, however, the exudate, if there was one, would be higher up in the pelvis, more toward the iliac fossa. Furthermore, there was always a febrile condition in appendicitis, and none of the symptoms of pregnancy were found unless pregnancy and appendicitis were coexistent. Besides, if one was careful in eliciting a patient's history, there would always be found a difference.

Renal Decapsulation for Chronic Parenchymatous Nephritis.—Dr. J. C. Oliver of Cincinnati presented a full report of the case of a young man upon whom decapsulation of both kidneys was practised for the relief of chronic parenchymatous nephritis. The patient received medical treatment alone for a period of about eight months. At the expiration of that time his condition was much worse than it was at the time he began treatment. In fact, his condition was apparently desperate when a resort to surgical intervention was determined upon. Decapsulation was practised on December 9, 1905. The first favorable sign following operation was an improvement in vision the sixth day. The average secretion of urine prior to operation was from four to fifteen ounces in twenty-four hours. He passed nineteen ounces the day following operation, and by the end of a week this amount had increased to fifty ounces. The preexisting general edema diminished so rapidly that at the end of two weeks one could notice a very decided reduction in the amount. A marked increase in the percentage of urea excreted was associated with the augmented excretion of urine, but the percentage of albumin remained high. This period of miprovement was followed by one of relapse. The edema increased rapidly, and repeated tappings were necessary. The heart exhibited symptoms of gradual dilatation, and there were almost nightly attacks of severe dyspnea. The patient was very ill during January, February, and March, 1906. It became necessary to aspirate both sides of the chest six or seven times during this period. The patient became so desperately ill that his demise was looked for almost daily. A marked improvement took place in his condition about the first of April. The dyspnea diminished, the urine increased in quantity, the edema disappeared entirely, and the patient was able to get up and walk about. The amount of albumin in the urine diminished, and the casts were very much fewer and less granular. The patient was dismissed from the hospital June 8, 1906. During the period from June to October he continued to improve, and he gained in strength to such a degree that he was able to do some light work. There was but little further gain in the eyesight after the primary improvement. The patient was suddenly taken ill during the first week in October. He became comatose, remained in that condition, and at the end of three days expired. There was no return of dropsical conditions. The death was in all probability attributable to the deranged heart.

Inoperable Sarcoma of the Neck.—Dr. Oliver also reported a case of inoperable sarcoma of the neck which was apparently cured by a combination of the use of Coley's toxins with exposure to the action of the Roentgen ray. The treatment extended over a period of five months, at the conclusion of which the tumor masses had entirely disappeared. Nineteen months after the apparent cure a small nodule appeared in the right parotid region. The patient was now receiving injections of the toxins in the hope that these newer manifestations might also prove amenable to the treatment.

Thrombosis and Hydrocele in the Inguinal Canal.—Dr. Joseph Ransohoff of Cincinnati called attention to mild cases of torsion of the cord, of which he reported three cases, following severe strains. In one there had been a hernia, and the condition followed the use of an ill-fitting truss. In none of the cases did thrombosis occur in the subject of a varicocele. Under expectant treatment the thrombosis disappeared. A number of cases of hydrocele of the cord within the canal were presented as a sequence of thrombosis. One was clearly a hematocele and thrombus following an injury. In three other cases the operation showed the thrombosed vein and the hydrocele. One specimen presented was of the rare form of bilocular hydrocele of the canal of Nuck. The patient was 28 years of age. After a strain and slight illness, a hydrocele developed, part of which was in the labium majus, the other properitoneal. The operation, which consisted in total enucleation of the sac, showed a thrombosed vein. The essayist also presented a multilocular hydrocele of the inguinal canal, without any communication with the abdominal cavity, and without any history of trauma. The essayist believed that all cystic tumors within the canal resulted from thrombus and effusion into an unobliterated portion of the vaginal peritoneal process. In his paper he alluded only to cystic conditions of the canal which were secondary to hernias and resulted from the sequestration of a portion of the sac.

Traumatic Epilepsy.—Dr. E. Denegre Martin of New Orleans called attention to the importance of examining all scalp wounds immediately after injury, to determine whether or not fractures might be present, and calling at-

tention to the need of operation at any time that symptoms of cortical irritation were manifested, whether due to or suspected to be of traumatic origin. He reported three interesting cases, one of which was operated upon sixteen years after injury. The man at the time of operation was in such mental condition that he was not able to transact business and was a care to his family. He was relieved by an osteoplastic resection, and was so much benefited that he was able to resume business in a short time, and although he had had several convulsions since the operation his mind was perfectly clear and he felt that he had been greatly benefited. The third case was one of a child who had been struck in the head by a plow-share four years previously. The case had been given up as hopeless, the child presenting the most peculiar symptoms, absolutely unmanageable, and a constant care, with frequent convulsions both day and night. Removal of a segment of bone in this case at the seat of injury resulted in perfect relief and the mental restoration of the child, who, although operated on four years ago, had never had any return of the trouble and continued to improve.

The Value of Intestinal Exclusion as a Surgical Procedure.—Dr. John Young Brown of St. Louis, after discussing the various surgical methods in common use for the restoration of intestinal continuity following artificial anus formation for the relief of gangrenous hernia, reported three interesting cases, in which intestinal exclusion of the afferent and efferent bowel was made, followed by end-to-end anastomosis. The first case was one of strangulated, umbilical hernia, in which the cecum, appendix, ascending and transvere colon were found gangrenous in the sac. At the primary operation an artificial anus was made at the umbilical ring. Ten weeks after this operation the abdomen was opened through a median incision, and bilateral exclusion of the ileum and descending colon was done, followed by direct anastomosis of ileum to sigmoid, anastomosis being made with the Murphy button. The patient made an excellent recovery, and the prolapsed bowel, which remained after intestinal continuity had been restored, was removed later under cocaine anesthesia by clamp and cautery. The second case was one in which an artificial anus was made for a gangrenous inguinal hernia of the right side, the anus being made at the hernial site. In this case a similar procedure was undertaken. The abdomen was opened through the right rectus, the afferent and efferent loop of ileum excluded, and end-to-end anastomosis made with a button. The result was exceedingly satisfactory. The third case was one in which typholotomy was done through a gridiron incision, and at the same time the entire large bowel was excluded except the cecum. The operation was performed after faithful and unsuccessful efforts had been made to relieve an aggravated case of multiple fistulæ and ischiorectal sinuses, with necrosis of the coccyx. It was deemed advisable to turn the fecal current, and this method was resorted to. The turning of the fecal current resulted in healing of the old sinuses. The intestinal continuity was later restored by an exclusion of cecum, and a lateral anastomosis of the ileum to the ascending colon, the last operation being done through an abdominal incision through the right rectus muscle. In each of the cases reported the various steps of the operation were carried out without difficulty, and the results were all that could be wished. Attention was called to the fact that in cases in which an artificial anus was made for the relief of gangrenous hernia the irritation brought about by the constant fecal leakage produced a dense contraction of the scar, which resulted in complete relief of the hernia. By opening the abdomen through an incision away from the original wound the bowel could be excluded and end-to-end anastomosis performed with perfect ease, and without impairing the repair work done by nature in relieving the hernia. The paper concluded with a strong plea for the employment of intestinal exclusion in the treatment of this condition, the writer believing the operation to be safe, surgical, and satisfactory.

Hematuria in Pregnancy.—Dr. Edward A. Balloch of Washington, D. C., surveyed the literature of so-called idiopathic or essential hematuria, or hematuria without demonstrable cause. He showed that most of these cases were in the older literature, and that modern research tended towards skepticism as to the possibility of renal hematuria without some lesion in the kidney. The two principal theories of causation, the angioneurotic and the chronic nephritis theory, were discussed, and the conclusion arrived at that the latter has the weight of evidence in its favor. The writer's case was that of a woman of 31, married at 20, and a 7-para, with a history of almost continuous pregnancies. Blood appeared in the urine during the fifth pregnancy, the hematuria ceasing when the child was born. It skipped the sixth pregnancy, but appeared during the seventh. It did not cease with the birth of this child in March, 1906, but persisted until she came under the writer's observation in October, 1906. She was anemic from the continuous loss of blood, which cystoscopy showed to be from the left kidney. All medical means had been tried without avail. Nephrectomy was advised and accepted, followed by good recovery. After her return home, after operation, she immediately became pregnant. Hematuria was present, but disappeared with the birth of the child. The pathological changes in the kidney were those of glomerular nephritis, with interstitial changes. Accepting the hematuria as a symptom of chronic nephritis, the cause of the latter was discussed and considered to be mainly an autotoxemia from perverted metabolism, of maternal or fetal origin, or both. The influence of a nephrectomy upon subsequent pregnancy was discussed. As this was the second instance in the writer's experience where an uneventful pregnancy had followed a nephrectomy, he did not consider that the loss of one kidney had much effect upon subsequent pregnancy. The cystoscope and ureteral catheter were essential to proper diagnosis. The existence and functional capacity of a second kidney should be demonstrated before operative measures were practised. In the matter of treatment, the author considered that analysis of reported cases showed that equally good results had followed decapsulation and nephrotomy as had followed nephrectomy. He advised the following order of procedure: (1) Injection of adrenalin solution into the pelvis of the kidney. (2) Nephrotomy or decapsulation. (3) Nephrectomy. Nephrectomy should be resorted to only in cases intractable to other measures, as it was essential to save as much of the kidney structure as possible.

The Sensitive Short Uterosacral Ligament; Its Clinical Significance and Treatment.—Dr. Edward J. Ill of Newark, N. J., drew attention to the sensitive short uterosacral ligament as a pathological entity. Schultz and Burrage wrote of the condition long before this. Schultz gave no special advice as to treatment, while Burrage recommended incision of the ligament through an abdominal section. Ovaries had been sacrificed under false apprehension. The condition should not be confounded with intraperitoneal adhesions, nor with shortening of the base of the broad ligament, due to scars resulting from puerperal injuries. Outside of the acute pelvic exudate, the writer knew of no condition so painful on pressure as the short and sensitive uterosacral ligament. During the last twelve years 5 per cent. of all his operative gynecological patients suffered with a short and sensitive uterosacral ligament. When but one ligament was diseased it occurred in 73 per cent. on the left side. The disease might be congenital or acquired either in childhood or during active sexual life. Because of the short ligament a fixation of the uterus resulted. The circulation of the

organ became impaired. Catarrhal and metritic changes resulted in menstrual disturbances. In the acquired case, when but one ligament was short and sensitive, the pain was commonly referred to the sacroiliac synchondrosis or the iliac region of that short side. Menstrual pain seemed to be common to all, and was produced by metritic and endometritic changes. The neurasthenic cases offered a bad prognosis. Sterility was a frequent symptom, and abortion sometimes resulted from a very short ligament. The objective symptoms, when both ligaments were shortened, were to elevate the uterus and drag it into the hollow of the sacrum. Its mobility was much impaired. When one ligament was short the uterus was elevated and displaced to the side of the short ligament and retroposed. The short ligament stood out sharply when the cervix was drawn forward and downward. Great pain resulted from such procedure. The prognosis was bad for those who came from a neurotic family, or where from long-standing conditions the resulting pathological changes had become incurable. The operation suggested by the writer consisted of a most thorough stretching of the tense and sensitive uterosacral ligaments while the patient was under profound anesthesia, until the uterus became freely movable. A free dilatation of the uterus with graduated steel sounds, curettage, etc., should be added.

Cyst of the Pancreas.—Dr. Rufus B. Hall of Cincinnati said that true cysts of the pancreas were retroperitoneal tumors, while pseudocysts were intraperitoneal accumulations of fluid. Judging from the literature, the tail of the pancreas was the favorite anatomical location for the development of these cysts. The diagnosis of pancreatic cysts should be based upon the character of the contents of the tumor rather than upon the supposed demonstration of anatomical connection. The author reported a case of cyst of the pancreas in a woman 42 years of age, upon whom he operated successfully.

Transperitoneal Ureterotomy for Ureteral Calculus.—Dr. Gerry R. Holden of Jacksonville, Fla., reported a case in which he resorted to this operation for the removal of a stone in the ureter. He pointed out the reasons why an abdominal extraperitoneal operation was impossible on account of the thick abdominal walls. He did not believe that transperitoneal ureterotomy for ureteral calculus was often the operation of election. He did believe, however, that it was the best operation when the stone was impacted at or just above the uterine artery, provided one was reasonably assured that infection was either mild or else absent altogether.

The Inconsistencies of the Gauze Pack.—Dr. Hubert A. Royster of Raleigh, N. C., said we drained before we knew why we drained. A strip of gauze was simply a means of applying the law of capillary attraction. Rubber tube and tissue had been substituted, because the gauze so frequently failed to drain, acting as a successful stopper to the outlet. The one thing to be desired was patency of the wound, but there could be no more efficient plug than the stereotyped gauze packing. When intended for a drain, gauze should be inserted after the manner of a lamp wick; when used for hemorrhage, it should be packed in like wadding with a ramrod. There was a field for gauze in packing sinuses, fistulæ, and granulating wounds, so that healing might take place slowly from the bottom. Some would persist in using gauze drains and in the event of disaster would console themselves by believing that it was better to have drained and lost than never to have drained at all. The use of gauze to wall off septic matter in abdominal operations was fraught with danger and full of inconsistencies. The placing of large pads or rolls of gauze in the cavity necessitated a long incision, undue handling of the viscera, and almost always uninfected regions were in contact with pus-soaked gauze. When one end of the gauze was soaked with pus, the other end would become soiled sooner or later. The common practice was to push the gauze packs through pus collections into healthy parts or to wall off around localized abscesses with pads which soon became saturated with purulent products. Exposure of the peritoneum to gauze soaked with pus was just as dangerous as the presence of pus itself among the intestines. A glaring inconsistency was seen in the removal of the packs with contaminated hands. The surgeon should resolve, first, that he would employ gauze sensibly if he could, and not at all if he could not. Second, that if the using of gauze "maketh our technique to offend we will use no more gauze while the world standeth."

Gunshot Wounds of the Abdomen.—Dr. Le Grand Guerry of Columbia read a paper on this subject, in which he reported eight consecutive cases of gunshot wounds of the abdomen.

Suppurative Phlegmonous Gastritis.—Dr. J. Wesley Bovée of Washington, after going extensively into the literature of this subject, reported a case of circumscribed suppurative phlegmonous gastritis in which he resorted to gastrostomy. The case was complicated by pregnancy of six months and abortion. Mrs. T., white, 36 years of age, who had had seven children, followed in 1895 by a miscarriage, was admitted to Columbia Hospital, October 6, 1907. She had suffered from pain in the epigastric region for several years, which was usually relieved by taking food. Her last menstrual period occurred April 13, 1907, and she considered herself pregnant. October 3 she ate heartily of boiled cabbage for dinner and crabs late at night. In the night she was attacked by severe pain in the region of the stomach. Morphia was given for pain. The following day the pain continued and vomiting set in. An attempt to move the bowels by enemata and cathartics was unavailing. The temperature was elevated, ranging from 99.5° to 101.5°. Pulse rapid and weak. The next day croton oil was employed by mouth, but the bowels failed to respond. The various remedies were not effective in relieving the pain, constipation, and vomiting. The vomited material was first solid and partially digested food. Later it was watery and frothy, changing to dark green. She was so enfeebled and appeared to be so ill that the attending physician secured an ambulance and took her to the hospital Sunday night, as mentioned. No chill or sweat was experienced. Dr. Bovée saw her about 11 o'clock that night. At that time her pulse was thready and her countenance anxious in appearance. Examination under anesthesia disclosed the uterus extended to an inch above the umbilicus, and the epigastrium was distended, very tender, and tympanitic. She was promptly anesthetized and in the presence of Dr. Neff and Dr. Dorsey a median line incision above the uterus was made. The intestinal loops were congested, but non-adherent. The stomach was palpated. It was found to be fully three-fourths of an inch thick at the middle of the greater curvature, gradually thinning toward the cardiac end. In the pyloric end and in front was a mass nearly the size of a man's fist that was soft though not doughy to the touch. This gradually thinned out toward the middle of the stomach. The stomach was opened at about its middle by a longitudinal incision at about three inches and the mucosa inspected. To determine the nature of the enlargement more definitely a separate short incision was made over it, when the nature of its contents was manifest. Gauze was passed around it and it was opened and two to three ounces of grayish pus escaped. The long incision was closed and the pus cavity wiped out. A rubber tube was tightly sutured into it and brought out of the abdomen. A light gauze drain was packed about it. She was fed per rectum for twenty-one days. Five days after operation liquids were given by mouth as salt solution by hypodermocylsis and liquids by rectum did not quench her ravenous thirst. The following day the contents of the stomach came through the wound. A few days later solid

food was given and the tube removed. Stomach contents ceased escaping in a few days. On the eighth day, with little effort, she aborted, the fetus living three hours. With the exception of infection of the abdominal incision, which required resuturing, she had made an uninterrupted recovery.

Harmful Involution of the Appendix.—Dr. Robert T. Morris of New York said that most cases of stomach and bowel trouble were not cases of stomach and bowel trouble. Normal involution of the appendix was often a harmful process and produced many of the symptoms ascribed to other organs. Bile-tract adhesions, eyestrain, loose kidney, and several pelvic conditions caused symptoms similar to the ones produced by involution of the appendix. Differential diagnosis was easily made by two features: First, a persistent or frequently recurring sense of discomfort in the appendix region. Second, hypersensitiveness of the right lumbar ganglia. This latter point was of definite and constant diagnostic importance. To find the right lumbar ganglia, draw a line from the navel to the right anterior superior spine of the ilium. An inch and a half from the navel on this line will be found the diagnostic point on deep pressure. McBurney's point was six or eight inches away, at the other end of the line. McBurney's point had reference to acute inflammatory processes in the appendix itself. The point described by Dr. Morris had reference to reflex disturbances caused by the appendix. If the right lumbar ganglia alone were tender on pressure the appendix alone was responsible for disturbances of the stomach and bowel that were ascribed to other causes. If the disturbance proceeded from some organ in the pelvis, both right and left lumbar ganglia were tender. If the disturbance proceeded from the bile tract, or from eyestrain, or some point above the navel, neither the right nor left lumbar ganglia were tender. Dr. Morris referred to the new era of physiological surgery, based upon the studies of Metchnikoff and Wright. The patient would be allowed to do most of the work in managing his infection, and the surgeon was to leave him with such a degree of normal resistance after operation that he could manufacture his phagocytes and opsonins. He thought he stood alone in advocating the doctrine of the new era, but in a year or two more many surgeons would be upholding the doctrine. They would stop doing elaborate work in appendicitis cases with pus, for instance, and they would not fear spreading pus over the normal peritoneum, nor would they stop to remove the pus, provided that they could operate quickly and with so little disturbance to the patient that he was left with his normal resistance unimpaired. The surgeon's function was merely to turn the tide of the battle between bacterium and phagocytes, and they left most of the work for the patient. That was the new principle. Instead of trying to remove the infection by surgery, the infection would be left to be removed by the patient physiologically after turning the tide of battle for him.

Surgery of the Heart and Pericardium.—Dr. Rudolph Matas of New Orleans described the recent advances in the surgery of these organs. According to statistics, the total number of recoveries after operation on the heart was 43.83 per cent. In 134 sutured cases there were 49 recoveries. In 11 cases the heart was exposed without suture and 5 recovered. While the value of statistical conclusions must not be overrated, it might be safely concluded that heart wounds, far from being invariably fatal, gave three chances in four for survival long enough to permit surgical intervention; one chance in ten to heal spontaneously, and one in two to be cured by surgery. Further progress in cardiac surgery could only be accomplished by methods which would diminish three great factors in the mortality—namely, shock, hemorrhage, and infection. The writer then discussed the most recent suggestions which gave promise of decided progress in at least these three directions. First, the diminution of shock by simplifying the preliminary thoracotomy, which gave the operator free access to the pericardium and the heart. (2) By methods of hemostasis which controlled the bleeding from the wounded heart itself, while the suture of the wound was accomplished. (3) Methods which would diminish the tendency to fatal post-operative infection (a) by proper attention to the asepsis, usually neglected in emergencies; (b) by prophylactic drainage of the pericardium and pleura; and (c) by immediate or early obliteration of the pleural space and by the expanded lung to avoid the dead space left by the retracted lung in pneumothorax.

Present Status of Gastric Surgery.—Dr. J. Garland Sherrill of Louisville read a paper on this subject, in which he reported three cases illustrating different conditions for which operation might be done with the hope of materially benefiting the patient's condition.

Case 1.—Man aged 35 years. Gastroenterostomy done for dilatation, which was causing great distress, with the result that the patient had been entirely relieved.

Case 2.—White man aged 50. He gave a history of gastric trouble extending over a period of three and one-half years, with a diagnosis of ulcer of the stomach, with imperfect drainage. The operation in this case consisted of gastrectomy, or removal of the ulcer, and the ulcer-bearing area. The result in this case also was very good.

Case 3.—Woman. Gave history of suffering from indigestion and various stomach disorders for a period of six years, with an interval of quiescence. She had had a number of hemorrhages from the stomach; had lost in flesh, and began to show a cancerous cachexia. Diagnosis of ulcer of the stomach with contracture, probably beginning malignant change, was made. At the operation, which consisted of a gastroenterostomy, a cancerous nodular mass was found involving the lesser curvature of the stomach for three-fourths of its length, and the central portion of the stomach, both anterior and posterior surfaces, for several inches, and the left lobe of the liver, which was closely bound by the growth to the stomach. An anastomosis was made with difficulty, owing to the necessity of making it quite far to the left beyond the border of the tumor. It was possible to complete the operation only after making an opening through the gastrocolic omentum in addition to the one through the transverse mesocolon, and bringing the intestine through both openings and the posterior wall of the stomach through the opening of the greater omentum and there making the anastomosis. After this was accomplished the operation was completed in the usual manner. The patient made a good recovery from the operation, obtained great relief from the gastric discomfort, and had been enabled to take nourishment by the stomach, which was not possible for some time previously. She had developed, however, an edema of the feet which made the hope of her final cure very small.

The following papers were likewise read: "Some Recent Factors in the Elucidation of Chronic Joint Disease," by Dr. C. E. Caldwell of Cincinnati, O.; "(a) Tracheotomy for Foreign Bodies, 53 Successful Cases, (b) Fracture of the Clavicle," by Dr. Willis F. Westmoreland of Atlanta; "Some Remote Symptoms and Effects of Cholelithiasis," by Dr. A. M. Cartledge of Louisville; "Hare-lip and Cleft Palate," by Dr. Alex. Hugh Ferguson of Chicago; "Leverage in Spinal Disease," by Dr. J. D. Bloom of New Orleans; "Suture of the Urethral and Vesical Sphincters for the Cure of Incontinence of Urine, with the Report of a Case," by Dr. Hugh H. Young of Baltimore; "Operation for Relief of Rectovaginal Fistula," by Dr. George H. Noble of Atlanta.

Officers.—*President*, Dr. F. W. Parham of New Orleans, La.; *First Vice-President*, Dr. Willis F. Westmoreland of Atlanta, Ga.; *Second Vice-President* Dr. Henry

D. Fry of Washington, D. C.; *Treasurer*, Dr. Stuart McGuire of Richmond, Va.; *Secretary*, Dr. William D. Haggard of Nashville, Tenn.

St. Louis, Mo., was selected as the place for holding the next annual meeting in 1908.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Connecticut State Board Examinations.

July 9 and 10, 1907.

PHYSIOLOGY.

1. Give the steps in the digestion of a piece of bread and butter.
2. Define and illustrate metabolism.
3. What effect has diet upon the secretion and the constituents of milk? Illustrate.
4. (a) Name the ductless glands and give their functions; (b) What effect has the removal of the thyroid gland (c) and parathyroid?
5. Name in order the cranial nerves, and state whether motor, sensory, or of special sensation.
6. (a) What are leucocytes? (b) Give their functions in the normal body.
7. (a) What nerves control the action of the heart? (b) Locate and give the function of the cardio-inhibitory center and cardio-augmentory center.
8. What are the normal heart sounds? How are they produced?
9. (a) Give a short description of secretion of urine. (b) Upon what does the quantity secreted depend?
10. Enumerate and give the usual time of the eruption of the deciduous teeth, (a) and of their displacement; (b) the permanent teeth.

ANATOMY.

1. Describe the structure and physical properties of bone.
2. Mention in order the varieties of vertebræ and give the distinguishing marks of each variety. Illustrate by pen drawing.
3. Describe the attachments of the sterno-cleido-mastoideus muscle; (b) its function; (c) its value as a "landmark."
4. Describe the brachial plexus. The great sciatic nerve.
5. Describe the portal circulation.
6. Describe Scarpa's triangle; the popliteal space. Give the surgical importance of each.
7. Give a short description of the pleuræ.
8. Describe the uterus, also location, structure, supports, function.
9. Where are Peyer's glands found? What is their size, structure, and function?
10. Give the anatomy of the kidney. Make sketch of the minute anatomy of the same.

CHEMISTRY AND HYGIENE.

1. Give both (a) the normal and (b) the abnormal constituents of the urine. (c) Give a test for sugar and pus.
2. What are the chemical features in (a) disinfection? (b) fermentation? (c) decomposition?
3. What is the chemical explanation of the acidity of normal urine?
4. Give the general composition of living matter.
5. (a) What condition constitutes impure milk? (b) How is it adulterated? (c) What diseases may be spread through the medium of milk? (d) What are the duties of a milk inspector?
6. (a) Should a house water supply become contaminated, how would you detect it? (b) How does sewer gas differ from sewer air?
7. (a) From what sources may chronic lead poisoning arise? (b) Give symptoms and treatment.
8. Give the formula, use, and antidote for corrosive sublimate.
9. In two specimens of urine one is found to have a specific gravity of 1005; the other 1038. Describe the further urinary analysis, and give reports you would make.
10. (a) Define gas. (b) Define laughing gas. (c) Define marsh gas. (d) Define sewer gas. (e) Define diffusion of gases.

MATERIA MEDICA AND THERAPEUTICS.

1. Give the action and therapeutic uses of thyroid extract. (Desiccated thyroid glands.)
2. Give the treatment of the three principal varieties of intestinal parasites.
3. What are the indications for the use of pepsin, for pancreatin, for diastase?
4. What are the preparations and therapeutic uses of benzoin?
5. Name the official preparations of strontium and give their physiological action.
6. What is the physiological action of Fowler's solution? What are its uses and what are the symptoms of overdosage?
7. What is the action of sodium phosphate and what are the therapeutic uses?
8. What are the chemical antidotes for poisoning by the following drugs: bichloride mercury, carbolic acid, strychnine; and what would be their reaction? What would be a physiological antidote for opium?
9. Define an analgesic and state its action centrally and peripherally.
10. Give the physiological action of gelsemium and name some of the indications for its use.

SURGERY.

1. Name three microorganisms which may cause conditions requiring surgical interference, and give clinical symptoms of the form of disease each is most likely to induce.
2. Abdominal palpation, (a) technique, (b) findings and limitations.
3. Spinal anesthesia, (a) technique, (b) dangers.
4. Laboratory diagnosis of hydrophobia; (a) general technique, (b) your view of the reliability of the findings, (c) Pasteur treatment.
5. Diagnosis of intestinal obstruction of the ileum low down.
6. Diagnosis of obstruction at the pylorus.
7. Tracheotomy and intubation of the larynx compared as to (a) indications, (b) contraindication of each.
8. (a) Surgical anatomy of oblique inguinal hernia. (b) In what respects do direct inguinal hernia differ?
9. Diagnosis and treatment of acute middle ear infection.
10. How would you treat intracapsular fracture of the head of the femur on a vigorous patient of sixty? How in a feeble patient of seventy-five?

OBSTETRICS AND GYNECOLOGY.

1. (a) Describe asphyxia neonatorum. (b) How is it prevented? (c) Method of resuscitation.
2. In extraction of the after-coming head, give method of procedure in (a) arrest of head and arm at the superior strait; (b) arrest of an arm behind the occiput; (c) closure of construction ring about the neck.
3. Give causes and treatment of (a) hematocele, (b) cystocele, (c) rectocele.
4. Give the cause, prognosis, and treatment of pernicious vomiting of pregnancy.
5. How would you determine the previous existence of pregnancy in a given case of medicolegal importance?
6. (a) Name all the conditions that may cause delay in the first stage of labor. (b) To what is due the rigidity of the cervix?
7. (a) What is the distinction between presentation and position? (b) Describe the management in posterior positions of the occiput.
8. Give differential diagnosis of extrauterine pregnancy.
9. (a) Give all the causes of post-partum hemorrhage. (b) Give your method of treatment.
10. (a) When is the uterine sound contraindicated? (b) When is the uterine curette indicated?

PRACTICE, PATHOLOGY, AND DIAGNOSIS.

1. What is meant by ptomaine poisoning? Give some of the varieties and the general symptoms in these cases.
2. What is the etiology, the pathology, and what are the symptoms of arteriosclerosis? Mention possible sequels.
3. Differentiate between asthma and emphysema by their symptoms and pathological changes.
4. Name the causes of vomiting; (a) direct, (b) reflex.
5. What are the symptoms and sequelæ of a non-compensating heart?
6. Differentiate between eczema and psoriasis.
7. Give the symptoms of tubercular meningitis.
8. What are the causes and symptoms of obstruction of the ductus communis choledochus?
9. Differentiate pleuritis from intercostal neuralgia.
10. Describe a case of acute poliomyelitis anterior.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Connecticut State Board Examinations.

July 9 and 10, 1907.

PHYSIOLOGY.

1. *Bread* consists of proteid, fat, carbohydrate, salts, and water. *Butter* consists of fat, a little proteid, and water. In the *mouth*, the ptyalin of the saliva changes starch into dextrin and sugar; in the *stomach*, the proteids are changed into proteoses and peptones; in the *small intestine*, the proteids are further changed into proteoses and peptones and afterwards into leucin and tyrosin, starches are converted into maltose, fats are emulsified and saponified.

2. Metabolism is a name given to the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) anabolic, or constructive, and (2) catabolic, or destructive.

3. Too little food decreases both the quantity of milk and the percentage of solids. An ample diet increases both the quantity of milk and the percentage of solids. Abundance of proteids in the food increases the fat in the milk; so also does fat in the food, if it is well digested. Watery food increases the amount of milk, but diminishes the percentage of solids.

4. (*a*) The *ductless* glands are: The spleen, thymus, thyroid, parathyroids, suprarenals, carotid, coccygeal, pituitary, and pineal glands.

The *function of the spleen*.—The following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blood corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.

The *function of the thymus* is not settled; it is said:—(1) to be a blood forming organ; (2) to have influence on growth and nutrition; (3) in hibernating animals it is supposed to store up materials which can be utilized during the period of inactivity.

The *function of the thryroid* is not definitely settled; (1) it has some trophic function; (2) it is supposed to antagonize toxic substances; (3) it produces an internal secretion.

The *function of the suprarenals* is not definitely settled; they produce an internal secretion which is probably necessary to life; it is supposed that they are able to destroy or remove some toxic substance produced elsewhere in the body.

The function of the *other* ductless glands is unknown. They all, or nearly all, furnish an internal secretion.

(*b*) *Removal of the thyroid* causes mental and bodily dullness and apathy, tremors, twitchings, overgrowth of the connective tissues, and development of fat; the hairs fall out, and the patient becomes unwieldy and clumsy in both body and mind. Complete removal causes death in most animals, and it is not considered justifiable in man.

(*c*) Removal of the parathyroid is supposed to cause death; it is believed by some that removal of the thyroid alone does not cause death, but that this is due to loss of the parathyroids only.

6. (*a*) The leucocytes, or white blood cells, are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells.

(*b*) Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine; and (4) they help to maintain the proper proteid content of the blood plasma.

7. (*a*) The action of the heart is controlled by:—the pneumogastric nerves and the sympathetic nerves.

(*b*) The *cardio-inhibitory center* is located in the floor of the fourth ventricle; the *cardio-augmentory center* is located in the medulla.

8. The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) The vibration and closure of the auriculo-ventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall.

The *second* sound is caused by the vibration due to the closure of the semilunar valves.

9. (*b*) The quantity of urine secreted depends upon:—the amount of liquits ingested, the amount of perspiration secreted, the temperature and moisture of the surrounding atmosphere, increase or decrease of blood pressure, and the presence or absence of certain diseases such as diabetes, nephritis, etc.

CHEMISTRY AND HYGIENE.

1. (*a*) The *normal* constituents of the urine are: water; urea; uric acid; hippuric acid; creatinin, extractives; chlorides, phosphates, and sulphates of sodium, potassium, etc.

(*b*) *Abnormal* constituents are:—albumin, sugar, blood, bile, pus, diacetic acid, chyle, mucus, epithelial cells, tube casts, bacteria, parasites.

(*c*) *Test for Sugar*: Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid into two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color. (From Witthaus' *Essentials of Chemistry*.)

Chemical test for *pus* in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

2. (*a*) *Disinfection* may be due *chemically* to oxidation, or to the formation of new compounds, or by changing the reaction of the medium containing the bacteria.

(*b*) *Fermentation* is a chemical transformation of *carbohydrates* as the result of the activity of microorganisms.

(*c*) *Decomposition* or putrefaction is a chemical disintegration of *nitrogenous compounds* as the result of the activity of microorganisms.

3. The acidity or normal urine is due, *chiefly*, to monopotassic and monosodic phosphates; *slightly* to carbonic acid; and *indirectly* to uric acid.

4. The general composition of living matter is: water, 75 to 85 per cent.; solids, 15 to 25 per cent. The most important of the solids are *proteids*, which contain: carbon, hydrogen, oxygen, nitrogen, sulphur, and phosphorus.

5. (*a*) Milk is impure when it contains any foreign substance, or any adulterant, or has been skimmed, or in any way differs from the standard of normal milk.

(*b*) Milk may be adulterated by the addition of water (clean or dirty), by skimming, by the addition of coloring matters or preservatives, and by the addition of solid substances, such as sugar, flour, etc.

(*c*) Diseases that may be spread through the medium of milk are:—typhoid, scarlet-fever, tuberculosis, diphtheria, diarrheal diseases, and Asiatic cholera.

(*d*) The duties of a milk inspector are the investigation of milk as to:—color, odor, taste, reaction, specific gravity, acidity, proportion of fat, total solids, determination of albumin, milk-sugar, ash, percentage of cream, presence of preservatives or other added chemicals, coloring matter, dilution, added solids, pathogenic microorganisms, dirt or other foreign matter. There should also be thorough investigation as to its source, the cows and their environment, the method employed in caring for, milking, storing, and transmitting the milk.

6 (*b*) *Sewer gas* "is but a mixture of a number of gases, such as carbonic acid, carburetted hydrogen, ammonium and hydrogen sulphide, nitrogen, etc., together with a considerable amount of fetid organic matters, the volatile or semi-volatile products of animal and vegetable decomposition, varying according to the condition of the sewer, the kind of matter received therein, the amount of surplus water, etc." (Egbert's *Hygiene and Sanitation*.)

Sewer air is atmospheric air with its oxygen diminished and its carbon dioxide increased from 0.04 per cent to 0.4 per cent., and contaminated with more or less marsh gas, sulphuretted hydrogen, ammonium, sulphide, etc.

7. (*a*) The most *common sources of lead poisoning* are the following: "The contamination of drinking water from lead pipes. Contamination of articles of food or drugs by contact with leaden vessels, or from being enclosed in tinfoil containing an excess of lead. Drinking beer, cider, etc., which has been drawn through leaden pipes or allowed to stand in pewter vessels. The ingestion or constant handling of lead or its compounds, as the acetate,

nitrate, carbonate (white lead—painter's colic), Goulard's extract, etc. The use of hair dyes containing lead." (Witthaus' *Essentials of Chemistry.*)

(*b*) The *symptoms* of chronic lead poisoning are: Wrist drop, severe colic around the umbilicus, constipation, feces clay colored, blue line on the gums at the junction with the teeth.

The *treatment* is first to remove the cause; then administer a purge of jalap and calomel combined with opium; iodide of potassium should also be given to help in the elimination of the lead.

8. Corrosive Sublimate. *Formula*: $HgCl_2$. *Use*: It is an antiseptic. *Antidote*: White of egg, followed by an emetic.

10. (*a*) *Gas* is that form of matter in which the molecules constantly endeavor to get away from each other, and so to occupy a greater space; it has neither definite form nor volume.

(*b*) *Laughing gas* is nitrogen monoxide, N_2O.

(*c*) *Marsh gas* is methane, CH_4.

(*d*) *Sewer gas* is the mixture of gases derived from sewers; and see above, question 6 (*b*).

(*e*) *Diffusion of gases* is the spontaneous and gradual passage of one gas into another gas.

MATERIA MEDICA AND THERAPEUTICS.

1. Thyroid Extract. "*Action*: It is a powerful vasomotor dilator, causing flushing of the cutaneous surface; large doses are apt to produce loss of appetite and diarrhea; it stimulates the cerebrum, and, given to excess, produces headache, restlessness, insomnia, palpitations, hot flushes, sweating, tremors, and even convulsions; it is excreted by the kidneys, and the quantity of urine is uniformly increased by it; it induces a greatly increased oxidation in the system.

"*Uses*: Myxedema; goiter (especially the hyperplastic follicular variety); sporadic cretinism; arteriosclerosis; delayed menstruation." (Wilcox's *Materia Medica.*)

2. *Treatment of Tapeworm.* Give a dose of castor oil at night, and the following morning give half a dram of freshly prepared extract of male fern, and a few hours later give another dose of castor oil.

Treatment of Roundworm. A dose of santonin and calomel should be given at bedtime for a few nights, and a dose of castor oil the morning after the last powder.

Treatment of Seatworm, or *Pinworm.* A large enema of a cold infusion of quassia. Care must be taken to prevent reinfection.

4. Benzoin. *Preparations*: Adeps benzoinatus, tinctura benzoini, tinctura benzoini composita, acidum benzoicum, ammonii benzoas, sodii benzoas, lithii benzoas.

Therapeutic uses:—"Locally, wounds, ulcers, old sinuses, etc.; chilblains; the itching of urticaria or eczema; chapped lips, hands, or nipples; catarrhal affections of the pharynx or larynx. Internally, disordered conditions of the urine (as ammoniacal urine and phosphaturia); vesical calculi; chronic gonorrhea; incontinence due to alkalinity of the urine; chronic Bright's disease; diarrheal diseases; respiratory affections." (Wilcox's *Materia Medica.*)

6. The symptoms of *overdosage of Fowler's solution* are:—Nausea, dryness of throat, gastralgia or diarrhea, irritation of conjunctiva or nasal mucous membrane, and particularly a facial edema under the eyes (more noticeable in the morning).

8. The chemical antidote for poisoning by:—Bichloride of mercury is white of egg; by carbolic acid is sodium sulphate; by strychnine is tannic acid.

The reactions are as follows:—Mercury and white of egg give insoluble albuminate of mercury; carbolic acid and sodium sulphate give insoluble sodium sulphocarbolate; strychnine and tannic acid give insoluble tannate of the alkaloid.

Cocaine is thought by some physicians to be a physiological antidote for opium. Strychnine, and atropine and amyl nitrite have also been quoted as physiological antidotes.

9. An *analgesic* is a remedy which relieves pain either by direct depression of the centers of perception and sensation in the cerebrum, or by impairing the conductivity of the sensory nerve fibers. (Potter.)

10. *Action of gelsemium*:—"When given internally gelsemium acts as a powerful depressant to the respiratory, circulatory, and nervous systems. It acts as a depressant to the heart muscle and vagus nerves, and under its influence there is a diminution in the pulse force and blood pressure. It primarily depresses the sensory side of the spinal cord; but later, if given in large amount, depresses the motor side. The drug has no effect upon the spinal nerves, but the motor cranial nerves are paralyzed by large doses. In moderate amounts it causes the respiration to become slow and feeble, and in lethal quantities paralyzes the respiratory centers." (*U. S. Dispensatory.*)

Indications:—Headache, migraine, asthma, whooping cough, nervous cough, spasmodic dysmenorrhea, torticollis, and other conditions depending upon localized muscular spasm.

SURGERY.

3. (*a*) "Not more than one-third of a grain of cocaine should be used. The solution is best prepared by dissolving sterilized cocaine crystals in cerebrospinal fluid, which is drawn into the syringe containing the cocaine after the introduction of the needle into the subarachnoid space. Eucaine, tropacocaine, and stovain may be employed in a similar manner. The strictest asepsis must be practised. The patient lies on the side or assumes the sitting posture; in either case the back should be bent forward in order to increase the space between the vertebral arches. The operator places one finger upon the spine of the fourth lumbar vertebra, which is on a line drawn between the two iliac crests, and enters the needle just below and to the right of this point, in a slightly upward and inward direction, until cerebrospinal fluid escapes, which in the adult is usually at a depth of two and one-half inches. The barrel of the syringe containing the cocaine is now attached to the needle, and sufficient cerebrospinal fluid withdrawn to effect solution. The fluid is then slowly injected, the needle withdrawn, and the puncture sealed with collodion.

(*b*) "The chief dangers are infection, injury to the cord, and poisoning from the anesthetic employed." (Stewart's *Manual of Surgery.*)

OBSTETRICS AND GYNECOLOGY.

2. (*a*) "The body of the fetus should be pushed a little forward in order to diminish the pressure on the arms at the brim, and the child's body should be rotated until its back is directed toward one or other side of the mother. It should then be pressed well forward against the symphysis in order that an attempt may be made to free the arm which is most posterior. The hand is passed upward into the hollow of the sacrum and the first two fingers along the side of the neck behind the posterior arm as far as the elbow. The latter should then be swept over the face and thorax until it comes to lie within the pelvic cavity. The body of the child is then pressed backward against the perineum, and an attempt made to bring down the anterior arm by a proceeding similar to that employed in the case of the other one. Sometimes it is impossible to get room enough to carry out this latter procedure. In such a case the body of the child should be carefully rotated by both hands placed on the thorax, the back of the child moving across the front of the mother's pelvis. The thorax should be well pushed up when this maneuver is begun in order to diminish the risk of dislocating the neck. By this rotation of the back of the child from one side of the mother's pelvis to the other, the arm which was anterior is made to lie posterior, and then it may be more easily drawn down.

(*b*) "In some cases an arm gets jammed over the back of the head between the occiput and the pelvic wall. In freeing it the fingers should be passed up over the back of the fetus, and the arm carefully pushed around the side of the head to its own side. The elbow may then be drawn down over the face and thorax. Sometimes the arm in such a case may be released from its dorsal position by rotating the body in the opposite direction from that which caused the trouble.

"In all these manipulations on the arms there is danger of dislocating the shoulder joint, of separating the epiphysis at the upper end of the humerus, of fracturing the humerus, clavicle, or spine of the scapula, or of injuring nerves. The traction should, therefore, be made in the bend of the elbow. In cases where this method fails, division of the clavicle may be performed—cleidotomy—to diminish the size of the shoulder girdle.

(*c*) "Sometimes the retraction ring of the uterus may grasp the head tightly; sometimes the cervix may be closely retracted on the neck. This condition greatly endangers the life of the child, and delivery must be rapid. The patient should be deeply anesthetized, and traction made on the shoulders and mouth, or forceps should be applied." (Jewett's *Practice of Obstetrics.*)

8. The following tables (from Dorland's *Obstetrics*) give the main points to be looked for in a *differential diagnosis of extrauterine pregnancy*:

From *cornual pregnancy*:

Extrauterine Pregnancy.	Cornual Pregnancy.
Rupture is most prone to take place at some period during the first three months.	Rupture usually occurs between the third and sixth months.
The tumor exists to one or the other side of the uterus, and is usually distinct.	There may be but one tumor, this being dependent upon the degree of bifurcation.
The tumor is exceedingly sensitive and semi-elastic.	The tumor is not so sensitive, and presents the characteristics of a uterine tumor.
The round ligament may be felt attached to the uterus on the inner or uterine side of the gestation sac.	The round ligament is displaced outward and is attached to the external side of the gestation sac.
Examination of the removed specimen shows an absence of true decidual tissue.	True decidual tissue will be found surrounding the fetal membranes.
In interstitial pregnancy the gestation sac communicates with the uterine cavity by the orifice of the Fallopian tube.	The two halves of the uterus are united by a muscular band.

From *pyosalpinx*:

Extrauterine Pregnancy.	Pyosalpinx with Indistinct History of Pregnancy.
The uterus is enlarged, with a soft cervix and the peculiar softening of the body that is present in pregnancy.	The uterus is probably not enlarged, the cervix is not soft, and there is not the elastic feel that is present in pregnancy.
There is a history of sterility, with the signs of endometritis or salpingitis.	There is a history of acute attacks of peritonitis occurring at intervals after an attack of gonnorhea.
The tumor is small, exceedingly sensitive, but, as a rule, not firmly bound down in the pelvic cavity.	The tumor is large, moderately sensitive, firmly bound down in the pelvis, and surrounded by a mass of exuded lymph.
Rupture is likely to occur at some time during the first three months.	The history may have covered a period of months without the symptoms of rupture.
The usual clinical manifestations of pregnancy will be present.	The clinical manifestations of pregnancy are absent or very indistinct.

From *intrauterine pregnancy with fibroid tumor*:

Extrauterine Pregnancy (Tubal Variety).	Intrauterine Pregnancy Complicated with Fibroid Tumor.
There is discovered to one side of the uterus a mass, rounded, exceedingly sensitive, and elastic or semi-fluctuating.	The mass may be rounded; more often it is nodulated, very hard, non-elastic, and non-fluctuating, and not sensitive to the touch.
The uterus is enlarged, but not to a size proportionate to the period of gestation.	The size of the uterus corresponds to, or is even in excess of, the time of gestation.
The menstrual history is irregular, and there may be an early return of the show.	Menstruation is likely to be suppressed.
Rupture occurs at the usual time.	No signs of rupture follow.
Pain is an early and prominent symptom.	Pain develops only after the tumor has reached sufficient size to press upon the surrounding structures.

From *lateral flexion of a pregnant uterus*:

Extrauterine Pregnancy	Intrauterine Pregnancy with Lateral Flexion of the Uterus.
The body and cervix of the enlarged uterus are generally in a straight vertical line.	The fundus lies to one side of the pelvis, with the cervix carried to the opposite side.
The extrauterine gestation sac is in close proximity to the body of the uterus.	A deep sulcus may be felt between the fundus and the cervix.
Anesthetization reveals the mass closely attached to the fundus and readily outlined.	Anesthetization reveals a normal condition of the appendage.
The size of the uterus is much below that indicated by the duration of the pregnancy.	The size of the uterus corresponds to the period of the gestation.
The menstrual history is irregular.	Menstruation is suppressed.
There is a history of severe abdominal pain and rectal tenesmus.	Usually there is no pain other than a backache; there is no rectal tenesmus.

10. (*a*) *The uterine sound is contraindicated in*:—(1) The least suspicion of even the possibility of pregnancy; (2) menstruation; (3) acute endometritis; (4) malignant disease of the uterus or vagina; (5) acute pelvic inflammation.

(*b*) *The uterine curette is indicated in*:—(1) Retained secundines; (2) in some cases of puerperal sepsis; (3) in endometritis; (4) in some cases of carcinoma when hysterectomy is contraindicated; (5) for diagnostic purposes.

PRACTICE, PATHOLOGY, AND DIAGNOSIS.

1. By *ptomain poisoning* is meant poisoning by means of ptomains through the medium of the gastrointestinal canal.

The *chief poisonous ptomains* are:—Tyrotoxicon, mytilotoxin, cholin, neurin, neuridin, putrescin, cadaverin, gadinin, muscarin, tetanin, typhotoxin.

The *general symptoms of ptomain poisoning* are:— Onset in less than twenty-four hours after the ingestion of the noxious "food," chilliness, vertigo, headache, thirst, abdominal pains, nausea, vomiting, diarrhea, cyanosis, rapid pulse, cutaneous eruption sometimes, subnormal temperature at times, convulsions.

2. ARTERIOSCLEROSIS. *Etiology*: Syphilis, alcoholism, gout, Bright's disease, overeating, and excessive muscular exertion. It is most liable to occur in old age.

Possible sequels are:—Thrombosis or cerebral hemorrhage, gangrene of the extremities, interstitial nephritis, angina pectoris, aneurysm, cardiac hypertrophy.

4. (*a*) *Direct vomiting* may be caused by:—Apomorphine, alcohol, inhalation of chloroform, uremia, the infectious and septic diseases, anemia, diabetes, Addison's disease, nephritis.

(*b*) *Reflex vomiting* may be caused by:—Tumor or abscess of the brain; cerebral hemorrhage, thrombosis, or embolism; meningitis; concussion or compression of the brain; emotional or hysterical causes; pregnancy; irritation of the fauces; worms; uterine, tubal, or ovarian disease.

5. *The symptoms and sequelæ of a non-compensating heart* are:—Dyspnea, hemoptysis, cough, chronic bronchial catarrh; congestion of the stomach, intestines, and liver; dyspepsia, gastritis, enlarged spleen, ascites; cyanosis; dropsy; scanty and albuminuous urine, with casts; clubbed fingers; vertigo, headache, or syncope.

6.

Eczema.	Psoriasis.
1. Polymorphous in character.	1. Uniform in character.
2. Generally found on the flexor surfaces.	2. Generally found on the extensor surfaces.
3. The patches are not sharply defined, but gradually merge into the surrounding healthy skin.	3. The patches are sharply defined.
4. Decided serous exudation.	4. Dry scales.
5. Marked itching and burning.	5. No marked itching and burning.
6. Healing begins at the periphery.	6. Healing begins in the center.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	
Arizona*	Ancil Martin, Phoenix	Phoenix	April 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April 7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March 10
Delaware	J. H. Wilson, Dover	Dover	June 16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	April 7
Florida*	J. D. Fernandez, Jacksonville	Ocala	April 13
Georgia	E. R. Anthony, Griffin	Atlanta	May —
Idaho	J. L. Conant, Jr., Genessee	Boise	April 7
Illinois	J. A. Egan, Springfield	Chicago	April —
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May 26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March —
Kansas	T. E. Raines, Concordia	Topeka	Feb. 11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April 28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May 21
Maine	Wm. J. Maybury, Saco	Portland	March 17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June 9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April 7
Mississippi	J. F. Hunter, Jackson	Jackson	May 12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City... / St. Louis...	April
Montana*	Wm. C. Riddell, Helena	Helena	April 7
Nebraska	E. J. C. Sward, Oakland	Lincoln	Feb. 5
Nevada	S. L. Lee, Carson City	Carson City	Feb. 3
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	
New Jersey	J. W. Bennett, Long Branch	Trenton	June 16
New Mexico	B. D. Black, Las Vegas	Santa Fe	June 1
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Feb. 4
N. Carolina*	G. T. Sikes. Grissom	Winston, Salem	May —
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April 7
Ohio	Geo. H. Matson, Columbus	Columbus	June 9
Oklahoma*	J. W. Baker, Enid	Guthrie	
Oregon	B. E. Miller, Portland	Portland	
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia... / Pittsburg	June —
Rhode Island	G. T. Swartz, Providence	Providence	April 2
S. Carolina	W. M. Lester, Columbia	Columbia	June 9
S. Dakota	H. E. McNutt, Aberdeen	Mitchell	July 8
Tennessee*	T. J. Happel, Trenton	Memphis... / Nashville... / Knoxville...	May —
Texas	G. B. Foscue, Waco	Waco	June 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April 6
Vermont	W. Scott Nay, Underhill	Burlington	July 14
Virginia	R. S. Martin, Stuart	Richmond	June 24
Washington*	C. W. Sharples, Seattle	Spokane	July 7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	April 14
Wisconsin	J. V. Stevens, Jefferson	Madison	July 14
Wyoming	S. B. Miller, Laramie	Laramie	Feb. 12

* No Reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

New York and Vermont.—The State Board of Regents of New York has approved the establishment of medical reciprocity between these two States.

Illinois now reciprocates—in the case of physicians' licenses issued after examination—with the following States: Iowa, Kansas, Maine, Maryland, Michigan, Nebraska, New Jersey, North Dakota (after July 1, 1905, only), Ohio, South Carolina, Tennessee, Utah, Vermont, West Virginia, Wisconsin, and Wyoming. Illinois subjects all applicants for a State certificate to practice medicine in Illinois to an examination, in accordance with the provisions of the medical law of the State; but allows, in the examination, a credit of one per cent. on the required average of seventy-five per cent. for each year of reputable practice since graduation, up to a total allowance of thirty per cent.

Virginia reciprocates, under certain conditions, with Delaware, Georgia, Indiana, Kentucky, Maryland, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, South Carolina, Texas, Wisconsin, and West Virginia.

Delaware.—The standard of preliminary requirements has been raised, and a four years' course of seven months each is now demanded of candidates for the licensing examination.

Indiana.—At a meeting of the Indiana State Board of Medical Examiners held July 9, 1907, a resolution was adopted that hereafter students completing the work of the freshman and sophomore years of a reputable medical college may take the examination in anatomy, including histology and embryology, physiology, chemistry, pathology, bacteriology, and such other required subjects as are taught in the freshman and sophomore years of a reputable medical college, at the end of the sophomore year.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 11, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	432	171
Diphtheria	370	42
Measles	691	35
Scarlet Fever	562	49
Smallpox	2	..
Varicella	199	..
Typhoid Fever	55	6
Whooping Cough	24	1
Cerebrospinal Meningitis	16	11
Malarial Fever	..	..
Totals	2351	315

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending January 10, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Berkley	Dec. 14–21	1	..
District of Columbia, Washington	Dec. 14–28	2	..
Illinois, Springfield	Dec. 19–20	8	..
Indiana, Elkhart	Dec. 21–28	3	..
Kansas, Galena	Dec. 21–28	17	..
Louisiana, New Orleans	Dec. 21–28	2	..
Minnesota, Winona	Dec. 21–28	5	..
Missouri, St. Louis	Dec. 21–28	7	..
New York, New York	Dec. 21–28	2	..
South Dakota, Sioux Falls	Dec. 21–28	1	..
Tennessee, Knoxville	Dec. 21–28	1	..
Nashville	Dec. 21–28	13	..
Washington, Spokane	Dec. 14–21	2	1

SMALLPOX—FOREIGN.

Argentina, Rosario	Oct. 1–31	..	1
Brazil, Para	Dec. 14–21	16	11
Rio de Janeiro	Nov 24 Dec. 8	31	14
Canada, Winnipeg	Dec. 21–28	1	..
Cape Colony, Cape Town	Nov. 10–23	1	..
China, Hongkong	Oct. 26–Nov. 10	1	1
France, Paris	Dec. 7–14	9	..
India, Bombay	Dec. 3–10	..	2
Madras	Nov. 8–Dec. 6	..	2
Italy, General	Dec. 5–12	143	..
Japan, Kobe	Nov. 23–Dec. 7	66	20
Yokahama	Nov. 2–9	1	..
Java, Batavia	Nov. 8–23	3	..
Malta	Dec. 5–12	1	..
Mexico, Aguas Calientes	Dec. 13–29	..	6
Mexico City	Nov. 16–30	..	2
Peru, Lima	Dec. 4	32	..
Portugal, Lisbon	Dec. 17–21	7	..
Russia, Moscow	Nov. 30–Dec. 14	10	3
Odessa	Nov. 30–Dec. 7	2	..
Riga	Nov. 30–Dec. 14	5	..
St. Petersburg	Nov. 30–Dec. 7	..	30
Spain, Valencia	Dec. 8–15	36	3
Turkey, Constantinople	Nov. 24–Dec. 15	..	5
Venezuela, Caracas	Dec. 30	..	Present

YELLOW FEVER.

Brazil, Manaos	Nov. 23–Dec. 14	..	9
Para	Dec. 7–21	23	14
Cuba, Cienfuegos	January 4	..	1
Santa Clara	Jan. 6	1	..
Guatemala, Chiquimula	Dec.	..	Present
Zacapa	Dec.	..	Present
West Indies, Trinidad	Jan. 6	..	1

CHOLERA.

China, Hongkong	Oct. 28–Nov. 16	3	7
India, Bombay	Dec. 3–10	..	1
Madras	Nov. 16–Dec. 6	..	11
Japan, Kobe	Nov. 23–Dec. 7	7	3
Yokahama	Nov. 2–9	4	3
Russia, General	Nov. 13–19	202	115
Kief	Nov. 24–Dec. 7	24	4

PLAGUE.

Brazil, Rio de Janeiro	Nov. 4–Dec. 8	17	5
China, Hongkong	Oct. 26–Nov. 16	3	3
Egypt, Alexandria	Nov. 28–Dec. 8	3	1
Provinces—Dakahlih	Dec. 4–11	1	1
Garbieh	Dec. 4–5	3	2
India, Bombay	Dec. 4–10	..	8
Rangoon	Nov. 8–24	..	12
Japan, Osaka	Nov. 23–30	70	62
Peru, Lima	Nov. 20–Dec. 4	4	2
Cheaica	Nov. 20–Dec. 4	1	..
Matucana	Nov. 20–Dec. 4	2	..
Truiillo	Nov. 20–Dec. 4	0	6
Paita	Nov. 20–Dec. 4	10	7
Piura	Nov. 20–Dec. 4	4	2
Straits Settlements, Singapore	Nov 8–16		2

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Original Articles.

UPON WHAT DOES THE CURE OF TUBERCULOSIS DEPEND?*

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WHEN we review the overwhelming evidence which establishes the cure of tuberculosis beyond question, it is difficult to explain how the healed lesions escaped the notice of men who were such keen observers of other diseases; yet such is the fact. It is now only fifty years since Brehmer, the first great teacher of the curability of this disease, began his work. He was laughed at and considered insane by his confrères for maintaining that tuberculosis is curable. While he did not live long enough to see its curability universally accepted, yet he was able, before his death, to see sufficient scientific data collected to convince the most skeptical.

These proofs come from two sources: first, from the post-mortem room, and, second, from clinical experience.

There is a German saying to the effect that all men have a little tuberculosis some time in their lives. This is not far from the truth. With the multitudinous opportunities for infection to which we are exposed from early life to old age, it is probable that some time in our lives more bacilli gain entrance into the bodies of nearly all of us than our defensive forces are able to destroy. Consequently an infection occurs. This infection may occur in the lymph glands, or the bacilli may settle permanently in the tissue of some organ either at the point of entrance or after being carried by the blood or lymph stream to some point distant from the port of entry. Although the defensive forces of the body may be such as to be unable to cope with the invading microorganisms at the time of their entrance into the body, yet they may be so augmented by the stimulation resulting from the toxic action of these microorganisms that the disease may be soon overcome and healing result; or, if healing does not result, the focus may become quiescent and remain in a state of inactivity for a longer or shorter time.

That such is the case is proven by the records of all pathological institutes. Tuberculous foci are found in the lungs in from thirty to fifty per cent. of adult persons dying from disease other than tuberculosis. When we remember the frequency of infection of the lymphatic glands, as well as organs other than the lungs, then we can believe it is conservative to say that at least 80 per cent. of the people some time in their lives are infected with tuberculosis, and we can well understand how Schlenker found tuberculous foci in 66 per cent. of 100 post mortems, on persons of all ages, and Burkhardt in 91 per cent. of 1,262 adults, and Naegeli in 97.5 per cent. of 500 cases.

Although tuberculous infection is so common that perhaps 80 persons out of every 100 are infected during their lives, yet only about 11 out of 100 die of the disease. This means that only one dies of the disease, where seven either recover from it or hold it in check so that it does not become active. In the face of these facts we are forced to the conclusion that tuberculosis is not necessarily the deadly disease that we have considered it; in fact, it is cured oftener than it destroys the patient.

There is also ample proof of the curability of this disease from clinical reports. The curability mentioned above, as a rule, has reference to foci so small that they cause few and in many cases no recognizable symptoms; but we still have greater proof. We have proof from the clinician of the healing of a large percentage of cases of tuberculosis when the disease has extended so far as to cause pronounced symptoms, and even of the healing of a fairly large percentage when it has caused very pronounced and in some instances even threatening symptoms.

Where tuberculosis is diagnosed early and treated intelligently, from 65 to 95 per cent. of patients are being apparently cured. And even in the later stages, with cavity formation and serious symptoms, a small percentage can be apparently cured, a great many can secure an arrestment of the disease, and the lives of nearly all can be prolonged. The results obtained by phthisiotherapists the world over, and especially in sanatoria, confirm this statement.

Admitting the above data as correct, the curability of tuberculosis must be accepted as established. It now remains for us to inquire upon what this curability depends. This inquiry will carry us into the discussion of questions of both a theoretical and practical nature; but, inasmuch as an understanding of the theory upon which healing takes place will help in the clinical management of the disease, I believe such an inquiry to be of great importance.

From the bacteriological and physiological standpoints, the important factors in the cure of tuberculosis are the virulence and numbers of the infecting microorganisms and that very important but little understood element known as resisting power.

It is generally known that different strains of the same species of microorganism differ greatly in their virulence. The number of the infecting microorganisms also varies. It is also known that the animal organism is endowed with certain powers which enable it to protect itself from infection. This power, like the virulence and numbers of the microorganisms, varies. Hence, whether or not an infection shall occur, depends upon these variable factors. A few very virulent bacilli might cause an infection in an individual with low resisting power, while many virulent bacilli would undoubtedly over-

*Read before the City and County Society of Portland, Ore., October 16, 1907.

come one with high resisting power. On the other hand, many feebly virulent bacilli would likely be able to infect an individual with low resisting power, although they would be withstood by one with high resisting power.

Not only does this relationship between the virulence or numbers of bacilli, on the one hand, and the resisting power of the patient on the other, determine whether or not infection will occur, but it also determines whether or not a cure will be brought about after an infection has once taken place. In fact, the specific aim in therapy in tuberculosis, as in all infectious diseases, is to raise the resisting power of the individual, so that his body cells may respond to the production of a maximum amount of protective bodies, and thus destroy the invading microorganisms or render the tissues so uncongenial that their virulence will decrease.

The practical importance of this is evident from certain pathological and experimental studies. Pathologically, tubercle bacilli produce several different processes, such as congestion, fibrosis, necrosis, and calcification. As far as the prognosis of the disease is concerned, however, we may say that they stimulate to the production of new tissue and to the destruction of tissue. It has been found that, whether fibrosis or necrosis shall occur, depends upon the toxicity of the bacilli. Where the toxicity of the bacilli is low there is a tendency to the formation of fibroid tissue, and where it is high necrosis predominates. Therefore, it is easy to see how this factor determines whether the case will be an acute one with rapid necrosis and fatal issue, or a chronic one with fibroid tissue predominating.

The important experiments of Störk (*Wiener medizinische Wochenschrift*, July, 1907) upon guinea-pigs bear upon this important subject. By reducing the virulence of bacilli used in inoculating, he has been able to produce a fibroid condition in 100 per cent. of pigs. It has also been shown that dead bacilli have more tendency to stimulate the cells to the formation of fibroid tissue than live bacilli. Therefore, in treatment, measures which lower toxicity tend to healing, and those which increase it favor necrosis.

In accordance with these facts we may assume that in those cases where the individual fails to become infected, although he has taken bacilli into his system (and this doubtless happens very often) the bacilli were either of low virulence or few in numbers, or the resisting power of the patient was high.

In those cases where an infection occurs, but heals out, we must assume that for the time being the virulence of the bacilli or their numbers were too great for the protective forces of the body; but, through some stimulation, the protective forces of the body were increased to such a point that the infectious agents were overcome.

There is a third class of cases in which infection occurs, but the focus, while not healing out, remains quiescent, perhaps with no tendency to extend; or, it may be, with a tendency now and then to extend to new tissue. To this last class belong those cases of tuberculosis which apply to the physician for treatment. We must believe in the former class that there is little difference between the virulence or numbers of bacilli and the protective power of the blood; hence, the infection is not able to extend, but on the other hand the protective forces of the body cannot completely exterminate it. In the latter class the balance is in favor of the bacilli, hence the disease extends.

The tendency to extend is one of the characteristics of tuberculosis as we know it clinically, and the principal reason why the disease is so fatal. This tendency manifests itself wherever the resisting power of the patient is less than the aggressive force of the bacilli. The disease spreads either through the blood, through the excretory channels, or through the lymphatics, the latter being a very common way in which bacilli escape and form new foci in adjacent tissue. It must be perfectly evident then that the larger the focus the greater the opportunity for the escape of bacilli and the greater the danger of the disease spreading.

Modern studies in immunity show that the cure of all infectious diseases depends upon there being present in the organism a relatively high resisting power. They have also shown that protective substances are naturally present in the animal organism, and that when an infection occurs the protective substances in the blood are used up in destroying the invading microorganisms. On the other hand, when the invading microorganisms are destroyed, toxins are set free and thrown into the circulating fluids, where they stimulate the body cells to the formation of specific protective substances, which are again directed against the invaders. Thus the battle continues, the balance being now on the side of the invaders and then on the side of the organism, until one or the other gains the mastery. If healing occurs, it comes because the resisting power of the individual is relatively greater than the attacking force of the germs.

It is now plain that, if the opportunity for bacilli to spread increases with the size of the focus of infection, and, if the protective bodies of the blood are used up in the destruction of the invading bacilli, the larger the foci of infection the greater the opportunity for the escape of bacilli and the greater the demand upon the protective antibodies and the greater the likelihood of their being unable to prevent the extension of the disease.

This offers us the reason for early tuberculosis with a small, limited focus, being so much easier cured than advanced tuberculosis. It also shows us that Nature's method of overcoming the infection is to increase the antibodies of the blood. Thus it gives us the basis of therapy.

If we now turn to the practical side of our subject we will see that the foregoing discussion clears the horizon of much that has befogged the subject of cure in tuberculosis and shows us why tuberculosis is curable, how it is curable, and when it is curable. It shows in what manner the cure depends upon early diagnosis, and suggests the lines of our therapeutic endeavor.

In discussing the practical side of the cure of tuberculosis, the most important point is early diagnosis. Early diagnosis offers the opportunity for treating the patient when the lesion is small, when there is the least opportunity for its spreading to new tissue, and before the constitution of the patient has been seriously weakened.

Early tuberculosis (I mean by this term tuberculosis as we know it clinically) is a disease which will yield in nearly all instances to rational treatment; likewise one which will go on to an advanced condition and cause the death of the patient in nearly all instances where it is treated improperly.

Advanced tuberculosis is not a simple disease, but a complex condition resulting from a disease. As tuberculosis extends there is a destruction of tissue, either necrosis or fibrosis, or both, occurring. Toxins are poured out into the blood stream which

influence every function of the body. The entire organism suffers. While this condition is curable in many instances, it is only cured with great difficulty after an expenditure of great patience and perseverance on the part of both patient and physician, and after the expenditure of much money and time. This condition should not be spoken of as hopeless, for it is far from it; but yet the proportion of cures is quite small when compared with early cases. The difference in results are so great, and the time required to obtain them so much longer, that even when we consider the hopefulness which is attached to advanced tuberculosis when treated by modern, rational methods, we still must urge the fact that our greatest hope comes through early treatment.

Early diagnosis is not sufficient. This means very little to the patient unless it be followed by appropriate treatment. Aside from the fact that early diagnosis offers the opportunity for instituting prophylactic measures in communicable diseases, it is of no value to the patient unless it affords opportunity for the application of remedial measures.

It is now evident that the changes which occur in the organism in tuberculosis are due to the action of both the bacilli and their toxins; hence the cure of the disease must come about by combating these. No matter what remedies or measures are adopted in treatment, their purpose must be to increase the resisting power of the patient toward the tubercle bacilli and their toxins; in other words, to stimulate the cells of the body so that they produce more specific antibodies.

Fresh air is used in the treatment of tuberculosis, not because it has a specific action on this disease, but because living in the fresh air gives one better nerve tone, improves the appetite, aids assimilation, and makes one hardier than those who live indoors. It has this same effect on well people or those suffering from any other illness that it has on the tuberculous. There has been a tendency on the part of many physicians, as well as the laity in general, to believe that the open air is a cure for tuberculosis, that is, that it has a specific action. It is true that we often see patients who will pick up at once when put into the fresh air, and many of these will overcome their disease with little more than this, assisted by good food. We would expect this in such cases as are mentioned above, when the balance between the numbers and virulence of the bacilli and the resisting power of the patient is very small. By putting the patient in the open air his general resisting power is raised, his cells respond better to the formation of antibodies, and his infection is overcome. When this balance is larger, however, when the virulence or number of bacilli is great and the resisting power of the patient is low, then we could not expect a cure from this, even although the resisting power of the patient might be raised to normal.

The action of feeding in tuberculosis is not even as well understood as the use of fresh air. Many of our best known teachers have taught that the greatest desideratum in tuberculosis is to make the patient fat. Acting upon this principle, there is almost no limit to the lengths to which some have gone. We hear of tuberculous patients drinking two and three quarts of milk a day, eating from one to two dozen raw eggs, and besides eating from one to two meals of solid food, and the strange part of this, the almost incredible part of it, is that such diets have been ordered by members of our own profession! Personally, I must plead guilty to having, in my earlier experience, favored forced feeding, but I am glad that I saw my mistake early. I never went to the limit that many have, but I have at times urged more food upon my patients than was good for them.

What can be accomplished by forcing a tuberculous patient to eat two and three times as much as is required by a person in health? In the first place, the chief aim in feeding should be, not the most fat, but the highest state of nutrition. This can only be produced by a selected dietary suited to the digestive, assimilative, and excretory powers of the patient. In tuberculosis all of these functions are impaired, and under these circumstances, let me ask, is it wise or even good common sense to stuff the patient with an amount of food only limited by the ability of the patient to swallow? Such a course cannot help lowering rather than raising nutrition. The answer that is made when this procedure is criticised is that it has produced good results. We must grant that patients will put on weight in this way. Oftentimes they gain enormously, but that is not saying that such a course is best for them. Fat, quickly put on by forced feeding, is readily lost. The patient is not strong; he is not nourished; his tissues are not resistant; at the least provocation he loses much that he has gained. On the other hand, the use of enormous quantities of food overtaxes the digestive and eliminative system, and the patient sooner or later suffers more or less discomfort and finds that his recuperative powers are severely hampered.

We must not lay too much stress upon gaining of weight in tuberculosis. Gaining of weight at any cost is not desirable. Our only aim should be the highest state of nutrition, so that the body cells will respond to the stimulation of the toxins to the production of the greatest number of antitoxins possible.

Thus we can see that fresh air, proper nourishment, regulation of rest and exercise, hydrotherapy, and other tonic measures, are all directed toward one end, that of making the patient resistant. It must not be expected that such measures can make a man infected with tuberculosis more resistant than one who is not. They simply raise his resisting power to the highest point that is consistent with the disease process present.

There is also another element in the natural cure of tuberculosis that is not generally recognized, and that is the escape of toxins from the tubercle bacillus into the circulating media of the body. These stimulate the cells to the formation of protective antibodies, which in turn combat the infection. The manner in which the body cells respond to this stimulation must depend upon the general nutrition of the patient. It is but common sense to expect that well-nourished cells will respond better than poorly-nourished ones.

We might call the cure of tuberculosis in this manner Nature's cure, for it consists in combating the disease by raising the patient's resisting power to a point as near the normal as is possible for him while suffering from the infection, and thus enabling his body cells to respond to the stimulation produced by the toxins which circulate in his body fluids.

One unfortunate thing about the toxins which are thus eliminated is that they are eliminated irregularly, both as to dosage and as to time; consequently the stimulation is not to be relied upon.

Much experimentation has been carried on which has resulted in proving that toxins made from the tubercle bacillis can be introduced artificially, with dosage carefully regulated as to amount and spaced

as to time, which will result in artificially stimulating the body cells to the production of antibodies. Wright has demonstrated an increase of antibodies after inoculation with tubercle bacillus vaccines which amounted to three times that produced by a healthy individual. In fact, when these vaccines are used properly, there is an increase of all those elements which we recognize as accompanying immunity, such as opsonins, agglutinins, and precipitins; there is an increased leucocytosis and an increase in the alkalinity of the blood.

Clinical results also bear out the idea of these vaccines being able to increase the production of protective substances, for many more cases are cured where they are used intelligently than where they are not used. Many clinicians have put them to a very severe test. Where patients were not doing well under ordinary open-air, dietetic measures, they tried the vaccines with a result in many instances of marked benefit.

We can readily see the rationale of this. If the cure of tuberculosis depends upon the production of antibodies in the blood, as we believe it does, then we can see that the more of these antibodies the greater the chances of cure. We can understand how such measures as fresh air, good food, and other tonic procedures are able to cure mild infections where the disease is not too extensive and there are not too many bacilli attempting to escape and form new foci in healthy tissue, and where the infection is not due to bacilli of too great virulence; but we can also understand what a great advantage is afforded these same patients by artificially raising their power to produce protective antibodies by inoculating them with tubercle bacillus vaccines. And we further believe that, in order to cure many of the advanced cases, and especially those where the virulence of the bacilli is great, such inoculations are absolutely necessary.

Such facts are borne out by clinical experience, for when these inoculations are added to the ordinary hygienic, dietetic methods, the disease shows less tendency to spread, the patients develop fewer tuberculous complications, and a greater percentage of cases are cured than where the hygienic, dietetic measures are used alone.

We have now discussed Nature's method of cure, and we have endeavored to show how it can be furthered by proper treatment. In the last analysis, however, the clinical cure of tuberculosis depends upon the intelligent manner in which the disease is managed by the physician in charge and the cooperative response upon the part of the patient. To make an early diagnosis is of no avail to the cure of the disease unless proper measures are at once instituted. It should always be remembered that tuberculosis is a disease fairly easily cured in its incipiency, but cured with great difficulty when allowed to extend, and whether or not it shall be treated in its early stage depends upon the alertness of the members of the medical profession.

Pyometra and Cancer of the Cervix.—Begouin tells us that for the production of a pyometra all that is necessary is a purulent discharge from the endometrium and a stenosis of the cervical canal. This may occur in metritis combined with senile atrophy. It may rarely occur in metritis with cicatricial stenosis of the os, or more commonly in metritis with cancer of the os, the opening being closed by a cancerous vegetation. This is a somewhat rare complication of cancer of the cervix, and is generally diagnosed at the operation instead of before it.

THE DEATH RATE OF THE CITY OF NEW YORK AS AFFECTED BY THE COSMOPOLITAN CHARACTER OF ITS POPULATION.*

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THE above title suggested itself to the writer by reason of the "marking-time" of the death rate of the city for the past few years in its progress toward an expected lower level, and in the seeking of the causes of the halt in a hitherto uninterrupted decrease, the question as to the part played by the influx into the community of the immense number of immigrants from Continental Europe arose, and therefore this paper.

In a community of four and one-quarter millions of people (a fair estimate of the population of New York City) it is reasonable to suppose that the presence of one and three-quarter millions of "foreign-borners" would appreciably affect the death-rate of the community, especially when we consider that the language, customs, habits, and environments of fully eighty per cent. are so dissimilar in all respects to the requisites established by the authorities for the making of a sanitary member of the body politic. During the fiscal year ending June 30, 1907, the number of aliens arriving at the port of New York was 1,004,000, and of the immense number only 50,000 were credited to Great Britain and Ireland. Well might the student of political, social, and hygienic economy ponder over the question of the assimilative capacity of the country at large and the urban communities particularly!

The crude death-rate as ordinarily used in comparisons of cities and countries is, as you all know, a much-abused weapon of offense and defense, but in comparison of a city's hygienic progress or retrogression with its past it may be depended upon, provided no great change has taken place in the age-grouping, sexual, or occupational conditions. An application of standard death-rates at a series of age-groups to the population of this city as ascertained by the censuses of 1875 and of 1900 was made, and the resulting difference did not exceed one-tenth of one point per thousand in the crude death-rate; therefore, it is allowable to use the death-rate of this city as an index of the prevailing sanitary conditions, and an analysis of the factors affecting its increase or decrease may be indulged in.

In analyzing the tables set forth later on we must not at any time forget that all conclusions drawn are of necessity partly tentative, by the reason of the great stumbling block in the shape of an entire absence of age-grouping among the different nationalities and races comprising the population of the city. Its presence is almost a *sine qua non*, and the means taken to make a substitute therefor consisted in the preparation of a table of deaths and rates from certain causes and in certain districts, the causes being such that affected chiefly certain age-groups, and the districts such as were typical of certain nationalities, races, and age-constitution, thus enabling tolerably fair conclusions to be arrived at.

In Table No. 1 are shown the deaths and death-rates per 100,000 from all causes and from certain prominent causes by nativity of decedents in the old City of New York (present Boroughs of Manhattan

*Read at the annual meeting of the American Public Health Association, October, 1907.

TABLE 1.

DEATHS AND DEATH RATES PER 100,000 ACCORDING TO NATIVITY OF DECEASED IN OLD CITY OF NEW YORK, YEAR 1906.

Nativity of Deceased	Population	All Causes		Typhoid Fever		Pulmonary Tuber'losis		Cancers		Heart Diseases		Broncho-Pneumonia		Lobar Pneumonia		Chronic Bright's	
		D'ths	Rates	D'ths	Rates	D'ths	Rates	D'ths	Rates	D'ths	Rates	D'ths	Rates	D'ths	Rates	D'ths	Rates
United States	1,551,854	28,067	1,849	208	13.7	3,156	207.9	563	37.1	1,320	86.9	2,875	189.4	1,750	115.3	1,205	79.4
Ireland	198,028	5,795	2,926	41	20.7	944	476.7	330	166.6	755	381.2	145	73.2	572	288.8	812	410.0
Germany	231,050	3,966	1,717	22	9.5	434	187.8	351	151.9	535	231.5	99	43.2	294	127.2	491	212.5
Italy	104,954	1,906	1,816	32	30.4	290	276.3	69	65.7	169	161.0	113	107.7	232	221.1	113	107.7
Rus. Poland	134,714	1,824	1,354	8	6.7	224	172.4	172	132.9	222	170.0	43	34.2	108	83.9	155	121.0
England	40,283	852	1,729	8	16.2	112	227.2	69	140.0	102	207.0	18	36.5	70	142.0	99	209.0
Aust.-Hungary	73,920	1,227	1,660	21	28.4	246	332.8	112	151.5	141	190.7	24	32.5	80	108.2	97	131.2
Scotland	14,602	276	1,890	2	13.7	52	356.2	22	150.7	31	212.3	11	75.3	29	198.5	33	226.0
British America	15,550	239	1,537	2	12.9	30	192.9	24	154.3	27	173.6	5	32.2	23	147.9	36	231.5
Switzerland	6,382	157	2,460	1	15.7	36	564.2	12	188.0	19	297.7	7	109.7	9	141.0	13	203.7
France	10,952	256	2,337	5	45.7	34	310.4	18	164.3	37	337.8	8	73.0	23	210.0	26	237.4
Bohemia	10,951	204	1,863	2	18.3	48	438.2	27	246.0	26	237.4	3	27.4	10	91.3	28	255.7
Sweden	20,077	225	1,121	4	19.9	47	234.1	17	84.7	14	69.7	2	9.96	18	89.7	20	99.6
Total	2,464,432	46,108	1,811	369	14.9	5,900	230.4	1,856	75 3	3,506	142.3	3,379	137.1	3,303	134.0	3,232	131 2

and the Bronx) for the year 1906. At first glance at the general death rate column it would seem, if we compare the rate of 1849 per 100,000 of decedents born in the United States with that of 1871 of the entire city for all nativities, that there is very little effect produced on the rate by the mortality among the foreign element, but it must be borne in mind that of 28,067 deaths of natives only 10,080 had American fathers and mothers as parents, the latter figures giving a rate of about 1.440 per 100,000, whilst the rate of 18,067 natives born of foreign parents would be equal to a rate of 2,256 per 100,000; this low mortality of 1,440 per 100,000 among the native Americans and immediate descendants of foreigners would be accepted and conclusions drawn therefrom provided assurance could be given that the age-periods of these two groupings of the population were approximately similar; but that is not the case, as the greater fecundity of the alien produces an undue proportion of children in grouping under five years of age as compared with the native and consequently higher general death-rate results. The difference between the two rates is so great that unequal age constitution does not account for all of the increase; density of population, sanitary surroundings, personal habits and cleanliness, poverty, etc., play a most important part in increasing the mortality among the descendants of aliens.

The general death-rate of each country specified in the table is instructive, though in the comparison of one with the other it is open to the same objection of absence of specific figures as to age-constitution; the Irish lead with a rate of 2,926 and the Swedes apparently are the healthiest with the low rate of 1,121; the high rate among the former being *partly* explainable by the fact that between the years 1847-1893, a period of forty-six years, the influx from Ireland was immense and constant, whilst for the past fourteen years the numbers have been small in comparison, thus producing an Irish population in this city whose age distribution, especially at ages 50 and upwards (assuming the average age of each immigrant to be twenty-five years) is favorable to an exceedingly high death-rate, and the low death among the Swedes being partly explainable by the fact that immigration from Sweden began comparatively at a recent date—1885—and as a result a preponderance of adults is attained at ages between twenty-five and fifty, at which ages the death-rate ranges between ten and twelve per 1,000; what has just been said of Sweden is true to some of the other nationalities, as Italy, Russia, Poland, and Austro-Hungary.

In considering the rates from typhoid fever in this table, remembering that this is a disease that attacks all ages, we find that eschewing the deaths that do not number twenty or over, that the Italians and Austro-Hungarians present the highest rates, at which we do not wonder when we consider their well-known inattention to personal and environal hygiene; the Germans and the Russian Poles on the other hand evidencing the lower rates, the reason in the case of the Germans being the well-known cleanliness of this nation, and of the Russian Poles the prevention of direct infection, most cases among them being removed to hospitals for treatment.

Interesting indeed are the figures presented in the table of mortality from pulmonary tuberculosis. Switzerland leads the list with a rate of 564, Ireland next with 476, Bohemia follows with 438, then Scotland, Austria-Hungary, and Italy in order named, Russia-Poland bringing up the rear with the lower rate of 172. Disregarding Switzerland, as its population numbers only a little over six thousand, and taking up the rate among the Irish, we are confronted with the remarkable rate of nearly 500; this is partially explained by applying the same reasoning to these figures as were given in commenting upon the higher general death-rate among the native Irish, consequent upon the unfavorable age-grouping of the Irish population; the average age at death of the Irish from this disease, based upon two hundred deaths reported, was forty-two years, whilst the average age at death among the entire population based upon over eight thousand deaths, attributed to the cause was thirty-six years; again, the death-rate from this disease in all Ireland in the year 1905 was 204, the rate of the Irish in this city being almost two and one-half times that in their native country. It is hard to believe that this high rate is dependent entirely upon a national predisposition; it is true that we should expect an increase by reason of the comparatively severe climate and the absence of the pure air of the home country, but this is in a measure counterbalanced by the more generous and sustaining food to be had here.

As regards the next cause, cancer and sarcoma, all the foreign natives, with the exception of Italy and Sweden, show a rather high rate, United States showing the lowest rate. Apparently the contention that meat and drink are the predisposing factors in the causation of the ever-increasing mortality from this disease is upheld when we consider that most of the foreign nations specified in the table are placed in the category of the large meat eaters, but this conclusion must not be too hastily jumped at, as the age distribution has considerable to do with the mortality from this disease, everybody recognizing the fact that cancer does not assume a prominent

place in the mortality list until the age of forty has been reached.

In considering the mortality from chronic organic heart and Bright's diseases, the most remarkable thing that can be said is that every nationality bearing a high mortality rate from cancer has a correspondingly high rate from these two causes; if the eye be allowed to run along on a straight line across the table this coincidence is very evident, and what has been said of cancer may be said of these two causes, bearing in mind that these three diseases have during the last fifteen years increased to an alarming extent.

tions drawn from Table No. 1 as to the mortality of the different nationalities from the causes specified; in typhoid fever column, omitting rates whereof the number of deaths does not reach twenty, the Italians and Austro-Hungarians have the highest mortality; under the heading measles we notice that the Italian children have a mortality of almost five times that of the entire city; the Italian children show the highest mortality from scarlet fever and whooping cough, with the Hebrew children a close second; neglect of the use of diphtheria antitoxin produces a mortality rate from diphtheria among the Italian children of three times that of all other nationalities

TABLE 2.

DEATHS AND DEATH RATE PER 100,000 ACCORDING TO NATIVITY

Countries	Population	All Causes		Typhoid Fever		Measles		Scarlet Fever		Whooping Cough	
		Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates
United States	568,746	7,051	1,398	85	14.9	101	17.8	46	8.09	51	8.97
Ireland	426,799	10,030	2,355	67	14.3	39	9.1	32	7.5	19	4.45
Germany	472,431	5,722	1,213	50	10.6	20	4.2	9	1.9	11	2.3
Italy	154,010	5,611	3,643	43	27.9	198	128.6	28	18.1	22	14.3
Russia-Poland	206,955	3,763	1,818	23	11.1	88	42.5	37	17.9	30	14.5
England	63,576	813	1,279	8	12.6	2	3.14	1	1.5	4	6.2
Austria-Hungary	107,828	2,523	2,340	26	24.1	35	32.4	14	13.0	10	9.3
Scotland	21,807	341	1,557	2	0.1	...	.	1	4.6	1	4.6
British America	11,631	156	1,341	2	17.2	...	.	.	...	.	.
Switzerland	7,592	144	1,897	...	...	...	.	.	...	.	.
France	14,046	305	2,171	5	35.6	2	14.2	.	...	.	.
Bohemia	19,222	338	1,759	2	10.4	6	31.2	.	...	.	.
Sweden	28,530	313	1,097	8	28.0	2	7.0			2	7.0
Mixed	300,668	3,705	1,226	30	0.69	87	28 1	35	11.3	40	12.9
Total	2,464,432	46,108	1,871	369	14.0	662	26.8	212	8.6	202	8.2

We will now take up the consideration of Table No. 2, which shows the deaths and rates for the same countries and periods as the former table, but based on the nativities of the *parents* of the deceased; the general death-rate column as compared with that of Table No. 1 presents a number of changes, the mortality of decedents whose parents were born in Italy, that is, native Italians and Italian-Americans so-called, reaches the extremely high mark of 3643 per 100,000, or 36.43 per 1,000, though in the previous table the rate of the native Italians is almost one-half of this rate; that of Austro-Hungarians, 1660 per 100,000 in Table No. 1 gives way to one of 2340 in Table No. 2; on the other hand, the mortality of native Americans of 1848 per 100,000 is superseded by a rate of 1398 per 100,000, representing the rate of native Americans and their descendants; the rate of the Irish-born, 2926 per 100,000, gives way to that of 23.55, representing the native Irish and Irish-Americans; in analyzing these rates the disturbing element is the fecundity of the different nationalities upon the mortality rates. The following nationalities have comparatively low birth rates and consequently their general death-rates in Table No. 2 show considerable decreases:

United States, Ireland, Germany, England, Scotland, British America, Switzerland, France, Bohemia and Sweden; considerable increases are shown in those nationalities noted for their opposition to the race-suicide tenets, to wit, Italy, Russia-Poland and Austro-Hungary; the birth-rates among the natives of these countries domiciled in the city have been exceedingly high (probably 32-35 per 1,000) during the past five years, and in consequence the number of children under five years of age preponderate compared with the number of children of corresponding age among the other nationalities, and as the death-rate is very high at these ages we naturally are not surprised at the resulting high mortalities.

Table No. 2 in the main corroborates the deduc-

combined, while among the Hebrew children the rate is almost twice that of the normal average. The mortality from pulmonary tuberculosis, shown in Table No. 2, shows the same general features as that of Table No. 1, the Swiss, Irish, French, Bohemians, and Scotch showing much higher mortalities than the others and than the normal average.

The rates from the cancerous, organic heart, and chronic Bright's diseases are all lower than in Table No. 1, due to the fact that these diseases attack only middle and advanced ages and the rates are figured on all ages, thus including the young children and adults and giving lower mortality figures.

TABLE 3.

Death rates per 1,000 in certain typical square blocks, old city of New York, 1906.

Block	Type	General Death Rate	Pulmonary Tub'r'losis	Cancer	Heart and Brights	Lobar Pneumonia	Broncho Pneumonia	Diarrheal Diseases
A	German	16.30	1.48	2.22	2.96	....	0.74	1.48
B	Austro Hungarian	16.43	1.21	0.72	2.17	1.93	1.93	1.93
C	Russian Pole	17.47	0.83	0.83	1.94	1.04	1.94	1.11
D	Italian	10.26	0.96	....	1.74	0.96	8.29	2.31
E	Bohemian	19.57	4.10	1.82	3.19	...	1.82	1.37
F	Irish	24.64	4.78	....	5.05	0.67	1.91	2.70
G	Chinese	34.65	12.47	0.69	5.54	3.46	0.69	....
H	Syrian	35.83	3.91	1.96	1.30	4.57	3.91	3.91
I	Negro	38.56	8.64	0.66	4.66	2.00	5.99	2.66
Ge	neral rates entire city	18 71	2.30	0 75	2 [illegible]	1 [illegible]	1 [illegible]	1 48

Under the rates from bronchopneumonia, the most surprising rate of the whole table appears, the rate among Italian children reaching the enormous height of 710 per 100,000, more than 7½ times higher than that of American children. When we consider under what conditions the Italian families herd together and the opportunities this affords for the spread of contagious and infectious diseases, the difficulties encountered by the sanitary officers can be imagined but not described. Think of seven tenement houses with a population of 1,500, of a square

block that by actual count harbors 5,100 souls, surrounded by other blocks harboring an average of 2,000, and you obtain an idea of the necessity for eternal vigilance on the part of the health officials.

The lobar pneumonia column reiterates the story as to the Italian national predisposition to disease of the respiratory tract; here the Italian leads, with none of the others a close second.

The mortality from the diarrheal diseases impresses upon the medical profession the necessity of promoting the campaign for a pure milk and food, using our best efforts to advance the worthy cause of a clean milk supply for our large cities with their

death-rate and a high rate in all diseases preponderating at middle or advanced ages.

5. Bohemian Block.—This block shows a moderately high general death-rate and excessively high rate from pulmonary tuberculosis and organic heart disease.

6. Italian Block.—This block shows a general rate slightly above the average but the highest rate from the pneumonias.

7. Russian-Polish Block.—This block shows a low general rate, with a pneumonia death-rate somewhat above the average. The low rates in the Jewish block and throughout the city can be ascribed to

TABLE 2—*Concluded.*

OF PARENTS OF DECEASED IN OLD CITY OF NEW YORK, YEAR 1906

Diphtheria		Pulmonary Tuberculosis		Cancers		Heart Diseases		Broncho-Pneumonia		Lobar Pneumonia		Diarrheal diseases		Chronic Bright's	
Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates
198	34.8	895	157.4	259	45.5	511	89.9	531	93.4	542	95 3	803	141 2	483	84.9
74	17.3	2,018	472.8	436	102.1	104	244 1	318	74.5	851	199.4	373	87.4	1,091	255 6
42	8.9	816	172.7	416	88.1	657	139.0	164	34.7	403	85.3	186	39.4	585	123 8
202	131.1	375	243.4	66	42.8	187	121.4	1,095	710.0	513	333.1	745	483 7	115	74 6
147	71.0	261	135.3	177	87.9	257	128.5	328	163.8	215	107 7	363	182.2	161	80.7
11	17.3	85	133.7	64	100.7	91	143.1	22	34.6	68	107.0	26	40.9	90	141.6
86	79.8	261	242.0	118	109.4	157	145.6	264	244.8	164	152.1	280	259 7	96	84.0
1	4.6	63	287.7	27	123.3	39	178.1	13	59.4	25	114.2	9	41 0	37	169.0
1	8.6	21	180.6	10	86.0	15	129.0	5	43.0	16	137.6	7	60.2	20	172 0
....	....	27	255.7	12	158.1	15	197 6	4	52.7	10	131.7	7	92 2	14	184 4
2	14.2	55	391.6	19	135.3	29	206.5	11	78.3	20	142.4	11	78.3	28	199 3
6	31.2	65	338.2	27	340.5	28	145.7	17	88.4	16	83.2	28	145.7	32	166.5
10	35.0	44	154.2	18	63.1	14	49.1	17	59.6	18	63 1	27	94 6	16	56.1
160	51.7	457	145.6	90	29.1	229	73 9	312	100.8	228	73.6	478	154 4	175	65.1
983	39.9	5,000	239.4	1,856	75.3	3,506	142.3	3,379	137.1	3,303	134.0	3,652	148.2	3 232	131 2

teeming tenements; the death-rate among the Italian children is double that of the Austro-Hungarian and treble that of the average for the entire city.

The third and last table to which your attention is directed shows the death rate per 1,000 from certain diseases and all causes in selected square blocks typical of some of the nationalities and races, the population of these blocks number from 1,400 to 5,100 inhabitants, and are situated in congested areas of the city.

1. The Negro Block.—The influence of the negro's presence upon the mortality rates is always cumulative and is clearly shown in the table; the general rate, 38.56 per 1,000 of the selected negro block (San Juan Hill) is more than double that of the city at large; the rate from pulmonary tuberculosis is three and a half times that of the average for the city and is only succeeded by that of the Chinese block; the mortality from organic heart, chronic Bright's, pneumonias, and diarrheal diseases is also excessively high; throughout the greater city the mortality among the colored population is 27.16 per 1,000, as against one of 18.19 among the whites, the general death-rate being 18.35, the effect of the negro population being to increase the rate by .16 of a point.

2. The Syrian Block.—The recent addition to our community of the Syrian and Armenian section bids fair to affect detrimentally the mortality rates; the general rate of 35.83 per 1,000 almost equals that of the negro block, and the mortality from cancer, pneumonias, and diarrheal diseases is greater than that of the negro.

3. Chinese Block.—This block contains about 1,450 Chinamen and is noted as the block with the highest death-rate from pulmonary tuberculosis, as well as for its unsavory police record; the general rate is 34.65 per 1,000, and it also shows a rate from pneumonia almost as high as that of the Italian block.

4. Irish Block.—This block shows a high general

several causes; although living in densely-populated sections, the Jew, by reason of his temperate habits and his inherited vitality, is able to resist and overcome infection; or, as has been said of the Jew, he is physically "tough" in its best sense; again, the present status of the Jew as to age distribution is favorable at most age-periods, with the exception of under five years.

8. The Austro-Hungarian Block.—This block makes a very presentable showing, the general rate being almost the same as that shown in Table No. 1.

9. The German Block.—This block shows the lowest general death rate, the only rate much above the average being that from cancer.

The conclusions forced upon us by the consideration of these tables are that the natives of Ireland, by reason in great measure of their living at unfavorable age groups, increase the general mortality, and this is also true to a lesser extent of France, Switzerland, and Scotland; the natives of Italy, Bohemia, and United States are credited with a rate almost the same as that of the general average of the city, while the natives of Sweden, Germany, Russia-Poland, Austro-Hungary, and England affect favorably the general mortality.

On the other hand, the immediate descendants of the Irish, Italians, and Austro-Hungarians are instrumental in increasing the general rate and also the rate from certain preventable and infectious diseases; the immediate descendants of most of the other nationalities, including Americans, serve to lower the general rate.

I will close by stating that the Department of Health of the city has, for the past forty years since its organization in 1866, performed wonders with its world-known efforts to stamp out all communicable and infectious disease, and its efforts have left an ineffaceable mark upon the history of sanitary science. Much remains to be done, and it must be you gentlemen who will direct in future the footsteps of the sanitarian in his never-ending work.

REPORT OF A CASE OF ACUTE GASTRECTASIS, FOLLOWING TYPHOID FEVER AND PREMATURE BIRTH; RECOVERY.

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Until quite recently considerable doubt was expressed as regards the existence of cases of acute dilatation of the stomach, but detailed observations, more particularly by German and English writers, together with, in the greater number of instances, an account of the post-mortem findings prove the question beyond doubt. It may be remarked, however, that analysis of these cases shows a wide variation as regards the etiology and symptoms and even the morbid anatomy, making the diagnosis often a difficult one, which is to be regretted, as an earlier recognition of the nature of these cases would undoubtedly lead to diminish the present high mortality rate.

This is particularly true, as recent observation would seem to add a fruitful cause previously overlooked, namely, the sudden incarceration of the lower end of the duodenum between the root of the mesentery in front and the verterbral column behind (Kundrat, Schnitzler, Albrecht, Muller, Conner, and others).

Neck, in 1905, in a review of the subject collected 60 cases. Lewis A. Conner in a most thorough study (March, 1907) was able to present 102 cases for analysis. In an investigation of the literature since the last date, I have been able to collect 8 additional cases, of two of which, however, I have been unable to procure the detailed reports and which will not be included in this paper. The remaining six, with the inclusion of my own case, would make 109 cases to date. This latter case I will detail at some length.

Mrs. F. White, female, 23 years old, married, height 5 feet 9 inches, weight 160 lbs., no children or miscarriage. Family history is good. Previous history negative. She was admitted in my service at the Howard Hospital on January 11, 1907, suffering from a typical attack of typhoid fever, with rose spots, positive Widal and diazo tests, and remained in the hospital until February 13. The case was free from complications other than a rise of temperature during convalescence lasting four days, accompanied by pain in the right hypochondrium. On March 7, when apparently perfectly well, after a hearty meal of corn beef and cabbage she developed severe pain and marked tenderness in the epigastrium with nausea and vomiting, prostration, and constipation which continued for three days. During this time she was treated by her husband, a senior medical student, by hypodermics of morphine. On March 10 she miscarried at about the seventh month and was delivered by Dr. Raudenbush of a live child without the use of anesthetics. She did well apparently for about 18 hours, when the abdomen became suddenly markedly distended, with little or no pain and no vomiting, but evidences of profound shock. I saw her at this time for the first time since her departure from the hospital. Her condition was apparently an extremely grave one. The radial pulse was practically imperceptible and the heart sounds weak, tumultous and approximating 200 to the minute; respiration 36; temperature 97°. The face and body were deeply cyanosed and covered with a cold perspiration, and although conscious the patient could not speak above a whisper. The most conspicuous feature, however, was a marked distention of the whole upper abdomen which extended downwards to two inches below the umbilicus. The tumor was markedly sensitive on pressure and percussion over this area was absolutely flat. The bowels, which had been opened once on the previous day, were again constipated, but the escape of flatus was observed.

Eight ounces of urine was obtained by catheterization, which on analysis gave the following result: Distinct trace of albumin; no glucose; indican (marked); bile pigments (marked); diazo positive; sediment light; flocculent; sp. gravity, 1030; reaction, acid; color, deep amber; appearance, clear; odor, aromatic; casts, numerous, long and short, hyaline, and finely granular, also a few short, broad hyaline and coarsely granular; cylindroids, a few; leucocytes, a few; epithelial cells, moderate; amorphous urates, a few (Medico-Chirurgical College Laboratory). It may be stated that the many previous examinations of the urine were negative and that the above noted condition did practically disappear one week later.

Diagnosis of acute dilatation of the stomach having been made, the stomach tube was passed with considerable difficulty and three quarts of a dark, sour, offensive liquid was withdrawn together with a large quantity of gas. The relief was almost immediate and the patient was in a much more comfortable condition within one hour. The distention, however, was but little improved but on percussion over this area a high pitched tympanitic note had replaced the former flatness. An analysis of the stomach contents gave the following results: Odor, foul, offensive, blood strong (guaiac test); lactic acid negative or questionable trace; reaction alkaline, HCl absent; bile, trace; starch, negative; albumin, great amount; leucocytes and red cells; amorphous material and shreds of tissue. Subsequent examinations of other specimens gave practically the same results.

Hypodermoclysis was employed. Food and drink stopped by the mouth save a small quantity of cracked ice. Rectal feeding was resorted to and strychnine gr. 1-20 hypodermically was given every three hours together with physostigmine gr. 1-50 every twelve hours. All attempts at the postural treatment both at this time and subsequently had to be abandoned on account of the increase of symptoms. The next day, 18 hours later, the distention again became more marked together with the return of symptoms of collapse, and the tube was passed with the recovery of one quart of fluid similar to the above. Six hours later another quart was withdrawn, twelve hours later another quart, and twelve hours after this a little over a pint was recovered. It will be noted that nothing but small quantities of cracked ice had been taken by mouth during all this time. After repeated efforts of rectal irrigation, the bowels moved on March 12 and an offensive diarrhea began 25 to 35 movements a day, small in amount and containing particles of a gummy greasy substance, were passed. This continued until March 16 and was attended by considerable pain over the abdomen, which subsided with the return of the less frequent stools.

At this time knots of intestines were noticed against the abdominal wall, tense and hard knots disappearing with a gurgle only to reappear at another part. This was accompanied by general pain and tenderness and at these times attacks of

collapse were in evidence which required prompt and vigorous stimulation (nitroglycerin and strychnine).

Nervousness, insomnia, and pain over the wave areas continued for three weeks. On March 28 the distention of the stomach showed marked improvement and feeding by the mouth was begun and continued, but lavage was necessarily continued for over one month. I have recently received word from the husband that his wife is now in perfect health.

The above case presents several points of interest. The length of time after convalescence from typhoid fever (four cases are reported), over one month, would seem to preclude its classification under those following exhausting diseases, and yet it is more than probable that the tissues which had undergone change during that disease had not returned to their normal condition. And although the indiscretion of diet on March 7 was attended by symptoms of acute indigestion, yet there was no visible protrusion of the stomach until March 11, eighteen hours after the occurrence of labor. It is possible that the emptying of the contents of the womb may have had something to do with the occurrence of this condition. (One case is reported following labor.)

The absence of vomiting is exceptional, but was noted in the case reported by Conner. It has been reported present in over 90 per cent. of the cases. The quantity of fluid has in the majority of instances been spoken of as surprisingly large. Indeed Morris has considered this large secretion as the primary cause of the dilatation. The quantity removed from the stomach in my case on different occasions was greatly in excess of the amount of cracked ice which was swallowed.

Again the visible peristaltic waves reported in my case, which lasted three weeks and which might reasonably be expected to be present, are only mentioned in three other instances. Baumler and Herrick saw slight waves and Schultz noticed the same condition for a day.

1. Boas, in his Diseases of the Stomach, American Edition, 1907, makes the following classification of the subject: Gastric paresis after errors in diet. Conner has collected 15 instances to which may be added one of my series, a case reported by Neck, a boy of sixteen when the condition came on soon after eating a great quantity of fruit.

2. After severe infectious diseases such as scarlet fever, pneumonia, typhoid fever, etc., my case makes the fifth following the latter disease.

3. After exhausting chronic diseases. In my collection of cases a consumptive died five hours after the symptom of gastric dilatation. Another, male, suffering from chronic tuberculous caries of the ribs, had an attack of acute dilatation one half hour after taking veronal 0.3. Recovery (Neck).

4. After traumatism. Injury to the head or spine, or even slight blow on the abdomen. Schultz, Fraenkel, Brown, Kelynack, Riedel.

5. After laparatomies. Koberle, M. Gross, Hunter, Grundzach, Robson, Fenger, Kehr, Stieda. Two of the cases in my series, recently reported by Stafford B. Smith (*Journal Med. Asso.*, September 14, 1907, page 941) occurred respectively eleven and fourteen days after operation for appendicitis with one death.

6. Chloroform narcoses alone probably by central paralysis (Morris, Reidel). In most of the operations when the nature of the anesthetic is mentioned, chloroform has been used with the exception of those by Stafford Smith and Herrick.

7. Caused by mechanical kinking of the pylorus on the jejunum or through acute obstruction of the pylorus (gallstones passing into the pylorus). Recent observations of Kundrat, Schnitzler, Albrecht, P. Muller, Conner, and in my series by Neck have exhibited partly torsions of the mesenterium, partly compressions of the duodenojejunal section by the arteria mesaraica superior as causes of such kinking.

Conner, whose classification is somewhat different, has a group of six cases associated with disease and deformity of the spine. He also quotes four cases (W. H. Brown, Miller and Humby, Simon, Wright) for which no cause whatever is assignable.

Three-fourths of the cases occurred during adult life. The youngest case was in a child of three years (Dickinson), the oldest in a woman of sixty-nine (Kundrat).

Sexes.—A slight preponderance of the female sex exists.

Symptoms as a rule come on rapidly, generally within twenty-four hours, especially in the operative cases, and yet in Stafford Smith's cases eleven and fourteen days had elapsed. Most often there is marked abdominal distention extending from the ensiform cartilage sometimes as far down as the pelvis. Vomiting, as has already been mentioned, is nearly always present and where absent may be due to the paresis of the abdominal wall. Profound depression or collapse, weak running pulse, shallow and frequent respiration, normal or subnormal temperature. Intense thirst and scanty or suppressed urine. Pain and tenderness are mentioned in about one-half of the cases and seem to vary considerably in severity. Constipation is noted in the majority of instances where the condition of the bowels is mentioned; as a rule it seems to be of marked degree, but in nine cases diarrhea existed.

Of 102 cases collected by Conner 74 died, giving a mortality of 72.5 per cent.; of the seven detailed additional cases in my collection there were two deaths; a total of 76 deaths out of 109 cases. It is more than probable, however, that if the minor degrees of dilatation were recognized and reported there would be a considerable lowering of the death rate.

In those cases where the duration could be reasonably established it varied from three hours to several weeks. In 75 per cent. of the fatal cases the duration was less than five days. (Conner.)

Seventy-one autopsies are on record. In all of these cases is mentioned the enormous size of the stomach and generally a thinning of the walls. The duodenum was dilated in thirty-nine cases, and in twenty of these the dilatation stopped suddenly behind the root of the mesentery where the compression existed.

The causes assigned for acute dilatation are varied. In the nonobstructive cases, particularly in those following abdominal operation, it has been assumed to be of a paralytic nature. Herf assumes that this paralysis may be due to the excretion of chloroform by the stomach. Albu attributes it to the absorption of toxins. Pepper and Stengel consider that the pyloric stenosis may be due to spasm the result of acute indigestion or hyperacid secretion.

Conner has collected eighteen cases in which the autopsies showed mesenteric constriction of the duodenum. The autopsy made by Neck (my series) may be included in this division. It would seem therefore that this condition had been overlooked in some at least of the other cases and that from this time on more careful search in this direction

will result in proving its existence in a still larger percentage of cases. Besides which the cases in which the postural treatment was employed and resulted in recovery were probably of this nature.

The diagnosis is not as difficult as might be thought, if the possibility of the occurrence is borne in mind. It is possible that many cases of uncontrollable vomiting after operations may be due to this cause. The vomiting as a rule is more constant and the pain less than in volvulus of the stomach, which may closely resemble it in other respects. The occurrence of a visible protuberance and the information gained by the passage of the stomach tube are of great importance. The fluid should not be fecal in character and may contain bile or even pancreatic juice. Kelling suggests the use of a high injection of a 0.6 per cent. salt solution to determine whether complete obstruction of the duodenum exists. This as a rule will empty the small intestine and the presence or absence of fresh bile would determine the question.

In the treatment, early and frequent lavage is an absolute necessity and may, if employed early after an operation, even prevent its occurrence. In a number of the recent cases reported the placing of the patient in the knee-elbow position or on the belly has been followed by prompt and satisfactory results. (Schnitzler, Baumler, Müller, Waltzberg, Robson). It is to be remembered, however, that similar treatment in my case aggravated the symptoms, and the report of a like result is made by Borchardt. Water and food should be administered by rectum together with, if necessary, the employment of hypodermoclysis. Strychnine, atropine, physostigmine, and nitroglycerin should be employed. Saline purgatives in small and repeated doses may be required when the more acute symptoms have subsided.

The results obtained by operation for the relief of this condition as collected by Conner have been unsatisfactory. In seven instances (W. H. Brown, Box and Wallace, Appel, Hoffman, Jessop, Kirch, Wright) the stomach was opened and evacuated but none of the patients recovered. Gastroenterostomy has been performed twice (Kehr, Korte) and both times unsuccessfully. Petit found at operation a sharp kink in the duodenojejunal junction. This he relieved by lifting up the jejunum and stitching it to the transverse mesocolon. The symptoms disappeared and the patient recovered. The advisability of a gastroenterostomy is open to serious question. There is quite general agreement that it should be employed if at all, only as a last resort. In most cases it is unnecessary, and in those patients who have resisted all other methods of treatment it is doubtful, Borchardt thinks, if any good can be accomplished by operative measures.

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CHANCROIDAL BUBO AND ITS TREATMENT.*

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Enlargement of the inguinal glands occurs in 30 to 50 per cent. of all cases of chancroid. It is a serious accident to a working man because the inflammatory swelling is painful and necessitates stopping his work and remaining in bed; and under the former plan of treatment by excision, a large open wound was left, which remained six or eight weeks before it was healed.

It was formerly thought that the lymphatic glands became swollen from the irritation of toxins, but it is now known that the toxins are not responsible, but Ducrey's bacillus (the specific organism of the chancroid) is the active agent. It is easy to demonstrate the presence of Ducrey's bacillus by incising the bubo, scraping its walls, and examining the pus under the microscope. Twenty-four hours after opening the bubo, mixed infection occurs, and the streptococcus can be found.

It has been found that with the presence of chancroids, heavy physical exercise tends to the development of buboes, and for this reason women, whose work is not as laborious as that of men, are less liable to suffer from them. Another frequent cause

*Read before the Brooklyn Medical Association, May 8, 1907.

for the formation of bubo is the improper treatment of the chancroid. An attempt to destroy its specific character by cauterizing it with nitrate of silver stick is not only useless, but is often directly responsible for the formation of bubo. The cauterizing action of nitrate of silver, is very superficial and not sufficient to destroy Ducrey's bacillus, and its only effect is to form a crust over the sore. Thus the organisms cannot escape from the wound but make their way into the lymph glands and a bubo is very apt to form.

One gland alone may be enlarged, but as a rule, the whole chain on one side is affected and it is not infrequent for glands on both sides to be involved.

The anatomical structure of the lymphatic vessels communicating with each other and anastomosing explains the fact that the chancroid may be on the left side of the penis and the bubo on the right side, or *vice versa*, or the chancroid and bubo may be on the same side.

While in general the chancroid is still visible when the bubo is forming, it occasionally happens that the sore has healed or indeed in some cases the chancroid has been so insignificant as not to have attracted attention, and the bubo appears to have formed spontaneously. The French describe this condition as *bubo d'emblée*, and for many years its etiology was obscure, but to-day the fact is established that a bubo is always caused by a sore on the penis or lower part of the body, which in exceptional cases may have healed at the time the bubo first appeared.

In cachectic and debilitated individuals, a bubo may break down and slough and become connected with a true chancroidal ulceration which extends over a large area and becomes in its course a serpiginous or sloughing chancroid.

In making a diagnosis of bubo, the difference in the sensation on palpation of the glands will often indicate whether the enlargement is due to syphilis or whether from a chancroid. The difference is well characterized by Lesser, who described the syphilitic adenopathy as being in the form of a rosary, while the chancroidal bubo resembles a packet.

Among the other possibilities to bear in mind are undescended testicle, hernia, and tuberculosis or cancer of the inguinal glands.

It was formerly supposed that, if a bubo could be seen in the early stages before suppuration had begun, the glands might be dissected out, the wound closed by suture, and healing by primary union obtained.

I have seen possibly 200 cases of bubo, but have almost never seen one in which suppuration had not begun in the central part of the gland when it was exposed by dissection; in consequence of this the wound is always infected and primary union does not take place. A deep gaping cavity is left which usually takes from four to eight weeks to heal by granulation.

The attempt to bring the granulating surfaces together after a few days by suture has also always met with failure, and as most of these cases are treated in hospitals, a bed which is required for an active case must be given up to a granulating bubo.

Another objection to the early excision of bubo is the frequent occurrence of elephantiasis of the scrotum and penis subsequently, from the closing up of the lymphatic vessels in the healing of the cavity.

It is true that occasionally a bubo will be met with which does not soften under hot applications and these of course must be excised and curetted out, but they are largely in the minority.

The treatment which I desire to advocate to-night was suggested to me by a visit to the Charité in Berlin, summer before last, and since then I have used it in the Long Island College Hospital and the Kings County Hospital with most gratifying results.

When a bubo first appears, an attempt should always be made to prevent suppuration by putting the patient to bed. The ice bag, which was formerly so popular, is no longer used because it has been found that resolution will take place just as well with warm applications. Injection into the substance of the gland of antiseptic solutions, such as nitrate of silver, carbolic acid, and bichloride of mercury, has also been abandoned as useless.

A common method in the Charité in Berlin is to cover the bubo with gauze, wet with 95 per cent. alcohol, covered with cotton wadding and perforated gutta percha tissue to prevent too rapid evaporation. The alcohol is renewed twice a day as it evaporates. Another method in common use is fomentation with solution of acetate of ammonia used warm and frequently renewed. Tincture of iodine has little or no value as an absorbent.

After fluctuation has begun the warm applications should be changed for hot ones, to encourage rapid breaking down of the glands.

The thermolyte bags are useful, as they can be used with the hot fomentations and serve to retain the heat for a long time.

After the bubo is thoroughly broken down and full of pus, a small incision is made with a double-edged knife and the pus evacuated. A 10 per cent. iodoform-glycerin emulsion is then injected into the wound. The injection is made three times at the first sitting, the first two injections being allowed to run out and the last one retained. The wound is then bandaged over night with fomentations of solution of the acetate of ammonium.

On the following day the bubo is emptied by squeezing out and the injection is again made three times, the two first injections running out and the last one remaining in. The wound is then bandaged and left undisturbed for five or six days. At the end of that time, in the great majority of cases the bubo is healed and the patient requires no further treatment.

I append a detailed report of thirteen cases, kindly prepared for me by Dr. J. Sturdivant Read. Five cases occurred in my service at Long Island College Hospital, six cases in my department at the Polhemus clinic and two cases were private patients of Dr. Read. These patients were all cured in from seven to ten days after they were incised and injected with a 10 per cent. iodoform-glycerin emulsion.

Cases Treated in Long Island College Hospital.

1. N. N., sailor, admitted November 11. Right bubo, gonorrheal, indurated, large, one small area of suppuration. Incised—small amount of pus; iodoform injections. In bed ten days. Complete recovery in two weeks.

2. C. P., sailor. Admitted December 11. Right bubo, gonorrheal, large, soft, fluctuation marked. Iodoform injections. In bed one week. Complete recovery.

3. G. S., sailor. Admitted December 18. Right bubo; gonorrheal, suppuration well advanced. Incised; iodoform injections. Complete recovery in six days.

4. Tonzio, sailor. December 17. Double bubo, gonorrheal. Left showed marked fluctuation. Incised; iodoform injections. In bed seven days;

complete recovery in ten days. The right bubo, which was indurated on admission, continued so. There was no sign of change in its condition and the patient refused to remain in the hospital.

5. Fuer, sailor. Admitted December 23. Right bubo, gonorrheal, large and fluctuating. Incised; iodoform injections. Good recovery in eight days.

Cases Treated in Genitourinary Department of Polhemus Clinic.

6. January 1, T. G., Italy, bartender, 28 years old, single. Chancroids appeared two weeks ago; swelling in groin began four days later. Examination shows suppurating bubo on left side. Incised, small amount of pus; injected. He remained quiet about the room four days; went to work on the fifth day, as there was no pain. Bubo on seventh day much improved. Washed with peroxide and reinjected. Reported one week later cured.

7. January 12, W. B., U. S., clerk, 22 years, single. Gonorrhea and chancroids for last two weeks. Examination shows soft bubo on the left side. Incised, about three drams of pus being evacuated; injected with iodoform. Reported three days later to dispensary. Wound improved. Cleansed with peroxide of hydrogen and reinjected. One week later improvement so marked that he was allowed to return to work. January 22 discharged cured.

8. January 29, T. M., U. S., telegrapher, 24 years, single. Chancroids four weeks ago; has had large swelling in groin for ten days. Examination shows large suppurating bubo on the right side. Incised and injected. In bed one week. Complete recovery at end of ten days.

9. T. J., U. S., carpenter, 33 years old. Chancroid appeared on the frenum three weeks ago; bubo developed on the left side which became very painful in the last week. Examination shows small bubo with one soft area. Incised, about one dram of pus being evacuated; injected. February 28 reports that after rest in the house one week he went to work again. Examination shows all suppuration to have disappeared. No tenderness remains.

10. February 26, J. K., U. S., laborer, 28 years, single. Chancroids on foreskin and frenum appeared two weeks ago. One week later swelling in right groin began. Examination showed inguinal bubo. No area of suppuration. Sent home and poultices ordered for two days. On return a small area of suppuration was found. The bubo was incised and injected. Order to stay in bed five days. On examination at end of that time wound was healing rapidly; it was cleansed with peroxide of hydrogen and reinjected. March 7, discharged cured.

11. March 28, H. B., U. S., 34 years, single, laborer. Has had chancroids for three weeks. Examination shows fluctuating bubo on the left side. Incised and injected. Reported to dispensary April 6, saying he stayed in the house one week, at end of which time he returned to work. Examination showed wound practically healed; no sign of inflammation.

12. November 3, 1905, P. D., undertaker, 26 years, single. Denies any previous venereal history. Five weeks ago he first noticed sores on the penis; one week later the bubo developed, which has been increasing in size and discomfort ever since. There are two chancroids on the foreskin, one on the frenum, and a bubo on the right groin, large and fluctuating. The pus had burrowed down the inner side of the thigh. A single incision was made, one and one-half inches long, at the point of the greatest softening, giving exit to thick yellow pus. Injected with iodoform emulsion. At the end of a week he reported, much improved. Reinjected. Seen two weeks later, the patient said he did not come back, as it "healed right up."

13. December 4, 1905, S. J., laborer, 26 years, single. Three chancroids, one on frenum, appeared three weeks ago. Period of incubation uncertain. Bubo on the left side is hard, painful, and hot. Patient was in bed two days, with hot applications. On December 7, suppuration was beginning. The bubo was incised, giving exit to about 2 ounces of pus. Injected with iodoform emulsion. Repeated injection three days later. At the end of a week he was much improved; no pain, slight induration, no suppuration or discharge. Patient promised to report again, but failed to do so.

SYPHILITIC FEVER, WITH REPORT OF A CASE.*

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Medical writers, including syphilographers, give scant space to the description of this fever; the authors of the various articles published vary widely as to when the pyrexia concomitant with syphilis should be called "syphilitic fever."

Guntz's[1] description of a true syphilitic fever is one with rather an insidious invasion, occurring during the second incubation, and preceding the outbreak of the first eruption; generally occurring about two months after infection, sometimes as late as three months. The type of the fever may be continuous, intermittent, or remittent; very rarely, indeed, is it accompanied by great prostration, headache, epistaxis, etc., and it may then assume a typhoid character.

With a true chancre sometimes a bubo suppurates and the formation may be attended by a rise of temperature, but this would not be syphilitic fever. Again we see that in the cachectic condition of tertiary syphilis, with the bone and the visceral lesions, in brain syphilis, etc., a rise of temperature is one of the clinical features of the affection; yet this is not syphilitic fever.

Lowenburg[2] declares syphilitic fever should not be confounded with the commonly recognized fever occurring during the early period of the secondary stage of syphilis. It is a *late* manifestation, and occurs more often in those who have inherited the taint than those who have had a primary sore.

Futcher[3] says the fever may occur at any time after the appearance of the chancre—as early as three to four weeks before the secondary rash, or at any time during the course of the secondary or tertiary periods.

Musser[4] calls attention to an intermittent type which may occur as the initial fever or in the tertiary stage.

Osler[5] follows the description of Guntz.

Ravogli[6] asserts that syphilitic fever has nothing to do with fevers arising late from gummatous ulcer, or from osseous complications, due to the action of the common pus cocci.

Carrière's[7] description of the fever is similar to that of Guntz, and he declares that after a careful scrutiny of the literature he finds only 25 cases; since his article there have been reported 6 cases, 1 each by Lowenburg,[2] McKenna,[8] and Birt,[9] and

*Case reported at a meeting of the Physicians' Club, October 12, 1907.

3 by Rolleston.[10 11] Of these 6 cases only 2 would come under the head of syphilitic fever as described by Guntz and Carrière. McKenna's case was a child 9 years of age afflicted with heredo-syphilis. Lowenburg's and Birt's cases were of fever in the tertiary period. Of the 3 cases reported by Rolleston, one was a case of heredo-syphilis and enteric fever; the other 2 were cases simulating typhoid fever, and occurred in the secondary period.

Fournier[12] coined the word "typhose" to emphasize and to designate that condition met with in certain cases of syphilis which closely simulates typhoid fever.

Because of our lack of positive knowledge of the contagium and its relation to the many pathological changes, the disease must be approached from the clinical side and therefore the chances of error are many. Keyes, Musser, and others make mention that in cases of obscure fever it should be borne in mind that the cause thereof may be a syphilitic infection, particularly when we recall that fever may occur in syphilis apart from any other special manifestation, such as iritis, adenopathy, periostitis, etc.

To the cases reported we can add one in which the early course of the fever simulated typhoid to a most remarkable degree, but in which the diagnosis was made comparatively easily at the time when the general eruption was in evidence; while the eruption was sparse and scattered, the diagnosis of an accidental rash of typhoid fever was considered; it was my good fortune to see a case of the latter while the case of syphilitic fever was under observation. For the history of this case I am indebted to Dr. Frank Gordon.

J. F., male, aged 20, bookkeeper; family history negative; previous history, measles, mumps, whooping cough and scarlatina. Three months ago had an infected heel, which was incised and treated surgically; vaccinated successfully six years ago. His employer had just recovered from an attack of typhoid fever.

Present illness, August 10, 1907; he attended to his labors, but felt badly and went to bed early. The second day he was unable to eat breakfast, had some headache and abdominal pain, went to his work but was compelled to return home at noon; was seen by Dr. Gordon in the afternoon; temperature 105° by the mouth, pulse 130, spleen enlarged. Patient complained of severe pain in the back of the neck; had an attack of epistaxis while the doctor was present, and then recalled a previous attack one week before. On the third day the temperature was 104°, pulse, 120, no sweating, complained of pain in the abdomen and in the back of the neck; prescribed calomel, grs. 10.

Fourth day: Morning temperature 99°, afternoon temperature 100°; spleen still palpable, but not so large; found a rose spot on the abdomen; the patient began to have a slight cough, but was much brighter and very hungry. Patient of his own accord took calomel, grs. 2, that evening, also in the evening of the fifth and sixth days, when the doctor was informed and the drug was ordered discontinued.

Fifth day: Had a severe epistaxis; temperature, A.M. 99.5°, P.M. 100.5°; two more rose spots found on abdomen, gurgling in right iliac fossa, no tympanites, no vomiting, slight cough persisting.

Sixth day: Temperature, A.M. 100.5°, P.M. 101.5°; no more rose spots; toward night there was a general erythema. Had marked "tache cerebrale."

Seventh day: General condition about the same; erythema disappeared; no more rose spots; slept poorly.

Eighth day: About same; irritable; refused medicine; still complained of pain in the abdomen and in the back of the neck; photophobia; more spots on the abdomen.

Ninth day: Many more spots on the abdomen, bright rose in color and fading on pressure; a few look like pimples. Temperature, A.M. 101.5°, P.M. 102.5°. Began to complain of sore throat; on inspection fauces were found congested, no patches; a few rose spots on forearms. A second Widal examination was negative.

Tenth day: I saw the patient in consultation with Dr. Gordon. Temperature 103°, pulse 120; tongue heavily coated and moist; intense pharyngitis and uvulitis; two patches of leucoplakia, one on inner surface of right cheek, the other below the central incisors of the lower jaw. Cervical and inguinal glands slightly enlarged, epitrochlears not palpable; in the right femoral region was a nest of small glands distinctly palpable and exceedingly painful on examination. Tenderness in right iliac region, and decided gurgling. A slight discharge from the urethra was noticed for the first time; microscopic examination revealed no gonococci.

Eruption was a typical secondary maculo-papular syphilide, very extensive in character, especially marked on forehead, hands, and feet; on each patella was a papular ring made up of a large number of small papules; around the meatus urinarius was a group of papules and a thickening could be felt along the floor of the urethra.

Under treatment by mercurial inunctions the urethral discharge ceased in thirty-six hours, and the temperature was reduced to normal in seventy-two hours; the patient continued to do well for twenty-five days, when inunctions were stopped and he was placed on protiodide of mercury; two weeks later the patient complained of rheumatic pains in the shoulders, wrists, and sternum; temperature 102.2°, pulse 130. Inunction treatment was renewed, with prompt removal of all symptoms.

In a comparison with typhoid fever, Potain [13] says just at the commencement of the secondary period there may light up a fever with the mucous plaques that will have all the appearance of typhoid, but while there may be great prostration, and even stupor, there will not be any pain on palpation of the right iliac region, nor any gurgling there. This statement is not in accord with those of other observers, as Carrière mentions in his symptomatology, a tense and painful abdomen and the presence of gurgling; in this case the patient had abdominal pain increased by pressure on the second day and gurgling was noticed on the fifth day; both of these symptoms persisted until after the beginning of the mercurial inunctions.

The initial temperature of 105° is not common; the drop in temperature on the fourth day, which lasted about seventy-two hours, was undoubtedly caused by the calomel, showing the effect of mercury on this fever.

A transitory erythema mentioned by Futcher[1] was observed in this case in the evening of the sixth day. An unwonted excess in the appetite (bulimia) is sometimes a feature of early syphilis, and was particularly pronounced in this case on the fourth day.

The urethral discharge was probably due to the papular eruption occurring within the urethra; this symptom I could find mentioned in only one reported case.[1]

Why does syphilis assume such a febrile condition in some cases? Carrière gives three hypotheses: (1) The syphilitic microbe is hypervirulent; (2) these cases are instances of concomitant secondary infection; (3) it is due to the poor, badly defended ground upon which syphilis has fallen. His conclusions are that there is nothing which enables us to say that syphilitic typhosis is due to hypervirulent infection; that it is not due to any secondary infection nor to any heightened influence of the intestinal microbe; there is a probable element of truth that syphilis has fallen upon badly defended ground.

Jacobi[14] contends that these persons who suffer so severely do so because the disease has never been present in their forefathers, or at all events not for a long time previously, so they are not safeguarded by an acquired immunity.

Westphalen[15] claims that the pyrexia is due neither to the absorption of necrotic material nor to the special viscus affected, but to the natural reaction against the *Spirochæta pallida* or its toxins.

Ravogli[6] gives as a reason for the pyrexia that it is the result either of the chemical products emanating from the metabolism of the syphilitic microorganisms, or from the products of disintegration of the blood or of the tissues, which in the general circulation are liable to produce this peculiar pathological symptom of general reaction. Burke,[16] in an article on scarlet fever, contends as to hypervirulency that if the blood and tissues previous to the advent of an infection were toxic laden there will be a better culture medium for the growth of the infecting germ. During the infective process the immunizing and the curative powers of the body are persistently called into play; under favorable conditions the leucocytes are rapidly produced and liberated into the circulation, to digest and destroy the invading entity, bacteria, protozoa, or toxin; in the battle of the leucocytes with bacteria or protozoa, both the leucocytes and the unicellular invaders are killed in countless numbers, until one or the other force prevails.

Rosenau and Anderson,[17] in their laboratory experiments, show that the phenomenon of hypersusceptibility has been produced in the guinea pig, by extracts obtained from the colon bacillus, yeast, hay bacillus, anthrax, tubercle bacillus, and the typhoid bacillus. From their experiments they believe that the problem of hypersusceptibility has an important bearing upon the question of immunity; their work indicates that hypersusceptibility is either an essential element or one stage in the process of resistance to a certain class of diseases. It would seem from an analysis of these various opinions that the pyrexia of syphilitic fever is due to a hypervirulent infection upon a medium that is unable to combat the infecting protozoa, because of a loss of that immunity which had been transmitted or acquired.

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THE SURGICAL VALUE OF IODINE.*

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Iodine is obtained from seaweed, in the form of mineral iodates and iodides. Every physician is familiar with its physical and chemical properties, physiological action, and therapeutic uses and advantages. The efficacy of the internal administration of iodine, especially in the form of iodides, when indicated, is well appreciated, and I could add little or nothing to what is already known in this direction. Probably physicians have equally as much knowledge of the indications for iodine in surgical conditions. But have they fully appreciated the *value* of the use of iodine in surgery? From my experience with iodine in hospital and clinical work, I have been convinced that it is an agent of high germicidal potency, one of the most valuable antiseptics in our armamentarium, and endowed with remarkable penetrating power. I have used it extensively and for a variety of conditions, and the results have been exceedingly gratifying. A number of practitioners object to using iodine freely because of its cost. But we have one form of iodine available for surgical use, *i.e.* the tincture, which is comparatively cheap; for whether we are using it full strength or well diluted, only a small quantity is required. Of course, the ideal "iodine antiseptic" is the pure iodine vapor, but as far as I am aware, no compound has yet been produced which will yield iodine vapor in any considerable amount, except iodine itself; and used in this manner, it would indeed be an expensive antiseptic. Iodoform was formerly believed to have this property, and was largely used in surgical dressings as a dusting powder and incorporated in gauze. Although iodoform contains 96 per cent. iodine, the consensus of opinion to-day seems to be that iodoform is practically valueless, except for such quantity of iodine as may be liberated and come in direct contact with the tissues, which occurs very slowly as a rule. In spite of this fact, the only four cases of iodism I have seen (iodine being present in the urine) have occurred as the result of iodoform. So are we not justified in concluding that, although the rapid absorption of iodine is the very thing we wish to promote, when this occasionally does take place, we are apt to get the full toxic effect? Aristol, a substitution compound containing 45 per cent. iodine, is another agent that has been used to a considerable extent in preference to iodoform, because it is less toxic. But its antiseptic powers are feeble, it is expensive, and the results of its employment have not been satisfactory. Iodol, nosophen, eudoxin, and many others have been similarly advocated. But why depart from our pharmacopœia unnecessarily? I have used the ordinary tincture (U. S. P.) repeatedly, and have not had a single case of iodism occur. It is imperative that we obtain a freshly prepared tincture (as the alcohol evaporates on standing), and use enough but *not too much*. Do not apply as much to mucous membranes and granulation tissues as to the unbroken skin. Used with care, except for an occasional use of iodiosyncrasy, we should never

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see even the slightest indication of iodism. I have found a watery solution of iodine, made by adding 5i of the tincture of iodine to Oii of water, very useful.

Minor Surgery.—The ordinary tincture of iodine is probably more frequently utilized as a counterirritant for localized uncomplicated inflammations than in any other class of conditions. We find it very satisfactory applied to the superimposed skin, in simple bursitis, synovitis, tenosynovitis, etc., and it is also used advantageously in similar medical conditions, such as acute pleurisy and sciatica. The skin is lightly painted with the tincture of iodine and allowed to dry. Desquamation will occur in a day or two, and we may then repeat the application if necessary. For these conditions I have frequently employed a modification of the tincture, viz., Elsberg's solution, which is a 20 per cent. solution in alcohol and ether, while the tincture is a 7 per cent. alcoholic solution. This will produce the same results as three coats of the ordinary tincture, dries rapidly, and will not soil the clothing. I have found this preparation exceedingly valuable in the treatment of lymphangitis (before the formation of pus, of course).

Every hospital interne, especially the house surgeon of a city hospital, has an almost unlimited number of wounds of all descriptions to care for during his service. In my service at the Jersey City Hospital, I had perhaps eight hundred patients with such wounds. We all know what the ordinary scalp wound looks like; laceration, hemorrhage, dirt, hair, and sometimes vermin. And even with thorough cleansing, suture, and gauze dressing (and dusting powders), we find that many of these wounds become infected, and if neglected, subsequently, the pus may undermine the whole scalp. I have made it my practice in all scalp, incised, punctured, and lacerated wounds after thorough shaving, washing with green soap and water, and otherwise procuring cleanliness as nearly as possible, to inject tincture of iodine directly into the wound, with an ordinary medicine dropper. Enough sutures are then introduced to obtain complete coaptation, and a wet gauze dressing applied. It is important that this dressing be kept wet until there is primary union. Every such wound, treated in this manner, which has had the proper after-treatment faithfully and conscientiously carried out, *has healed by primary union*. I consider this the very best method of procuring sterilization of a dirty wound. A case which has had dirty instruments, etc., used at the second or third dressing, we cannot expect to recover in this manner. And I do not include such conditions as a complete laceration of the thigh, from Poupart's ligament to the knee, where there is a great deal of contusion. Here sloughing naturally occurs, and iodine or any other such agent will not prevent it. It will, however, limit the formation of pus. In such a case, free drainage with constant hot wet dressings is a much better procedure than sutures.

I have had twelve cases of erysipelas. Each one was treated by painting the eruption and a generous border of the healthy surrounding skin with tincture of iodine, and in no case was there any extension of the erysipelatous rash. Of course, appropriate internal medication was used in conjunction.

Iodine will be found useful for stimulating sluggish granulations, such as an indolent ulcer. Apply the pure tincture directly to the granulation tissue. In the treatment of gangrenous ulcers, the direct application of tincture of iodine will limit the extension of the process, hasten sloughing, lessen discharge, and act as a deodorant.

Major Surgery.—Iodine has been used in many ways as a method of sterilization for the hands. Perhaps the most common is thorough scrubbing with green soap and water followed by immersion of the hands in a 1 per cent. watery solution of iodine and potassium iodide. Jeffries, of the New York Polyclinic, found by bacteriological laboratory experiment that this will render the hands sterile in thirty seconds. The operator may dip his hands frequently into a basin containing this solution during the course of the operation. The amount of staining of the skin is inconsiderable and may be readily removed with ammonia water. In fact, some operators use the full strength tincture in this manner. In the *Deutsche Zeitschrift für Chirurgie*, Vol. 87, Nos. 4 and 6, Heusner recommends a mixture of iodine and benzin used in this way, as being superior to all other methods. His formula is iodine 10 gm., benzin 750 gm., and paraffin 250 gm. He pours half a pint of this mixture into a porcelain dish, and scrubs his hands with it.

Tincture of iodine is an excellent agent for disinfecting the skin before an incision for laparotomy, especially in the region of the umbilicus. One application with a camel's hair brush is all that is necessary. Heusner uses his mixture, suggested above, for this purpose also.

One of the most valuable ways in which iodine has been recently used is in the preparation of "iodized catgut." Claudius of Copenhagen first devised this method. He takes the raw strands and immerses them in a 1 per cent. watery solution of iodine and potassium iodide, and allows them to remain in this solution until he wishes to use them. But if left for a considerable length of time, the catgut becomes very brittle. Alexis V. Moschcowitz of the Mt. Sinai Hospital has modified Claudius's procedure, in that he leaves the catgut in the solution for eight days only, and then keeps it in dry sterile gauze. The advantages of catgut prepared in this manner are that it is antiseptic as well as aseptic; its tensile strength and pliability are increased, and it is exceedingly cheap. Willard Bartlett further modifies this method. He suggests heating the strands in liquid albolene over a sand bath at a temperature of 320° F. for one hour, before immersion in the iodine solution. This toughens the gut very much, at the same time making it more pliable, and gives us a thoroughly satisfactory suture material.

Goelet of the New York School of Clinical Medicine uses a watery solution (one dram of the tincture to two pints of water) for irrigating the abdominal wound after closing the peritoneum, and has found it very satisfactory. My own personal experience in this respect has been somewhat limited, but I believe it to be an excellent means of securing sterilization of a laparotomy wound.

Gynecology.—I know of no other single agent as valuable as iodine in the early stages of gonorrhea in the female. To Goelet, the credit is due for introducing this method of treatment. I have followed his technique in all such cases occurring in my hospital service and private practice and the results have been brilliant. The patient empties her bladder, and a solution of iodine (one-half dram of the tincture to two pints of water) is injected directly into the urethra and bladder, allowed to remain for a minute or two, and then voided. This is repeated daily until edema of the vulva appears. The injections are now replaced by potassium permanganate douches, 1-5000. The bowels, diet, habits, etc., are to be regulated in the usual way, and Basham's mixture administered internally.

Iodine will be found very valuable incorporated in a tampon (one dram of the tincture to four ounces of glycerine) as a method of procuring pelvic counterirritation.

Subsequent to a curettage for endometritis, an intrauterine douche of the watery solution (one dram of the tincture to two pints of water) will limit oozing, contract the muscular fibers, and render the uterine cavity sterile. After a curettage for abortion, I have frequently swabbed out the uterus with the full strength tincture. Should the abortion be septic, an intrauterine iodine douche three times a day will control the septic process better than anything else that I know of.

Obstetrics.—After labor, an intrauterine iodine douche at 106° F. will act as a prophylactic against possible infection and post-partum hemorrhage. It stimulates and hastens contractions of the uterus, acts as an antiseptic, and constricts the mouths of the blood-vessels. I have used such a douche as a routine procedure, immediately after the expression of the placenta, in all my cases, and as yet have not had puerperal sepsis or post-partum hemorrhage occur in any instance. During my hospital service, there were two cases of post-partum hemorrhage admitted as such, and the intrauterine douche at 116° F. readily checked the bleeding. There were also three cases of puerperal sepsis admitted. In each one I used a tri-daily intrauterine douche, and the result was three uneventful recoveries. It is always wise to take the precaution to lubricate the adjacent skin area and buttocks with vaselin, or some other emolient, to guard against a possible excoriation of the skin by the iodine.

Genitourinary Diseases.—Tincture of iodine applied to the skin over a bubo (before the formation of pus) will produce the same effects as in any other lymphangitis. The tincture mixed with glycerin has given good results in the treatment of hydrocele. The sac is emptied of its contents, the mixture injected, and then allowed to escape. This causes considerable pain, so that it is well to use a general anesthetic.

As yet, I have had no experience with iodine as a method of treatment for gonorrhea in the male, but feel confident that in the future iodine will be found as valuable for treating this condition in the male as in the female. Sternberg (*American Journal of the Medical Sciences,* April, 1883) experimented with gonoccoci and found that iodine entirely destroyed them in a solution of 1 to 4000.

I make no claims for originality in any of the methods of using iodine enumerated in this paper, and perhaps I have omitted to mention a number of ways in which it may be satisfactorily utilized. There are many other conditions in which we may use iodine to advantage after future investigation. Why not flush out the peritoneal cavity with a weak solution of iodine, after a laparotomy for peritonitis? Would not the subcutaneous injection of iodine hasten the process of repair in a delayed-union fracture? Would not iodine be a satisfactory agent to apply to a carbolic acid burn, because of its marked antagonism to carbolic acid? My sole purpose has been to report the results of the use of iodine in my experience, and endeavor to instigate a little more interest in, and experimentation with, this agent than it has heretofore received. I do not believe that the value of iodine in surgery is as generally appreciated as it deserves, and present this paper with the hope that it may develop further research in this direction.

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CARBOLIC GANGRENE.

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Notwithstanding the fact that a great many publications have appeared in the last quarter of a century reporting cases of gangrene of fingers caused by the application of a dilute solution of carbolic acid, this drug is still dispensed freely by druggists and used extensively as an antiseptic home remedy. And not only the laity, but a great many physicians, retain the erroneous and long ago scientifically disproven impression, that carbolic acid is one of the best remedies in combating a bacterial invasion. V. Kenerson,[1] who reports a case of carbolic gangrene, says that carbolic acid is the best penetrating disinfectant in those infections that do not proceed from an open wound, as it has real penetrating power through unbroken skin, but it should never be covered with any material that will prevent evaporation and should be applied only with a light dressing.

Lucas Championnière,[2] who also reports two cases of carbolic gangrene, does not advise against the use of the remedy, but thinks that the danger of it may be minimized by dissolving the acid in glycerin instead of water or alcohol. There is no doubt that carbolic acid is a very dangerous remedy in untrained hands, no matter how dissolved or applied, and this fact cannot be emphasized too strongly or too often. I shall therefore report the two cases of carbolic acid gangrene that came under my observation lately and review the whole matter anew.

Case I.—The first patient was a young man of twenty-five years, a pianist by profession. A cat scratched the fourth finger of his left hand. Afraid of a possible infection, he went into a drug store, where a carbolic acid solution was applied, without an impermeable tissue or tight bandaging. The patient continued the same application for the next six hours, when he came to his house physician (Dr.

S. Short) complaining of an uncomfortable sensation in the finger. Dr. Short, suspecting that the sensation might be due to the carbolic acid, sent the patient to my office. On examination I found the terminal and a part of the middle phalanges of the fourth left finger completely anemic, not sensitive to touch, temperature, or pain, but found no general disease, no sugar in the urine. I applied a dry sterile dressing for twenty-four hours. On the next day the diseased part of the finger looked already wrinkled, grayish-white in color, and formation of a dry gangrene commenced. In a few days complete demarcation took place and I then exarticulated the finger in the metacarpo-phalangeal joint. The patient made an uneventful recovery. The high exarticulation was done instead of a partial amputation for cosmetic purposes. The accompanying illustration from a photograph shows well the line of demarcation and the shriveled condition of the gangrenous part of the finger.

Case II.—The second patient was a girl twenty years of age. She scratched her right index finger with a rusty nail. To prevent "blood poisoning" she bought carbolic "water" in the drug store and applied it for twenty-four hours. At the end of this time she began to get a strange numb feeling in her finger and went to her physician. The latter apparently did not recognize the condition, and ordered her to continue the carbolic application, which the patient did for the next three days and then came to see me. On examination I found the terminal phalanx of the right index finger somewhat shriveled and the skin all over the terminal and on the plantar surface of the middle phalanges perfectly dry and black. I made the diagnosis of carbolic acid gangrene, applied a dry sterile dressing and decided to wait for the appearance of a line of demarcation. When in ten days the latter still did not appear, I gradually peeled off the gangrenous part and found that it only went as deep as the cuticle, and underneath I found a new, healthy skin. It seems to happen very seldom that carbolic acid gangrene does not ocupy the whole thickness of the part involved and stops at the skin. David Wallace[3] reports such a case.

The following two cases occurred in the practice of Prof. F. C. Wood. They have never been reported, and, with his kind permission, I report them here.

Case III.—St. Luke's Dispensary, May, 1897. The patient was a large, powerful, healthy working man, who had accidentally scratched the index finger of his right hand and for about two days had noticed considerable redness, swelling, and pain. He went to a druggist and asked for some application for the finger. The druggist sold him "carbolic acid" and told him to put the carbolic on a cloth, wrap it around the finger, and leave it there. This was done and the rag was kept moist for about twenty-four hours. When he came to the clinic the rag had been removed for about twelve hours. The skin over the two terminal phalanges was black and dry, and the tissue shrunken. There was a sharp line of demarcation. There was no sensation on thrusting a needle into the tissues. The man desired to have his finger amputated so that he could return to work more quickly. This was done and primary union resulted.

Case IV.—A similar case entered the dispensary about one month later. This was a butcher who had infected his finger and had, also, applied to a druggist and obtained "carbolic acid." He used this for twenty-four hours and noticed that the pain stopped. Amputation was also necessary in this case. The conditions were identical with those previously described.

Various explanations were given to this gangrene produced by a local application of a dilute solution of carbolic acid. Kortum[4] thinks that the acid acts on the trophic or vascular nerves. Frankenburger[5] explains the formation of the gangrene by a destruction of the red and white blood corpuscles inside of the capillaries and subsequent thrombosis, stasis of circulation, and gangrene. The experiments of Levai[6] led him to dismiss both the opinions of Kortum and Frankenburger. He showed that 5 per cent. solution of carbolic acid and different other mineral acids, when applied to an extremity by a moistened compress for twenty-four hours produced a gangrene and that this gangrene is due to a direct chemical action of the acid on all parts of the tissues. "The histological examination shows that in the beginning each of the diluted chemicals applied in the form of a moist dressing produces the same effect: the epithelial layer becomes edematous and loosened." "As soon as a way has been made to the deeper layers each agent produces in a different way the same result, namely, necrosis of the living tissues."

All these theories, ingenious as they are, do not explain the fact that only in a small percentage of cases where a moist carbolic acid compress is applied does gangrene develop. They do not explain, for instance, the peculiar difference in my two cases. In the first case the carbolic acid was applied only for six hours and there developed a complete gangrene, while in the second case only a superficial gangrene of the skin took place after a continuous application of the acid for four days. Apparently in order to produce its deleterious effect the carbolic acid must meet with a certain lack of resistance either of the whole organism or only of the organ to which the acid is applied. Of course, it is impossible to tell whether the power of resistance of the tissue cells is diminished, or, as is most probably the case in Raynaud's disease and in spontaneous gangrene, the capillaries of the predisposed individual contract easily, producing subsequently ischemia, stasis of circulation, and gangrene. The latter supposition seems to coincide well with the facts that carbolic gangrene usually takes place in extremities—fingers—and always begins with a severe local anemia.

While by far not in every case where an application of a dilute solution of carbolic acid is made does a gangrene set in, the cases are sufficiently numerous, and every patient applying a carbolic compress for a trifling injury probably does not take much less chance of a gangrene than the patient taking general anesthesia does of ether death. But is carbolic acid just as indispensable as general anesthesia, or rather, is it needed at all? Lister, the brilliant discoverer of the antiseptic treatment of wounds, recommended carbolic acid, under the impression that every pathogenic germ, whether found in the air or on the surface of the body of the patient or inside of tissue cell, has to be killed by an effective germicide drug, and carbolic acid is certainly one of them. But it is a number of years since antisepsis in surgery was superseded by asepsis. We have learned that in the majority of cases the organism, through its fluids and leucocytes, is able to neutralize the pathogenic organisms invading it. The aim of the surgeon nowadays in the treatment of every wound consists in removing by mechanical cleaning the pathogenic bacteria from the skin, protecting from new invasion by an aseptic dressing and draining off well the wound secretions.

Poisonous drugs like carbolic acid only injure and diminish the vitality of the tissue cells, and the more so the greater their "penetrating" power and consequently increase and help the injurious action of the bacteria.

In a word, the laity should be taught the principles of surgical cleanliness—asepsis—instead of the notion that carbolic acid is a panacea against "blood poisoning." It is still more important that the sale of carbolic acid in whatsoever form by druggists without a physician's prescription, and its prescription by physicians for patients' own use should be restricted. It is never of much use and too frequently harmful.

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A CASE OF ECTOPIC GESTATION.

DIAGNOSIS AND OPERATION BEFORE RUPTURE.*

By WM. H. DUKEMAN, M.D.,

LOS ANGELES, CAL.

The patient, Mrs. J., age 28, called at my office on Monday, September 16, 1907, saying that on Saturday she was taken with pains in her lower abdomen which made her feel sick and that she had menstruated a little on that day and Sunday, but the flow had now ceased. The month before she had not menstruated and had then taken some pills to bring on her courses, which failed. She had taken nothing this month. The pulse and temperature were normal; there was tenderness over the left pelvic wall. From the character of the pains as she described them penetrating and radiating toward the heart, a diagnosis of probable tubal pregnancy was made from the above symptoms and the patient was advised to keep as quiet as possible, and if the pain should recur to go to bed at once and to call me without delay.

Three days later, about 4 P.M., she summoned me to come at once, saying that the pain had returned. Dr. Tyroler accompanied me. We found the patient in bed, looking anxious, and she gave us the following history:

The night before she had taken a dose of castor oil for constipation; about 4 o'clock in the morning she awoke with pain in the lower abdomen; her bowels moved twice, but the pain continued all day. She was flowing and had passed a good sized piece of membrane, which she was thoughtful enough to save. This was examined and found to be very much like deciduous membrane. I then made a digital examination, and found the os sufficiently dilated to admit the point of the index finger: there was tumefaction of the left pelvic cavity, giving the sensation on examination of a semi-solid mass; careful bimanual manipulation caused considerable pain over the area of the left pelvic cavity. The uterus was somewhat enlarged; the right pelvic cavity was normal.

The diagnosis was confirmed; the patient was informed of the nature of her case and that it would be necessary for her to be sent to the hospital at once. Her husband not being at home, she would not go to the hospital until she could see him. We then departed, cautioning her not to get out of bed for anything, to lie perfectly quiet on her back until her husband's return, which would be about 6 P.M., when he should 'phone me immediately. He did not call me up until the following morning, when he requested me to call at once, as his wife was no better.

On arriving at the house I informed the husband of the gravity of the case, and it was arranged to have the patient removed to the hospital for an operation without further delay. The ambulance was summoned and the patient arrived at the Good Samaritan Hospital about 10:30 A.M. The nature of the case was fully explained to the nurse and orders were given to prepare the patient very carefully for laparotomy and to administer only a low enema instead of the usual flushing. The pulse was 84, temperature 99.5°, and the patient was feeling fairly comfortable with the exception of a few slight pelvic pains occasionally. The operation was set for 1 P.M.

The nurse disregarded orders, which were to give only a low enema, and about half an hour before the operation gave the usual high enema, which aggravated the pelvic pains and undoubtedly started hemorrhage. However, the patient went on the table in good condition.

Operation was performed by myself, assisted by Dr. Tyroler; anesthesia by Dr. Magee. When the peritoneum was exposed it bulged up and was of a very purplish hue. On opening the peritoneum blood poured out. The opening was enlarged as speedily as possible and I immediately grasped the ovarian artery with my fingers and stopped further hemorrhage. About one pint of blood and clots was emptied from the abdominal cavity. The mass was then brought out of the pelvis and proved to be a tubal pregnancy of the middle and distal portion. I relaxed my grasp of the ovarian artery which showed that from the fimbriated extremities there was a slow hemorrhage. The uterine portion of the tube was normal, except slightly enlarged. There was no difficulty in extirpating the tubal mass. The ovary was not disturbed. The patient's condition continued good throughout the operation, and her recovery was uneventful.

She left the hospital at the end of two weeks, as she was anxious to return home with her two-year old boy; and at the end of one month after the operation she was again up and around attending to light household duties.

The patient has always enjoyed good health. I attended her in her confinement two years ago, when she gave birth to a healthy boy; the labor was normal.

This is the first and only case of ectopic gestation occurring in my twenty-five years of general practice.

In reviewing the symptoms I wish to say that my diagnosis of probable tubal pregnancy was based on the following points:

(1) The cessation of menstruation the month previous in a healthy woman; (2) the character of the pain penetrating and radiating toward the heart and the anxious manner in which the patient described the pain; (3) slight hemorrhage for a couple of days, accompanied by the above peculiar pelvic pains, which then ceased; (4) tenderness over the left pelvic wall.

*Presented to the Los Angeles County Medical Society and read by Dr. A. Tyroler, October 18, 1907.

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DESTROYING FAITH IN VACCINATION.

SOME years ago, in a letter to the MEDICAL RECORD, Dr. Beverley Robinson called attention to what he called the "chief horror of smallpox." This, he said, consisted not in the loathsome features of the disease itself, but in the way the sufferers were treated by the health authorities. They are dragged from their homes and carried by force to the pest-house, enduring not only the danger of exposure during the journey, but also much distress, and not they only but those who are nearest to them. Why are they so abused? Not for their own good, but assumedly for the protection of those about them. Yet if there is anything certain in medicine it is that these others can be protected absolutely by vaccination. Which is the easier and the more humane, to take the sick man from his home and isolate him in a pest-house, or to isolate him in his own home and vaccinate all the others in the house and who may be exposed to contagion? It is an unjust and a silly practice, and one which is harmful in every way, not only not protecting those who have already been exposed, but subjecting others to the risk of contagion during the transport of the sick. It is merely a concession to a popular prejudice, and its continuance serves only to increase this prejudice and to weaken faith in the efficacy of vaccination.

The duty of the health authorities is not only to safeguard the public, but to instruct the people in matters of hygiene. The Health Department of Chicago recognizes this duty, and meets it by issuing each week a Bulletin, containing in addition to the regular health reports, various items of information regarding the diseases prevailing for the time being and little essays instructing the public as to the measures best adapted to the prevention of these diseases. Several of the State Boards of Health also publish matter of great importance in an educational sense. In the Bulletin of the Illinois State Board of Health for November and in that of the New York State Board of Health for the same month there is much of value regarding smallpox and the efficacy of vaccination. The Illinois Bulletin in particular constitutes a tract that ought to do a vast deal of good in a missionary way. It prints the second edition of a circular issued some time ago, of which 20,000 copies were distributed, showing by a number of illustrations the fearful disfigurement following an attack of smallpox in one not protected by vaccination, and even more strikingly demonstrating the absolute protection afforded infants by this simple measure. In addition to the pictures, reproduced from Welch and Schamberg's book on "Acute Contagious Diseases," there is a mass of statistical material showing the reduction in smallpox mortality in various countries following the introduction of vaccination. The New York Bulletin shows the value of compulsory vaccination and notes that, in those countries where this useful law is in force, smallpox is regarded with indifference by the people. In Japan, for example, where compulsory vaccination has been enforced since 1886, there is no provision made in any of the cities for smallpox hospitals. When a case develops the patient is allowed to stay at home or is taken to a general hospital for treatment. The disease has never been known to spread from one of these patients either in or out of hospital. The same is practically true of Germany, where vaccination and revaccination are general and no other precautions are taken to prevent the spread of the disease. In many States of this country vaccination in children is practically compulsory, as an unvaccinated child is by law prevented from attending school. As the Federal law refuses admission to unvaccinated aliens, if the school law were in existence and enforced in all the States it would be a matter of only a few years when the entire population would be protected by at least one vaccination. Unless revaccination were also practised there might be cases of varioloid and even occasionally of fatal smallpox, but there would be no danger of an epidemic, and the necessity of pest-houses, assuming that such necessity exists at present, would be done away with.

The Illinois and New York Boards of Health, as well as some other State Boards, are doing a good work in teaching the public the benefits of vaccination, and it is a great pity that the practice of some municipal boards, in trusting to imprisonment of the sick instead of protection of the well, is keeping alive the fear of the disease and weakening the belief in the efficacy of vaccination. If health officers proved their faith in vaccination by their works, and maintained smallpox hospitals for the care of the homeless sick only, the popular belief in the protective efficacy of vaccination, which at present is only half-hearted, would be immeasurably strengthened.

PHIMOSIS AND CIRCUMCISION IN INFANTS.

PHIMOSIS is nearly always present at birth and is due to a small preputial orifice as well as to adhesions between the glans and prepuce. The glans, in growing and during the erections which occur with difficult defecation in infants, gradually dilates the preputial orifice and breaks up the adhesions between glans and prepuce, a process which is usually not complete until the eighth year. In other words, a certain degree of phimosis is physiological in early childhood. Many reflex phenomena, including most of the functional diseases of childhood, have been attributed to it, and circumcision has been recommended for their cure. That the symptoms are really not caused, at least not always caused, by the phimosis is proved by the fact that in at least one-half the cases they are not relieved. In a plea for fewer uncalled-for circum-

cisions, appearing in the *Correspondenz-Blatt für Schweizer Aerzte* of December 1, 1907, G. Rheiner mentions a few of the indications and contraindications for the operation in early childhood. He considers a phimosis pathological only when it acts as a mechanical obstacle in urination. The urine is passed in a thin stream, or only a drop at a time, the space between glans and prepuce balloons out, the urine decomposes in this space, and is thus liable to cause balanitis. The straining at urination is liable to be followed by hernia or prolapsus ani, the balanitis incites to masturbation. These patients of course require circumcision if the prepuce cannot be retracted after any adhesion between it and the glans have been broken up. On the other hand, there are patients who have difficulty in urinating which is attributed to a phimosis though it is really due to other causes. Thus in cystitis and balanitis the infected urine or purulent discharge will cause an inflammation of the prepuce which renders urination painful, and this may lead to voluntary retention while there is no mechanical hindrance to the flow of urine. In such a condition circumcision, which is often advised, is really strongly contraindicated, as the wound readily becomes infected, thus aggravating the symptoms and possibly causing sepsis. In patients in whom small ulcers follow herpes preputialis similar urinary symptoms may set in, but here, too, a circumcision is contraindicated. Rheiner also draws attention to conditions which are often attributed to phimosis and in which a circumcision will do no good, though it may not cause any harm. Thus it is quite natural to attribute urinary symptoms due to a stricture (congenital or after an early urethritis) to phimosis. A more frequent source of error is the condition in which urine is passed in small quantities, its voidance being accompanied by bearing down pains. This condition exists in children troubled with constipation due to faulty diet or to fissures about the anus, and the liability to error in diagnosis is increased by the erection reflexly caused by the constipation, for during erection the small preputial orifice is more noticeable. It can readily be understood that a circumcision will not cure these patients.

In many children the physiological phimosis seldom causes any trouble, and if it does circumcision is not always necessary as one can frequently relieve the condition by retracting the prepuce after breaking up the adhesions between it and the glans. The best treatment lies in prophylaxis. We can avoid all future trouble by retracting the prepuce over the glans immediately after birth. This usually requires slight stretching of the preputial orifice, most easily accomplished by inserting a closed scissor artery forceps into the orifice and then separating the blades. Thus sufficient dilatation is brought about without causing any bleeding, after which the adhesions between glans and prepuce are broken up and the latter is easily retracted. After the removal of any smegma present, a drop of oil is placed on the glans and the skin is drawn forward. The skin should then be drawn over the glans daily until there is no longer a disposition to a recurrence of the adhesions. This little maneuver is probably not practised by many obstetricians, but it cannot be too strongly recommended, as it does no harm and may prevent much trouble.

THE WIDAL REACTION IN JAUNDICED PATIENTS.

In the past few years the reliability of the Widal reaction has frequently been questioned. Cases have been reported in which there were no signs of typhoid fever, but in which the reaction was positive in low dilutions, for example in Weil's disease, in infectious cholangitis, and in cases of fever with jaundice. Then Langstein, Joachim, and others obtained a positive Widal in higher dilutions than one in twenty, in patients in whom typhoid fever was excluded, but who suffered from diseases of the liver or gall-bladder with icterus and fever. It was suggested that the icteric serum contained substances which caused the agglutination and that these were the bile constituents, taurocholic and glycocholic acid; in fact, agglutination was brought about with the serum of an animal which had previously been injected with taurocholic acid. On the other hand, Königstein and others reported cases in which icteric blood serum had no specific action on typhoid bacilli, from which they concluded that the positive results observed by others were not due to the bile constituents but to some other agglutinins.

These different opinions led Kentzler (*Wiener klinische Wochenschrift*, October 31, 1907) to study the action of icteric serum on the typhoid, paratyphoid (A and B), and colon bacilli. He used the serum of thirty patients, twelve suffering from cholelithiasis, five from catarrhal jaundice, four from carcinoma hepatis, three from heart disease with jaundice, three from hepatitis with jaundice, one from common bile-duct obstruction, and one from Banti's disease; in none of them was there any previous history of typhoid fever. The serum of each patient was used in fifteen different dilutions, ranging from one in two to one in thirty. With the typhoid bacilli he observed a positive Widal in all the patients when low dilutions were used and a negative reaction when dilutions higher than one in twenty were employed; in only six patients was there a positive reaction with a dilution of one in twenty. With paratyphoid A bacilli no agglutination was observed with dilutions higher than one in eighteen, and only twice was the agglutination observed with dilutions higher than one in ten. With paratyphoid B bacilli agglutination was observed once with a dilution higher than one in twenty, but the same patient's serum caused no agglutination when it was diluted forty times. The coli bacilli were never agglutinated when the serum was used in dilutions higher than one in twenty, and were agglutinated by the serum of only six out of the thirty patients when it was diluted more than ten times. As control tests the serum of twelve normal individuals was used; in dilutions of one in fourteen the serum of each agglutinated the various bacilli, while agglutination was absent when higher dilutions were used.

Kentzler's observations show that sera of icteric patients do not contain specific typhoid agglutinins or agglutinins for the bacilli related to the typhoid germs. We may also conclude from his findings that when a patient's serum diluted twenty times agglutinates typhoid bacilli the patient probably has or has had typhoid fever, while if it causes agglutination in dilutions of one in forty the patient surely has or has had typhoid fever.

The Edema of Pregnancy.

Edema is a not very infrequent complication of pregnancy but in many instances its nature is rather difficult to understand. While the swelling of the lower extremities that is so common may readily be explained by assuming that the pressure of the enlarging uterus interferes with the return flow of the blood through the venous trunks the case is different when the condition involves other portions of the body or becomes general. It then seems most reasonable to regard it as the expression of a toxemia or symptom of renal inadequacy, though occasionally it is present without any evidence of gross kidney lesion. Birnbaum has found that the simple edema of pregnancy differs from that of nephritis or of the albuminuria of pregnancy in that it is not accompanied by a deficiency in chloride excretion, and he draws the conclusion that it is not the effect of a renal disorder but depends on the presence in the blood of some toxic substance. As opposed to this view is the statement of Cramer (*Münchener medizinische Wochenschrift,* December 31, 1907) that great benefit is to be derived in such cases from the rigid enforcement of a salt-free diet of the kind used so successfully in combating the fluid accumulations of nephritis. He has found that when the patients take only food prepared entirely without salt and are not allowed meat, milk, or other articles naturally rich in salts, the edema promptly subsides, only to reappear again if the dietary rule is broken. The regimen has been enforced for many weeks up to the time of delivery without any apparent prejudice to the development of the fetus. Even though the effect of this measure is difficult to explain satisfactorily it is so simple in execution and its results in adding to the patient's comfort and possibly in reducing the danger of eclampsia are so desirable that it would seem worthy of trial.

Gastrointestinal Carcinoma.

If a surgeon were asked to enumerate some of the conditions in which his art had made the greatest advances of recent years he would probably include in the number the malignant new growths of the stomach and intestine. It is also likely that much of the progress made would be attributed to the fact that it is now possible to diagnosticate these tumors earlier and that the patients reach the operator sooner than was formerly the case. While these statements are hardly subject to controversy, Boas, whose experience in this field is, as well known, very wide, says (*Deutsche medizinische Wochenschrift*, January 2, 1908) that the matter of the benefits of early operation is not quite as simple as at first sight it appears. Actually there are great variations in the malignancy of gastrointestinal neoplasms, so that in a case in which the disease has progressed so slowly that a considerable length of time has elapsed before a positive diagnosis can be made the operative prognosis is really more favorable than if the cancer had been of so actively growing a type as to indicate operation within a few weeks or months of the first onset of symptoms. In support of this contention he quotes the statistics of several operators, for example those of Makkas who found that of seventeen patients who had remained free from recurrence for three years, only three had been operated on within two to three and a half months of the first symptoms, while in the other fourteen cases symptoms had been present for from five months to two years. Hoffman of the Breslau clinic has stated that the optimum for resection is found at a period between six and twelve months after the first onset of symptoms, and Nordmann of Körte's clinic, after a very careful study of recorded cases and a comparision of the results of operations performed at varying stages in the course of the disease, has come to practically the same conclusion. According to Boas these circumstances do not indicate that any reduction of surgical activity is desirable but rather that the mere fact that the patient reaches the operator late is not of itself a contraindication to laparotomy, and they furthermore emphasize the necessity for greater efforts in the early diagnosis of the doubtful cases and in the careful selection of those to be subjected to exploratory operation.

An Improvement in Blood-culture Technique.

Among the laboratory aids to diagnosis none is, at certain times and under certain circumstances, of greater value than the bacterioscopic examination of blood-cultures. At the same time, none is perhaps more difficult and more troublesome to carry out properly. In order to carry out the examination satisfactorily several cultures must be made in different media, and this calls for a display of apparatus that is often alarming to the patient as well as inconvenient to the bacteriologist. The rapid coagulation of the blood not only necessitates quick work, but also at times retards or prevents the growth of the bacteria through its property of increasing the bactericidal action of the serum. A method of preventing coagulation is, therefore, a desideratum in blood-culture technique. Albert A. Epstein, writing in the *American Journal of the Medical Sciences* for September, suggests for this purpose a solution of 2 parts of ammonium oxalate and 6 parts of sodium chloride in 1,000 parts of distilled water. This solution is practically isotonic with blood, and exerts no restraining influence on bacterial growth. To the blood drawn from the vein an equal amount of this sterilized solution is added, and the two are thoroughly mixed. The test-tube can then be taken to the laboratory, where the cultures can be prepared in any way desired. Epstein has compared cultures made from this mixture with controls made from undiluted blood, and has found the results identical. In addition to the ease with which blood-cultures can be taken by this method, he says, it offers other advantages. The oxalated blood may be centrifugalized, and spreads may be made from the sediment and examined microscopically for bacteria. In many cases in which there is an intense infection an early diagnosis can be made by means of this technique. The supernatant fluid which remains after the centrifugalization has been completed can be employed for the determination of the opsonic index of the blood.

Telephone Otitis.

No one who has witnessed the nerve racking activities of the professional telephone operator can wonder at the occasional occurrence among these workers of nervous or other troubles that are attributable to their employment. Indeed it is rather a matter of astonishment that this result does not more often follow, and it is even stated that the functional capacity of the ear is improved rather than impaired. A somewhat unusual instance of disease referable to the habitual use of the telephone is reported by Hamm (*Berliner klinische Wochenschrift,* December 30, 1907) in which an inflammatory process of the external ear was caused. The patient was a postoffice official who was obliged to transact a large amount of business daily by means of the telephone. He came to the author with the statement that for over a year he had been suffering from increasing pain and tenderness and deafness in the left ear which had compelled him to use the right in telephoning, until now this was also affected in the same way. The diagnosis of fetid, diffuse external otitis was made and it was found that improvement promptly attended non use of the telephone only to be followed by a relapse when an attempt was made to resume the regular routine. The author believes that the malady was caused by the continued action of electrical currents escaping from the receiver when held to the ear, and quotes the opinion of Professor Peukert, a technologist to whom the case was submitted, to the effect that measurements show that the act of telephoning is regularly accompanied by the passage into the body of currents which by cumulative action are capable of inducing organic lesions.

Treatment of Hay Fever.

The treatment of this disease may be divided into that during the attack and that in the interval. In the interval pathological nasal conditions may be operated upon or the sensitive areas of mucous membrane may be destroyed; and, since in many instances a form of chronic neurosis exists, remedies which improve the stability of the nervous system may be employed. During the attack the patient should go to a climate free from the source of irritation, but, as this is often impossible, palliative remedies are employed at home which tend to render the mucosa less sensitive to the irritant. Most of these are at best uncertain and but partially successful, and many are notoriously useless. As is always the case with a malady so difficult to cure, the multitude of methods which have been suggested gives sufficient evidence of failure, but every now and then some new form of treatment is described which has benefited some one. In the *Correspondenz-Blatt für Schweizer Aerzte* for August 1, 1907, Hürlimann refers to two patients on whom he successfully tried dry, hot air. A basket containing six electric light lamps was placed over the patient's face, while his forehead and eyes were covered with a cold, damp cloth; a woolen cloth was thrown over the basket in order to retain the heat, an opening being made on one side to permit fresh air to enter. The patients were told to breathe in through the nose and to expire the air through the mouth. After thirty inspirations the basket was removed, though Hürlimann believes the number could be increased without any discomfort to the patient. This method is simple enough and so readily carried out as to be deserving of trial by sufferers.

News of the Week.

Physicians for the Canal Zone.—The United States Civil Service Commission announces an examination on February 19-20, 1908, to secure eligibles from which to make certification to fill vacancies as they may occur in the position of physician, at $150 per month, in the Panama Canal Service. It is probable that about fifteen appointments will be made, this estimate being based upon the number of appointments made during the past year. Applicants must be men between the ages of twenty and forty-five years, and must indicate in their applications that they are citizens of the United States, graduates of recognized medical schools, and have had at least one year's experience as interne in a general hospital. Persons lacking the above qualifications will not be admitted to the examination. Special credit will be given to physicians who show that they have been for more than a year members of the house staff of large metropolitan hospitals. Persons appointed to positions under the Isthmian Canal Commission will be expected to proceed promptly to the Isthmus. Persons examined for positions under that Commission will not be eligible, as the result of such examination, to positions in the United States and Philippine service. Applicants should apply to the United States Civil Service Commission, Washington, D. C., for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington prior to the hour of closing business on February 10, 1908.

Civil Service Examinations.—The State Civil Service Commission will hold examinations February 15, 1908, for the following positions: Physician, State Hospitals, $900 and maintenance; Trained Nurse, State Institutions, $420 to $600 and maintenance. The last day for filing applications for these examinations is February 8. Full information and application forms may be obtained by addressing Charles S. Fowler, the Chief Examiner of the Commission at Albany.

Anti-tuberculosis Headquarters in Albany.—Homer Folks, Secretary of the State Charities Aid Association, with a force of investigators and clerical assistants has opened permanent headquarters in Albany for the promotion of a campaign against tuberculosis in the fifty-seven counties outside of Greater New York. The establishment of this bureau has been made possible by the donation of a large sum by a benefactor whose name is to be withheld as one of the conditions of the gift.

Physicians to Instruct Lawyers.—Medical instruction is to be given trial attorneys in Chicago, connected with the office of Corporation Counsel Brundage, in order to protect the city from damage judgments and personal injury cases.

Illinois Cocaine Bill Now a Law.—Gov. Deneen has signed what is known as the cocaine bill, which was passed by the present session of the Legislature. The measure is intended to regulate the sale of cocaine, and heavy penalties are provided for violation.

Diseases of Occupation.—Gov. Deneen, of Illinois appointed the following commission, authorized by the General Assembly to investigate the diseases of occupation in the State and report to the next General Assembly: Dr. L. Hektoen, of Chicago; Dr. Alice Hamilton, of Hull House, Chicago; Dr. George W. Webster, of Chicago, President of

the State Board of Health, and the Secretary of the State Board of Health, Dr. James A. Egan.

Pure Food Commission.—The President has decided to appoint a Pure Food Commission of chemists from various universities, to consider cases of dispute against the rulings of the Department of Agriculture.

Charitable Bequests.—By the will of the late Alexander Crawford, of Philadelphia, the sum of $2,300 is bequeathed to the Northern Dispensary, and $1,000 to the Sheltering Arms. In the event of a nephew, who is the principal beneficiary under the will, leaving no issue, the Episcopal Hospital is to receive $10,000 for the endowment of a free bed as a memorial to the testator's wife, the Northern Dispensary an additional $3,000 and the Sheltering Arms an additional $2,000.

Extreme Heat in Australia.—Despatches from Melbourne, state that a heat wave of unusual intensity is causing great suffering throughout Victoria. The theaters have been compelled to close, the people are sleeping out of doors and thirty-two deaths from sunstroke have been reported in a few days.

Measles in Pennsylvania.—According to the record of the State Department of Health during 1906, there were 1,463 deaths from this disease in Pennsylvania, 1,240 of the number being of children under five years of age. In December alone 2,307 cases were reported.

Ambulance Accident.—An ambulance of the Brooklyn Hospital was struck by a trolley car at Lawrence and Willoughby Streets on Sunday evening. The ambulance was wrecked and the driver and surgeon were thrown to the ground, the former receiving internal injuries and fractures of several ribs, while the latter, Dr. Albert F. Anderson, fractured his shoulder and several ribs.

Summer Diarrhea of Infants.—Dr. James L. Walsh, of 1719 Third Street, Bay City, Mich., desires to get reports of cases in which physicians have used the method of infant feeding, suggested in his article published in the MEDICAL RECORD, September 15, 1906.

Harvey Society Lectures.—The fifth lecture in the Harvey Society course will be delivered by Prof. George W. Crile, of the Western Reserve University, at the Academy of Medicine, on Saturday, January 25, at 8:30 P.M. Subject: "Shock." All interested are cordially invited to be present.

Carnegie Institute.—At a meeting of the Carnegie Institute, Pittsburg, January 2, the questions of reducing the period of collegiate and medical study from eight years to six, and of promoting reciprocity in State medical examinations were discussed.

Opium in China.—The Chinese government has extended by another three months the period during which all officials must abandon the opium habit under penalty of losing office and other punishments.

Banquet in Honor of Dr. Lucy Waite.—A banquet in honor of Dr. Lucy Waite, of Chicago, was held in Denver, Col., on January 1.

Woman Ambulance Surgeon in Brooklyn.—Dr. Mary M. Crawford, of the Williamsburg Hospital, is said to be the first woman to have occupied the post of ambulance surgeon in Brooklyn.

Dr. J. C. Biddle has resigned as surgeon in chief and superintendent of the State Miners' Hospital, at Fountain Springs, Pa.

A Memorial to Brehmer.—At the Twenty-ninth Balneological Congress, which convenes in Breslau on March 5, a monument in honor of Herman Brehmer, a pioneer in the sanatorium treatment of tuberculosis is to be unveiled.

Dr. Theobald Smith, professor of comparative pathology at Harvard University, has been given the degree of LL.D., by the University of Chicago.

A New Nose and Throat Journal.—Under the title *Beitrage zur Anatomie, Physiologie, Pathologie und Therapie des Ohres, der Nase und des Kehlkopfes,* a new journal devoted to diseases of the ear, nose and throat, is to be published by the firm of S. Karger, Berlin, Karlstrasse 15, under the editorship of Professor A. Passow and Prof. K. L. Schaefer.

Honors for the Late Dr. Senn.—Dr. Senn, just before his death, on January 2, had received the Order of Merit of the Japanese Society of the Red Cross, and had also been elected an honorary member of the Royal Medical Society of Budapest.

The Hospital Conference of the City of New York.—The next regular meeting will be held on Wednesday, January 29, at 8:15 P.M., at the Academy of Medicine. The program will include a consideration of the report on the future hospital needs of Greater New York, presented for endorsement by the hospital committee of the State Charities Aid Association, and the discussion of experiences in the purchase of food supplies.

Freemont County (Col.) Medical Society.—At its meeting, held in Florence, on January 8, this society elected the following officers: *President,* Dr. C. H. Graves, of Canon City; *Vice-President,* Dr. W. R. Williamson, of Rockvale; *Secretary-Treasurer,* Dr. R. C. Adkinson, of Florence.

Gage County (Neb.) Medical Society.—This society held its fifth annual meeting in Beatrice, on January 9, and elected the following officers: *President,* Dr. F. E. Osborne; *Vice-President,* Dr. C. S. Curry; *Secretary-Treasurer,* Dr. J. I. McGirr.

Washington County (R. I.) Medical Society.—At the meeting of this society, held in Providence on January 10, officers were elected as follows: *President,* Dr. F. I. Payne; *Vice-Presidents,* Dr. M. H. Scanlon and Dr. Horace Wilcox; *Secretary-Treasurer,* Dr. J. H. Morgan.

Tuscaloosa County (Ala.) Medical Society.—The election of officers of this society at the annual meeting, held in Tuscaloosa, on January 8, resulted as follows: *President,* Dr. W. G. Sommerville; *Vice-President,* Dr. J. A. Lanford; *Secretary-Treasurer,* Dr. J. H. Ware.

Rhode Island Homeopathic Medical Society.—This society held its annual meeting in Providence on January 10, and elected the following officers: *President,* Dr. George F. Allison; *Vice-President,* Dr. Arthur H. Wood; *Secretary,* Dr. Jeannie O. Arnold; *Treasurer,* Dr. Dudley A. Williams; all of Providence.

Morgan County (Ala.) Medical Society.—At a meeting of this society, held in Decatur on January 4, the following officers were elected: *President,* Dr. C. S. Shenault; *Vice-President,* Dr. H. C. McRee, of Hartselle; *Secretary-Treasurer,* Dr. J. L. Gunter.

Phillips County (Ark.) Medical Society.—At the meeting of this society, held in Helena, on

January 10, officers were elected as follows: *President,* Dr. M. Fink; *Vice-President,* Dr. J. W. Bean; *Secretary and Treasurer,* Dr. W. C. King.

Annex to St. Joseph's Deaf and Dumb Institute.—Work will be begun next month on an annex to be erected at a cost of $250,000, by St. Joseph's Deaf and Dumb Institute on its plot at the northwest corner of 188th Street and Bathgate Avenue, The Bronx.

Morgan County, Illinois, Medical Society Library.—This society has established at Jacksonville, a medical library for the use of its members, comprising over 1,700 volumes and provided with current files of the most important medical periodicals in the English language.

Philadelphia Medical Club.—At the annual meeting, held January 18, the following officers were elected for the ensuing year: *President,* Dr. George McClellan; *Vice-President,* Dr. Wharton Sinkler, Dr. James B. Walker; *Secretary,* Dr. J. Gurney Taylor; *Treasurer,* Dr. Lewis H. Adler, Jr.; *Governor,* Dr. Oscar H. Allis; *Additional Directors,* Doctors M. B. Hartzell, Walter L. Pyle, H. H. Whitcomb, Albert M. Eaton, Wilmer R. Krusen.

Philadelphia County Medical Society.—At a stated meeting, held January 15, the following were elected officers for the ensuing year: *President,* Dr. Albert M. Eaton; *Vice-presidents,* Dr. Henry W. Cattell, Dr. Frank C. Hammond, Dr. William Evans, Dr. Robert L. Pitfield, Dr. Henry G. Godfrey, Dr. John B. Turner; *Secretary,* Dr. William S. Wray; *Assistant Secretary,* Dr. Alexander R. Craig; *Treasurer,* Dr. Collier L. Bower; *Censor,* Dr. William M. Welch; *District Censor,* Dr. M. B. Hartzell.

Hartford (Conn.) Medical Society.—At the meeting of this society held on January 6 the election of officers resulted as follows: *President,* Dr. Frederick S. Crossfield; *Vice-President,* Dr. P. H. Ingalls; *Secretary,* Dr. W. H. Van Strander; *Assistant Secretary,* Dr. Orin R. Witer; *Treasurer,* Dr. George K. Welch; *Librarian,* Dr. Walter R. Steiner.

Meeting of Osteopathic Society.—The first midyear meeting of the New York Osteopathic Society was held at the Hotel Knickerbocker, New York City, on January 18.

Aiken County (S. C.) Medical Society.—At the meeting of this society, held in Aiken on January 8, the following officers were elected: *President,* Dr. A. Holsonbake, of Graniteville; *Vice-President,* Dr. C. A. Teague, of Graniteville; *Secretary and Treasurer,* Dr. Harry H. Wyman.

Obituary Notes.—Dr. Edward Buncombe Goelet, of Saluda, N. C., died suddenly on January 19, at the residence of his daughter in Brooklyn, N. Y. The cause of his death was acute cardiac dilatation. He was a brother of Dr. Augustin H. Goelet, of this city. Dr. Goelet was born in 1843 and was a graduate of Tulane University. He was a member of the Buncombe County, N. C., Medical Society, of the North Carolina Medical Society, and of the American Medical Association. He was also a prominent Mason, connected with the lodge at Asheville, N. C.

Dr. Joaquin Morill, of Poughkeepsie, N. Y., died of tuberculosis on January 14, at the age of sixty-seven years. He was born in Havana and was graduated from the University of Havana in 1860. He came to this country in 1861 and served as surgeon in the Civil War, being captured and confined for a long time in Libby Prison. Since 1874 he lived in Poughkeepsie.

Dr. Charles M. Klock, of St. Johnsville, N. Y., died on January 17 at the age of fifty years. He was a native of St. Johnsville and was graduated from the New York University Medical School in 1876.

Dr. Joseph Coffey, of this city, died suddenly of heart disease on January 17, at the age of forty-seven years. He was born in England, and at one time had been the physician to the Tombs Prison.

Dr. Adrian T. Woodward, of Brandon, Vt., died on January 9, at the age of eighty-nine years. Dr. Woodward was born in Castleton and was the son of Dr. Theodore Woodward, who was one of the founders of the Castleton Medical College. He was graduated in medicine from that institution in 1847 and began practice in Whitehall, N. Y. In 1851 he returned to Castleton and nine years later moved to Brandon. He served through the Civil War as surgeon of the 14th Vermont Volunteers and later held a position on the faculty of the medical department of the University of Vermont, resigning in 1890 on account of failing health. He had held the presidency of the Vermont State Medical Society and of the Rutland County Medical Society.

Dr. J. P. Gale, of Berkeley, Cal., died suddenly of heart disease on January 4, at the age of fifty-four years. He was a native of Missouri but had practised for nineteen years in Arbuckle, Cal., before removing to Berkeley a few months ago.

Dr. A. Curtiss, of Big Rapids, Mich., died on January 10 of apoplexy, at the age of sixty-four years. Dr. Curtiss was a veteran of the Civil War and came to Big Rapids in 1882.

Dr. Charles H. Taylor, of South Bend, Ind., died of pneumonia on January 8, at the age of thirty-nine years. He was a graduate of Indiana University and Rush Medical College.

Dr. Stephen H. Murphy, of Chelsea, Mass., died on January 13, at the age of thirty-five years. He was born in Salem and was graduated from Boston College and the Harvard Medical School.

Dr. Frederick S. Thomas, of Charleston, W. Va., died of pneumonia on January 7, at the age of fifty-seven years. Dr. Thomas was born near Charleston, and in 1880 was graduated from the medical department of the University of Maryland. He practised for a time in Malden, W. Va., and in 1884 removed to Charleston.

Dr. Thomas H. Craven, of Canon City, Col., died on January 3, at the age of seventy years. He was born in Missouri, and after serving in the Civil War settled in Gilpin County, Col., removing to Canon City in 1869.

Dr. Jared Y. Dale, died at Lemont, Pa., of paralysis, on January 14, at the age of sixty-six years. He was graduated from the medical department of the University of Pennsylvania in the class of 1863. He was secretary of the Center County Medical Society.

Dr. Frank R. Brunner, of Eshbach, Pa., was burned to death in the disastrous fire of Boyertown, on January 13. He was seventy-three years old and was graduated from Jefferson Medical College in the class of 1861. He was a member of the Pennsylvania Senate in 1885.

Dr. Emil Maurer, died at Philadelphia on January 17, at the age of forty-one years. He was graduated from the Medico-Chirurgical College of Philadelphia in the class of 1898.

Correspondence.

THE ANTIVIVISECTION BILL.

To the Editor of the Medical Record:

Sir:—On April 8, 1907, the president of the Medical Society of the State of New York appointed twenty four members thereof to be a "Committee on Experimental Medicine," in view of proposed legislation calculated to injure the progress of medicine by restricting experimentation. As agitation in this direction has recently been renewed, in a very plausible form, the undersigned have been instructed by the said committee to send you the following copy of a preamble and resolution adopted at a meeting held in New York City, on January 15, 1908, and respectfully to request the publication thereof in the Medical Record:

Whereas, In the State of New York a petition is being widely circulated among medical men for signature in favor of a proposed bill entitled "An act to prevent cruelty by regulating experiments on living animals;" and

Whereas, The said bill contains in its provisions conditions which would probably seriously impair the progress of scientific medicine,

Resolved, That the Committee on Experimental Medicine of the Medical Society of the State of New York earnestly requests the members of the medical profession to refrain from signing the aforesaid petition, and urges any who may have signed the same by inadvertence to withdraw their signatures.

The present laws of this State relating to this subject have long proved adequate and satisfactory.

Joseph D. Bryant, M.D., Chairman
John G. Curtis, M.D., Secretary.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HEALTH OF LONDON—ROYAL SOCIETY OF MEDICINE SECTIONS—CLINICAL EXHIBITS—GASTRECTOMY, A COMPLETE CASE—CHLOECYSTECTOMY—OBITUARY, SIR A. GARROD.

London, January 3, 1908.

The report of the Medical Officer of Health for the county of London (Sir S. F. Murphy) for 1906 has just been issued. The death rate remained at 15.1 per 1,000, as in 1905, and is the lowest recorded up to then. The marriage rate was 17.1, not much above the previous year, when the lowest was recorded. The birth rate (26.5) was the lowest ever recorded. The death rate from epidemic diseases was 1.93 per 1,000 persons living, a little above the previous year's rate. Diphtheria, scarlet fever, and measles showed a slight increase, enteric fever a decrease.

The control of tuberculosis is discussed at length by the Medical Officer of Health, the question of putting in operation the recent act being under the consideration of the Public Health Committee. With reference to the medical inspection of school children, there is raised a question as to whether it is of much benefit unless treatment be superadded, and we are told that sooner or later school clinics will have to be established for the commonest disorders, such as eye, ear, and skin troubles.

The clinical section of the Royal Society of Medicine has had an exhibition of cases of a various and interesting kind. They were, however, too numerous to catalogue in a letter and I will content myself with mentioning some. There was one with a large ulcer on each leg, dressed daily for thirty years with carbolic oil (1 in 20). Six years ago the ears and whites of eyes began to turn black, and two years ago the urine to be dark. The skin of face and exposed parts became dusky. By rest in bed the ulcers diminished in size and the staining did not increase, though the dressing was continued. This was said to be the second case in England of ochronosis, as described by Bostvoen.

A case of splenic polycythemia, presenting in an unusual degree the three features of the disease, was shown by Prof. Osler.

Mr. Openshaw showed a case of traumatic dislocation of the hip with fracture of the femor of thirteen months' duration which he had reduced by manipulation. The actual shortening on admission was 3 3-4 inches. This was reduced to 1 1-2, due to overlapping of the fragments of the femor.

Dr. Essex Wynter showed a case of methemoglobinemia of twelve years duration in a woman of forty-five. It was at first thought to be Addison's disease. She had general yellowish pallor, with a lilac tinge of mucous membranes, weakness, constipation, and occasional vomiting. Temperature was 100 F. Pulse 74 to 96. A pulmonary systolic brut was noticed. There was some discussion on this case and a committee was appointed to report on it.

Dr. Wynter also showed a girl of fifteen months with amyotonia (congenital). The flabbiness of muscles and freedom of joint movements were remarkable. The toes could be made to touch the front of the leg or the fingers the back of the forearm, and the legs could be flexed to the chin. The muscles did not contract on strong Faradism and moderate currents did not seem to be painful.

Another case brought forward by Dr. Wynter was of ascites cured by a novel plan, viz., drainage into the subcutaneous tissue outside the abdomen so as to obviate repeated tapping and yet let the patient get about. The operation was done by Mr. Sampson Handley on September 23, and by November 20 there was no fluid in the abdomen and the patient has walked about since. The incision was made as for femoral hernia, and with one finger in the abdominal cavity a process of peritoneum drawn down, split, and the edges stitched right and left to maintain the opening. There was a little oozing from a stitch puncture in the thigh for about three weeks, but this showed the communication remained open. No hernia followed and no edema of the thigh, the girth of which was rather less than that of its fellow.

In the surgical section, Mr. B. G. A. Moynihan of Leeds related his second case of complete gastrectomy, and brought the patient, who seemed to be in good health and said he could eat almost anything now, but must eat slowly. He was said to have gained two stones in weight since the operation, on May 24 last. The man is forty-three years old, and two years ago first began to suffer from pain after his food, which was relieved by vomiting, until he again ate something. Dieting, lavage, and other treatment helped him for a time; but he noticed that the pain came on sooner after meals and he lost weight, so that when admitted to the infirmary he was greatly emaciated and could only swallow fluids, and these by teaspoonfuls. The stomach was washed out, but pain and distress came on as soon as about four ounces of fluid was introduced. It was soon returned clear, once with a little blood and several times some bile. Only about two-thirds of the amount introduced returned. A stomach tube passed seventeen inches easily, but no further. Inflation produced a puffy swelling the size of a billiard ball in the left upper half of the epigastrium just below the costal margin, definitely circumscribed, and no other swelling. The diagnosis thus pointed to was probably hour-glass stomach from cicatricial contraction of an ulcer on the lower curvature and close to the cardia. The possibility of its being an example of "leather-bottle stomach" (linitis plastica of Brinton) was pointed out to the class, and at the operation this was found to be the case. The organ felt solid, with thick walls and an insignificant cavity, larger at the cardiac end and something like a Florence flask. Gastrotomy was obviously impossible, and Mr. Moynihan proceeded to remove the whole stomach. He described the operation at length. The most difficult part was the anastomosis of the esophagus to the jejunum, which was facilitated by flexing the patient's neck as much as possible and traction on the esophagus, which brought three-quarters of an inch below the diaphragm. The patient bore the operation well and convalescence was uninterrupted. A point Mr. Moynihan mentioned as important will be observed by future operators. Finding the stomach pendulous from the esophagus, he realized that it would, with the greatest advantage, hold the tube in a fixed position until his suture lines were complete, thus solving one of the greatest difficulties of complete gastrectomy and perhaps furnishing a principle applicable to other operations.

The specimen was examined by Dr. Craven Moore. it measured 4 1-2 inches in length, was tubular, divided into a globular smaller cardiac end, passing by a narrow constriction into the greatly contracted pyloric portion. Under the microscope its appearance was that of atrophic scirrhus.

Mr. McAdam Eccles gave particulars of a similar case in a woman of forty-six in whom he had done an almost complete gastrectomy. He was able to

make a junction between the esophagus and the duodenum, as this was very mobile. The patient survived for eleven months, but then died from secondary deposits in the liver, he thought, but could not obtain a post mortem. The microscopical examination of the specimen very closely resembled that in Mr. Moynihan's case.

Another paper in this section was read by Mr. J. D. Malcolm. It was on cholecystectomy. He had had seven cases, and the after history was so good that he thought it might be performed oftener with advantage. He admitted that the danger of new gallstones forming after complete emptying was slight, but he thought the more severe operation was not to be rejected, and when disorganization of the gall-bladder was extreme excision was necessary.

Mr. Moynihan, commenting on the paper, said he excised less often than formerly. The condition of the patient and other difficulties interfered to prevent excision becoming a routine procedure. The most experienced surgeon might not be able to exclude with certainty abnormal conditions of the common duct and ampulla.

Sir Alfred B. Garrod, F.R.S., died on Saturday in his eighty-ninth year. Educated at Ipswich grammar school and University College and Hospital, he graduated at the London University, taking first place at the M.B. (1842), and again at the M.D. the next year. In 1847 he was appointed to a vacancy on the staff of his hospital as assistant physician, and in 1851 professor of therapeutics in the college. Then he joined the College of Physicians, of which he was elected a Fellow in 1856. Later on he migrated to Kings College as professor of therapeutics and physician to the hospital to which he became consulting physician on his retirement some years ago. He has served as senior censor at the College of Physicians and as vice-president twice. He delivered the Goulstonian Lectures there in 1858 on diabetes and the Lumleian lectures in 1883 on urine and renal calculi. The Moxon gold medal for researches in clinical medicine was awarded to him in 1891. His manual of materia medica and therapeutics was for many years the favorite textbook of London students. His principal clinical work was done in relation to gout and rheumatism, the formation of uric acid in the body, and the value of certain remedies in gouty and rheumatic conditions, *e.g.* guaiacum and lithia, the last of which he first introduced into practice. His Knighthood was conferred at Queen Victoria's Jubilee, 1887, and he was soon after made one of Her Majesty's physicians extraordinary.

OUR VIENNA LETTER.

(From Our Special Correspondent

INTESTINAL OBSTRUCTION SECONDARY TO EPIDIDYMITIS—SUTURE OF THE HEART—PLASTIC OPERATION ON THE ULNA—INTESTINAL PERFORATION DUE TO ASCARIS—DISEASE OF THE RETINAL VESSELS—EXCISION OF THE LARYNX AND ESOPHAGUS—BRONCHOSCOPY.

VIENNA, December 22, 1907.

BALAS has operated on a case of intestinal obstruction which developed as a complication in a gonorrheal epididymitis. The patient was a smith, twenty-eight years old, who manifested symptoms of intestinal occlusion in the fourth week of the epididymitis. Four days later he was admitted into the hospital and at the laparotomy a loop of intestine was found adherent to the edge of the pelvis along the course of the vas deferens. This was angulated in such a way as to prevent the passage of intestinal contents, but the loop was freed from its attachment without great difficulty and the lumen restored. Peritonitis was already present, however, and the patient died twenty-four hours later. The autopsy and the results of the bacteriological examination showed that the gonorrheal process had involved the vas and that through perforation of this structure a subperitoneal abscess had formed. This occasioned a local peritonitis, causing adhesions and finally intestinal obstruction, which in turn gave rise to the general peritonitis.

Luksch of Graz operated on a boy of thirteen years who had received a gunshot wound of the heart, which was successfully treated by suture. The projectile was 6 mm. in diameter and had entered in the fourth intercostal space between the left sternal border and nipple. There was slight external hemorrhage, the patient was semiconscious, restless, and anemic, with a pulse of 140 and barely palpable. The cardiac dullness was increased upward and the sounds were not audible. At the left base there was dullness to the angle of the scapula. The operation was performed two and a half hours after the injury. The projectile had pierced the left ventricle, from which the blood streamed at each systole. The wounds of entrance and exit were closed with sutures of iodine catgut, the heart coming to a standstill during the procedure and then beating regularly again. The pleura and pericardium were closed with catgut sutures. The wound healed without reaction and the patient was out of bed on the fourteenth day. During the third week a cerebral embolus caused left-sided paralysis, but this has since subsided completely. In a radiograph the projectile could be seen lying to the left of the vertebral column.

Moriz Chudovszky successfully replaced a large portion of the ulna removed at operation. The patient was a man of twenty-six, who had noticed a swelling of his left forearm, which had progressed during three years. On admission a swelling was seen occupying the upper and middle third of the ulnar side of the forearm, fusiform in shape, and in part of bony hardness, in part cartilaginous. The growth was attached to the ulna, but the muscles were somewhat movable over it. The skin was freely movable; there was no pain. The largest circumference of the forearm was 34 cm. At the operation the growth was removed and a piece of boiled beef fibula 14 cm. long, 1 cm. wide, 4-5 mm. thick was placed in the gap. Holes were bored in the stumps of the bone and the ends of the graft placed in these. The wound was closed in layers and a firm dressing was applied. The growth was an osteochondrosarcoma, the resected portion being 10 cm. in length. The wound healed without complications, the fixation dressing being kept in place for twenty-one days. Now, six months later, the man is able to work and the radiograph shows that the implanted piece is but little thinner than the ulna.

Franz Orsos has reported a case of intestinal perforation due to the ascaris. The patient was a man of forty-four, who came into the hospital at night with symptoms of incarcerated hernia. An attempt at operation resulted in the evacuation of an abundance of pus; the next morning he died. At the autopsy a general purulent peritonitis was found and there was a perforation the size of a bean in one of the loops of the ileum. Under the transverse colon there was a dead male *Ascaris lumbricoides* 12 cm. in length. The perforation with its consequences had been caused by this parasite, which was lying free in the abdominal cavity. The situation and nature of the perforation, the normal condition of the mucous membrane in the rest of the intestine, and the changes about the colon caused by the worm and showing that it is able to penetrate the intestinal wall all indicated that the injury had been caused by the parasite alone. It first penetrated the mucosa and then burrowed under the peritoneum until this finally tore also. A striking proof of the ability of the worm to perforate the gut was presented by the conditions existing at the place where the worm was lying; here the peritoneum had been lifted up and the head of the worm was under it. The parasite had first caused an abscess and had then crawled up to the omentum, its path being indicated by the abscess passages communicating with the main cavity and leading up to the omentum.

Goldzieher observed a case of disease of both the artery and central vein of the retina giving the clinical picture of arterial obstruction and venous thrombosis. The patient was an old woman with severe nephritis manifested by a large amount of albumin with many pus cells, red blood cells, degenerated epithelial cells, and casts in the urine. There was cardiac hypertrophy. The patient said that early in January she noticed a diminution in visual power accompanied by severe headache. The right lens was transparent, but on the anterior surface there were several blackish deposits and there were many fine flocculi in the vitreous body. The outlines of the optic disc were obliterated and pale; the arteries being replaced by white bloodless striæ. The lumen of the veins had also disappeared and there remained only delicate red markings. In the macular region a cherry red spot was visible surrounded by a white area and there were many fresh hemorrhages with white areas scattered over the entire retina. The eye was perfectly blind while the left eye was perfectly healthy. This condition can be explained on the basis of there being two processes; there was thrombosis of the central vein causing a hemorrhagic retinitis and then complete obliteration of the central artery was caused by a proliferating endarteritis which led to blindness.

Hertle has operated on a woman from whom he removed the larynx and a portion of the esophagus for a carcinoma of the latter structure involving the larynx. The trachea and the distal stump of the esophagus were sutured to the skin above the jugulum and the pharynx was completely closed. Before the operation a gastrostomy was done in order to secure the patient's nutrition. A flap of the skin of the neck was introduced in the position of the resected portion of the esophagus in order to make it possible to replace this organ by suturing this flap into a tube at a later operation. The patient is able even at present to take food by mouth through the intervention of a rubber tube connecting the pharynx and esophagus.

Marschik removed a foreign body from the right main bronchus of a boy of five years by means of the bronchoscope. The boy had inhaled a fish bone, the accident being followed by sudden aphonia and pain on swallowing, but no asphyxia. The laryngoscope showed that the foreign body was wedged in the subglottic space exactly in the midline between the vocal cords. In partial anesthesia Marschik attempted to remove the fish bone with laryngeal forceps, waiting for a moment when the glottis opened. The object was successfully seized, but at the moment of withdrawal the child gave a struggle and the bone slipped from the instrument. A bronchoscope tube with an internal diameter of 6 mm. was then introduced and the end of the foreign body could be seen in the right main bronchus. It was grasped with a bronchoscopic forceps and readily extracted at the first attempt. In spite of this success Marschik is of the opinion that tracheotomy is a more reliable procedure since bronchoscopy if prolonged involves danger of edema of the glottis which would require tracheotomy.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE ANTHRAX SITUATION—SERUM TREATMENT OF MALARIA—DIPHTHERIA—MEASLES—CHOLERA.

MANILA, P. I., November 23, 1907.

THE regular monthly meeting of the Manila Medical Society took place at St. Paul's Hospital at 8.30 P.M., November 11. Owing to the wide publicity given in the newspapers with regard to the quarantine of certain vessels which brought anthrax cattle to Manila from the port of Hongkong, it was deemed desirable to discuss the anthrax situation before the Society. Dr. Nesom, Director of Agriculture, opened the discussion upon animal anthrax, and stated that when this disease was once introduced into a country, it was practically impossible to eradicate it; and that the losses might reach the same proportions as those which have caused such great havoc in the Philippines heretofore on account of rinderpest; and since anthrax is not prevalent at the present time in the Philippine Islands, it is most important that no importations of same should take place. The case in question arrived upon the steamship *Loonsang* November 2. One of the animals had just died and the post mortem revealed lesions suspicious of anthrax. Microscopical examination showed a bacillus closely resembling that of anthrax. This was cultivated and later positively identified as the anthrax bacillus. The entire shipment of cattle was deported to Hongkong.

Dr. Heiser, Director of Health, discussed human anthrax, and stated that from an epidemiological or public health standpoint, the disease was not of great importance because it did not show a great tendency to spread, and was only conveyed by direct contact. For instance, in Great Britain, where the disease was prevalent, from time to time, among wool sorters and others, no more than 40 or 50 cases had been reported per annum, and when the necessary precautions were taken in disinfecting wool and hides, the disease rapidly disappeared. He stated that several cases of human anthrax had been reported in the Islands, but the points at which they were said to have occurred were so remote that they were not microscopically confirmed. He stated that the eradication of the disease from seagoing vessels was a most difficult matter, probably one of the most difficult disinfections which the quarantine officer was called upon to perform. The best method was considered to be, first to mechanically cleanse the vessel, then to wash same down with a strong solution of caustic soda, after which to wash everything down with a 1-to-500 solution of bichloride of mercury; after that, thoroughly to repaint the vessel. If this was done carefully, it could be reasonably expected that the anthrax bacilli and their spores had been killed.

The next subject under discussion was a short address delivered by Captain and Assistant Surgeon Ford, of the United States Army, upon the results of serum treatment in malaria. He stated that he had prepared a serum by taking infected human blood and injecting same into white rabbits and afterwards withdrawing from them the serum, injecting this into the human subjects for the cure of malaria. He stated that in a large percentage of cases this method of treatment had been successful, but that failure had resulted in several cases. He stated that he had undertaken this form of treatment, not so much on account of the fact that quinine was regarded as unsatisfactory in the treatment of malaria, but for the purpose of ascertaining whether the serum prepared with animal organisms like those of malaria could be depended upon to produce antitoxic substances, and from his experience he was inclined to believe that this had been fully demonstrated in his cases.

Cases of diphtheria and measles still continue to occur in the city of Manila. This is the first time that so many cases have come under observation since American occupation. The cases of measles are confined to American children almost exclusively. It is thought possible that this is due to the infection being contracted at the public school which they attend. Diphtheria also continues to occur, mostly among American children, although a few Filipinos have been infected. One death in an American has occurred up to the present time. Cases occur on an average of three or four per week. In the past it was possible in most instances to trace them direct to importations, but this time it has not been possible to do so.

Cholera still continues in Manila and nearby towns, but so far there has been no spread by maritime routes. During the early part of November the disease was reported as being present at Camp Overton, which is situated near Iligan, Mindanao, but up to the present time it is not known whether the same has been definitely diagnosed as cholera or not. Only a few cases have occurred. In the city of Manila there has been about one case per day during the past few weeks. There has been some spread along points situated on the railroad which leads out of the city of Manila. Total cases in Manila from November 1 to November 23, 26; deaths, 23.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 9, 1908.

Chronic Dyspepsia.—J. B. Deaver declares that this term denotes a symptom-complex which is usually expressive of distinct organic disease within the abdomen. The cause of chronic dyspepsia is chronic disease in the gastro-enteric canal of associated glands and the author devotes his consideration of the subject to treating of the diseases of the appendix, stomach, and duodenum, and of the biliary passages as producing chronic dyspepsia. He notes that when the appendix is the seat of noninflammatory irritation it is a common occurrence for the patient to be treated for dyspepsia and constipation with no permanent result. Of the intrinsic diseases of the stomach the most common is ulcer or the same lesion in the duodenum, and after that, in the author's experience, cancer. Such cases go on with the usual antidyspepsia treatment until a sudden hemorrhage wakes the physician up to the real nature of the case. The author believes that it is not unreasonable to state that the majority of cases of gastric cancer arise in the bed of an old ulcer. If a cancer of chronic dyspepsia has been treated for a considerable time medically and has not improved he should undergo a thorough abdominal examination. The stools should be examined chemically and microscopically, and if the diagnosis cannot be definitely made and the symptoms persist, the question of opening the abdomen should always come up for serious consideration.

New York Medical Journal, January 11, 1908.

Causes of Appendicitis.—A. W. Armstrong enumerates the predisposing causes of appendicular inflammation, as follows: (1) The degenerate condition of the organ itself. (2) The structure of the appendicular walls and their blood and nerve supply. (3) Its form and direction. (4) Normal drainage. (5) Diet and chronic constipation. (6) Mechanical obstruction and stricture of the lumen. (7) Constitutional diseases. (8) Disease of the pelvic organs. The list of exciting cases is shorter, including as it should: (1) Traumatism. (2) Intestinal parasites. (3) Enteritis. (4) Direct infection. The author elaborates each of these

headings and closes by saying that it must be said that the pressure of a pathogenic germ is the one thing constantly necessary to the production of this condition. Simple necrosis of an organ so functionally inactive and useless as the appendix would not be expected to give rise to serious symptoms, it must rather become infected. There is no special germ, however, that can be charged with the burden of having been introduced into the appendix for this special occasion—in fact, the germs involved in the process are normally present in the appendix in health, awaiting the time when some accident shall bring about a condition suitable for their work. The *Bacillus coli communis* and the ordinary pyogenic cocci are most commonly present, and whatever the assigned cause may be it must be remembered that appendicitis is an infective malady.

Cerebral Contusion.—C. S. White says that in cerebral contusion, there is a period of unconsciousness immediately supervening which may last from a few moments to as many weeks. The face is pale, cold, and often moist; the pupils usually dilated, reacting to light; the pulse full, compressible, between 70 and 90; the respirations free; the temperature subnormal, and the blood pressure below 110. There is no involuntary evacuation of feces or urine, and the patient lies quietly. A period of reaction soon occurs, the skin becomes warmer, the pulse firmer, the person may become restless; he can be aroused by a vigorous shaking and perhaps give monosyllabic answers to questions shouted in his ear. In a case in which the contusion is slight or mild, the mentality is impaired for a brief period, and in an hour or two he may give intelligent answers and in other respects appear responsible. Headache and nausea may be an accompaniment, with mild constitutional symptoms. Treatment calls for moderate stimulation, preferably with strychnine, rest, ice-cap to the head and heat to the body. Excited states should be controlled by the bromides. Purgatives are often sufficient in the very mild cases. Opium is generally contraindicated. In the profound cases where symptoms of pressure supervene it is best to trephine over the middle meningeal artery. The author's general conclusions are as follows: (1) Cerebral contusions, when fatal, are due to laceration or hemorrhage. (2) Prolonged coma is a reliable indication of increased pressure. (3) A conscious period followed by coma indicates hemorrhage. (4) High blood pressure is an early and reliable symptom of pressure. (5) Trephining is indicated in plus intracranial pressure from hemorrhage or edema. (6) Venesection is of doubtful value. Two personal cases are reported.

Acute Pulmonary Edema as a Complication of Epileptic Seizures.—W. T. Shanahan states that in all grand and in many petit mal seizures there is a more or less marked increase in the secretion of mucus along the respiratory passages with the subsequent frothing at the mouth which is commonly seen in such patients. In some cases there may be no actual increase, but simply an accumulation in the mouth of the normal amount which is then forced from between the lips during the accentuated respiratory air currents which accompany the stertorous type of breathing. In a few cases this great outpouring of mucus becomes so marked that the patient is in actual danger of being drowned in his own secretions, this acute process producing a marked pulmonary edema. Eight personal cases are reported. In such cases an enfeebled action of the left ventricle renders it unable to expel in a unit of time the same quantity of blood as does the right ventricle, the resistance remaining the same. As a consequence of this there is some large excess of blood in the pulmonary vessels. The edema is usually associated with venous hyperemia. The asphyxia accompanying the seizure is caused by the local stagnation of the blood stream and in turn causes an increase in the permeability of the endothelial walls of the lung capillaries. As to treatment, the author notes that the most important procedure has been found to be a change of posture so as to aid in draining the respiratory passages of the great excess of mucus. If necessary, turn the patient over the side of the bed, removing all mucus from the mouth, nares, and pharynx. Open the mouth with a gag or with the fingers protected by a towel. In addition, much benefit has been obtained by dry cupping and the use of atropine and strychnine hypodermatically Venesection is of value in full blooded patients. Adrenalin was used without apparent result.

The Voice as an Index to Diseases of the Throat, Nose, and Ear.—G. Hudson-Makuen calls attention to the voice as an index of man's mental and moral as well as physical state. With reference to the latter he discusses the hoarse, throaty, tremulous, muffled, whispered falsetto and nasal voice. He notes that a common cause for the characteristic hoarseness of incipient tuberculosis is the thickening of one or both ventricular bands which interferes with the normal approximation and vibration of the cords. Hoarseness is frequently symptomatic of intralaryngeal tumors. The tremulous or broken voice is characteristic of age, but is often noted in those who are debilitated by overwork and especially by extraordinary vocal effort. The whispered voice is well illustrated in hysterical aphonia. The voice of the deaf is of high pitch, and monotonous and throaty. It is unmodulated. The muffled voice is one that is more or less devoid of head resonance. It is the voice of those having faucial and pharyngeal tonsils, hypertrophied turbinals, nasal polypi, or other nasal and pharyngeal growths. The nasopharyngeal resonators are dampened, so to speak, and the voice is muffled. The falsetto voice is generally indicative of no special throat, nose, or ear lesion, and it is due entirely to an erroneous conception of the true tones and a consequent misplacement of the tones. There is in it no laryngeal or chest resonance, but the larynx is markedly elevated and the vibrations are focused high up in the head. The nasal voice is due in the majority of instances to inadequacy of the velum palati, which allows too great a proportion of the vibrating breath to pass up through the nasopharynx, thus giving a preponderance to the nasal resonance.

The Lancet, January 4, 1908.

"Diphtheria of the Skin" of Three Years' Duration Treated by Antitoxin.—The history of an unusual case is given by A. R. Slater, whose patient was a girl of thirteen years. Three years before she had had an inflammation of the eyes and shortly afterward a white patch was noticed on each labium. Soon blisters began to develop around the vulva and spread on to the abdomen. The child was then taken to a general hospital and was admitted, the vesicles having spread so rapidly that she was practically covered by them about the body and neck, and there were a few on the face and head. She remained in the hospital about five months and during that time made little or no progress, the only change being that the abdomen cleared and the vesicles were confined to the parts round the vulva, the chest, the neck, and the head (including all the face). Since then she had been treated for syphilis, a section taken of one of the vesicles showing some appearance of syphilis, but this plan of treatment was of no apparent benefit. When the child came under the author's observation, she presented masses of vesicles round the left side of the mouth extending to the cheek, but not into the mouth; others on both eyebrows, the right being worse than the left. The external meatus of both ears was filled with thick semipurulent discharge, the lobes of the ears and behind the ears being covered with discharging vesicles. Upon the head were large masses of vesicles and some dried scabs where former ones had been. The neck and shoulders had large quantities of vesicles on them extending down to the nipples on either side and as far as the middle of the scapulæ on either side at the back. In the areas affected the space between the vesicles was dark red, but in other areas which had been affected and where the vesicles had disappeared the skin was only slightly erythematous or even normal, no scarring being left behind. The region of the vulva was erythematous and studded with vesicles, but this condition did not go back further than the vulva itself; the whole affected area thereabouts extended to three or four inches down the inner part of the thighs and about four inches up the abdominal wall. All the areas were discharging freely, a thin, clear fluid dripping from the chin at the rate of a drop per minute. Examination of the fluid showed the presence of a bacillus corresponding in reaction and inoculation experiments to that of diphtheria and she was immediately given injections of antitoxin under which improvement was steady and finally complete. Staphylococci were also found in the exudate. The disease apparently had commenced in the eyes, then spread to the vulva, and thence into the superficial lymphatic circulation producing a condition resembling herpes. The lesions were confined to the superficial skin layers, as no scarring was left.

An Unusual Pathological Condition of Meckel's Diverticulum.—C. H. Turner's patient was a man of 23 years who was taken with violent abdominal pains and vomiting. On admission to hospital, a diagnosis was made of acute appendicitis with fairly extensive localized peritonitis. On opening the peritoneum about six ounces of turbid peritoneal fluid escaped, and distended and somewhat congested coils of small intestine presented. The cecum could not be felt in the iliac fossa nor could any large intestine be pulled out. The incision was extended a couple of inches and the whole hand was introduced. A portion of the large intestine could then be felt quite collapsed and lying high up. This was pulled down easily and traced first in one direction where it was found to be continuous

with the transverse colon; traced in the other direction it was found to take a turn upwards and forwards towards the umbilicus, and here a slight adhesion gave way and the cecum was brought out of the wound and examined; it was also collapsed and the appendix was found to be healthy. The ileum was then followed up and the first foot was collapsed and found to be firmly adherent at this point to the anterior abdominal wall, just at the level of, and to the right of, the umbilicus. The first incision was covered up with sterilized gauze and a second incision three inches long was made through the fibers of the right rectus muscle. On incising the posterior layer of the sheath of the rectus what was apparently an abscess cavity containing four ounces of very offensive pus was opened. This was swabbed up and washed out with 1 in 40 carbolic lotion and then explored with the finger; the walls were quite smooth and felt as though formed by mucous membrane. The peritoneal cavity was opened next and carefully packed off. The abscess cavity described above was then found to be the inner surface of the fundus of a dilated and gangrenous Meckel's diverticulum, which was adherent to the anterior abdominal wall. It was then carefully separated and the coil of bowel from which it arose was drawn out of the wound. The diverticulum arose from the ileum, about twelve inches from the ileocecal valve; its proximal portion was stenosed and its distal portion or fundus was gangrenous and dilated (as far as could be judged, for it had contained four ounces of pus) to the size of a Tangerine orange. Recovery was complete in fourteen days.

Delirium Tremens.—L. N. Boston gives a tabulated analysis of 156 cases. The condition is most common between the ages of 30 and 50, while the death rate is practically the same for the second, third, and fourth decades. The author's statistics show that the same patient may suffer numerous attacks and that contrary to the general belief the condition does not result fatally in the second or third attacks. Most of the cases occurred during August (Philadelphia). Twenty-two of the cases displayed more than one preexisting or complicating condition of which ten displayed kidney and lung involvement; seven heart and lung; two kidney and heart; and three heart and stomach. Thirty-eight of the 140 cases were uncomplicated and all of these were followed by recovery. Most striking in connection with the table enumerating accompanying lesions is the fact that all of the fifteen cases showing renal complications terminated fatally. Again, great importance is to be attached to the prognostic significance of pre-existing cardiac disease which gave a mortality rate of 84.6 per cent.; and acute cardiac complications are of but little less importance as regards the seriousness of the condition in question. Those cases developing acute pulmonary conditions (bronchitis and bronchopneumonia) gave a death-rate of but 66 per cent.

British Medical Journal, January 4, 1908.

A Note on Nephropexy.—F. Eve describes the operation which he has been in the habit of doing for anchoring the kidney. The main features are summarized in the following propositions: (1) Owing to the friability of the renal tissue the capsule only should be used for its fixation. (2) A decorticated surface of the kidney should be brought into immediate relationship with the quadratus lumborum and psoas on which it normally lies without the intervention of any connective tissue. (3) No sutures should be affixed to the capsule of the kidney in its upper third, as when passed through the parietes they would as a rule fix the kidney in a position below that which is normal. Technical details are given in the original paper.

Excessive Patellar Reflex of Functional Nervous Origin, and Especially the "Trepidation" or "Spinal Epilepsy" Form.—According to F. P. Weber, the excess in the patellar reflex in the class of cases under consideration is due to a peculiar functional condition of the cerebral cortex, which when present in greater degree gives rise to the "trepidation" form of patellar reflex, and to the so-called "spinal trepidation," and to "functional ankle clonus"; that this functional condition of the cerebral cortex may be excited or modified by temporary emotional factors, and that a similar state may be induced by toxemias, such as uremia; that the signs (exaggerated knee jerks, etc.) of the functional cerebral condition in question may be imitated by organic nervous disease (cerebral hemorrhage, sclerosis in the lateral columns of the spinal cord, disseminated sclerosis, etc.), but that it is just possible that in some rare cases of organic nervous disease (for instance, some cases of early disseminated sclerosis) the organic changes may give rise to the phenomena of increased tendon reflexes, etc., merely by inducing the above-mentioned (hypothetical) functional cerebral change. The author gives a further illustration of his meaning by an allusion to the analagous question of the nature of functional nervous vomiting where, he maintains, we probably have to deal with a peculiar functional change in the brain (cortex), analogous to the cerebral condition that produces the exaggerated tendon reflexes and "trepidation" of functional nervous origin, and which, like it, may be excited or modified by emotional factors, and is analogous to certain states induced by toxemias—such as uremia. The symptoms produced by these abnormal functional states may equal or even exceed those produced by organic disease.

Typhoid Carriers.—A. Ledingham and J. C. C. Ledingham refer to those cases of typhoid in which after recovery the patients still void typhoid bacilli in the stools and are consequently a menace to those about them. Reference is made to various reports of this class of cases. Lunatic asylums appear to yield a considerable number and the authors record their personal experience in an asylum under their control. Cases of typhoid appeared from time to time without any apparent cause. Fifty-seven samples of feces from female patients were examined. One patient, G., was found to be passing typhoid bacilli in enormous numbers in the feces. In fact, the plates contained typhoid colonies to the almost complete exclusion of *B. coli* and other lactose fermenters. This patient, G., has been in the asylum since 1896. She is thirty-five years of age, suffers from dementia, and there is no record of her having had typhoid fever. Her personal habits are exceedingly filthy, and she has never been employed in the laundry or kitchen. Her serum agglutinated the *Bacillus typhosus* up to 1 in 200. With the isolation of this case, the fever was, it was hoped, checked, but another case came up and fresh examinations of the feces were made. Another typhoid carrier was thus brought to light and later still another. It seems probable that in these cases the bacilli vegetate in the gall-bladder from which they are intermittently ejected into the bowel. Such "carrier" patients should of course be kept under constant bacteriological supervision. In two instances Dehler performed cholecystostomy and drainage of the gall-bladder though in neither case was there any direct evidence of disease of this viscus.

The Contents of Irreducible Inguinal Herniæ in Female Subjects and True Hermaphroditism.—E. M. Corner states that there is a condition of inguinal hernia found in females which deserves much more attention than has hitherto been given to it. It is concerned with the irreducibility of the hernia, and differs in a most marked manner when found in adults from that when found in children. This condition is the presence of some of the female internal genitalia in the hernial sac. Statistics collected by the author demonstrate the fact that an irreducible hernia in a female infant is almost sure to contain some of the internal genitalia. He lays down the following rules: (1) When *irreducible*, the hernia of a female child will be felt to contain a small rounded body, about the size of a small pea, which is freely movable upon its pedicle. It is the ovary. (2) When *strangulated*, there is an irreducible nontranslucent mass over the external abdominal ring through which it protrudes. If it does not contain bowel, as was only found in fifteen per cent. of the irreducible female herniæ of infants, there need be no sickness and the bowels will act. The lump gets larger and larger, but, strange to say, may cause the infant very little inconvenience. This seems to be accounted for by the strangulation of the tube and ovary causing the distention of the ovary and tube with blood and serum, producing in time a kind of an infiltration anesthesia. Otherwise it is hard to understand the apparent painlessness of the hernia. When the hernia is simply irreducible the tube and ovary can be easily felt. When the hernia is strangulated and has no impulse on crying, the diagnosis is easily made by the nontranslucence of the swelling and the association of it with no more symptoms than, perhaps, some slight irregularity of the bowels and the digestion. Corner notes another imperfectly known and most interesting feature of the generative glands found in the orignal hernial sacs of female children. If they are removed and examined with the microscope in some cases they will be shown to be immature testicles and not ovaries. When this is so, the case is truly hermaphrodite, male generative glands and female generative organs. On this account it has been advised that those glands be removed so as to avoid the child growing up to be an imperfect man. This is extremely doubtful advice, because an emasculated being is not female, but of a neuter sex, and has been deprived of certain perfected secondary characteristics, such as bodily and mental energy.

Berliner klinische Wochenschrift, December 30, 1907.

Suboccipital Disease.—Grünwald says that this term includes not only tuberculosis of the bones at the base of the skull, but also inflammatory processes of infectious nature involving these joints, the neighboring tissues, and fascial planes. Such processes may originate from affections of the ear as the result of trauma to the base of the skull, disease of the accessory cavities of the nose, the teeth, and finally syphilis. The inflammatory process may give rise to a considerable variety of symptoms, according to its course and the structures it invades, but certain typical signs are always present. Prominent among these are the more or less pronounced rigidity of the neck and the early onset of pain involving the distribution of the trigeminal or occipital nerves. In the later stages the presence of infiltration at the back of the neck indicates the site of the morbid process, while rupture into the retropharyngeal space is less significant. The original focus can often be determined only through a careful chronological and topical study of the symptoms, and the primary lesion frequently remains latent for a considerable length of time. Evidence of rupture, such as sudden cessation of pain, or diminution in the fever, and the rigidity, is of great importance, as it indicates the invasion of wider districts by a previously localized process and points out the last moment at which immediate intervention may still prevent grave, if not fatal, consequences. Careful scrutiny of the temperature curve is particularly useful in keeping track of the course of the infection and in recognizing this critical period at which extension begins. Before actual suppuration occurs it is advisable to adopt palliative measures, such as immobilization of the head, with or without traction. The author describes in detail five such cases having various primary foci of infection.

Münchener medizinische Wochenschrift, December 31, 1907.

Late Lesions of the Ulnar Nerve.—Brassert says that it is not generally recognized that affections of the ulnar nerve may sometimes be the result of injuries or other changes about the elbow joint occurring years previously and giving rise to the formation of callus or cicatricial growths. The immediate cause of such a lesion may be sudden strain or overexertion. While several such cases have been reported their number is comparatively small and the author contributes another. The patient was a machinist forty-eight years of age who presented himself complaining of pain in the right arm with numbness of the fourth and fifth fingers which had lasted over a year, and for five or six weeks had been accompanied by weakness of the fingers mentioned which was a hindrance in his work. An analysis of the symptoms presented indicated that a paresis of the ulnar nerve existed and no etiological moment for this could be discovered except a scarlatinal infection thirty-three years previously which had been accompanied by suppurative arthritis in both elbows and in one knee. Roentgen ray examination of the right elbow showed that there was thickening and bony hyperplasia about the joint involving the lower end of the humerus and the upper extremities of the radius and ulna which were considerably deformed. The author assumes that as the result of this periarticular change the nerve trunk was pressed upon or changed in course so that decades after the primary arthritis the nerve lesion manifested itself. The occupation of the patient might perhaps serve as contributing cause. No other etiological factors could be discovered.

Deutsche medizinische Wochenschrift, December 26, 1907, *and January* 2, 1908.

The Diagnosis of Diaphragmatic Pleurisy.—Sehrwald says that while in cases of pleurisy in which a considerable area is involved the diaphragmatic pleura is probably often affected also, it is difficult in most cases to make this diagnosis. Among the symptoms indicating inflammation of the diaphragmatic pleura are the following: Diminution or absence of the movement of the diaphragm, giving rise to very rapid, syncopated, costal respiration, with excessive dyspnea that may even reach the grade of orthopnea. On the diseased side the diaphragm is higher than normal. Constipation and jaundice may also be present. There is severe pain at the insertion of the diaphragm, which is brought on by motion such as that of respiration, coughing, belching, hiccough, etc. There is tenderness in the epigastrium and along the twelfth rib, sometimes between the insertions of the sternocleidomastoid muscles, owing to tenderness of the phrenic nerve. Tenderness also may exist at the point of intersection of the line continuing the external border of the sternum and the horizontal prolongation of the tenth rib, and at another point in the eleventh intercostal space close beside the vertebral column. On deglutition there may be pain as the food passes through the esophageal opening in the diaphragm, and in a case of the author's severe paroxysms of coughing were induced in the same way. Gastric irritation may lead to pain, hiccough, and vomiting. The respiratory abdominal reflex may be present, consisting of a lightning-like contraction in the upper portion of the rectus muscle on the side involved appearing at the end of deep inspiration. Friction sounds over the diaphragm may be present and peritonitis may result from secondary involvement of this membrane.

Esophagoscopy in Carcinoma of the Esophagus.—Elsner, in discussing the value of esophagoscopy as a diagnostic measure, says that while there is no doubt of its utility in cases of impacted foreign bodies, its position in regard to malignant disease of the esophagus is less clear. From this standpoint cancer of the esophagus may be divided into two types, that involving the tube itself and that of the cardia. When the disease is in the former situation its nature can nearly always be determined without great difficulty by means of the older diagnostic measures, but the picture of cancer of the cardia is less clean cut and more likely to be confounded with that of other conditions. In cases in which the disease is supposed to be in this situation the esophagoscope may prove of great service in clearing up the diagnosis. On the other hand, it must be admitted that at present the early diagnosis of esophageal carcinoma has not the same importance as that of the stomach, for example, since as yet the organ is inaccessible to operative procedures.

The Treatment of Nevi and Teleangiectases.—Ogata recommends the following preparation as a local application for the removal of nevi and teleangiectases. Rice grains are washed and placed in a glass dish; ten per cent. potassium hydrate solution is poured over them and they are allowed to stand six to eight hours after they have become thoroughly softened. The starch of the rice grains swells up and gradually becomes transparent. When the grain has become entirely clear the alkali solution is poured off and the sediment is washed with water. The mass so obtained is triturated in a porcelain mortar and forms a colorless, sticky mass, strongly alkaline in reaction, and consisting of a combination of starch with potassium hydrate. Through the union with the starch the caustic properties of the alkali are considerably reduced and the tissues are not invaded too deeply. The preparation loses its strength in about six hours and therefore must be freshly prepared. It is applied by means of a pointed glass rod after the skin has been cleaned with tincture of soap and dried off. Several applications can be made at a single session, the area being washed with sterile salt solution each time after the caustic applied has dried. In children it is advisable to apply five per cent. cocaine solution before the caustic. In most cases three to five applications are sufficient, the area treated becoming black and being cast off in from seven to ten days. The scars are at first red, but later whiten and become entirely invisible. It is important not to treat too large an area at a time, otherwise disfiguring scars due to suppuration may result. Lesions of considerable size require a treatment of months or even a year.

The Surgical Treatment of Hyperacidity.—Balas reports three cases of extreme hyperacidity which were successfully treated by the operation of gastroenterostomy. In two of the cases there was no stenosis, while in the third the stomach was of pronounced hour glass type and there was a tight cicatricial stenosis of the pylorus, the condition evidently being secondary to ulcer. Examination of the gastric contents after the patients had recovered from the operation showed the presence of bile and pancreatic juice, these secretions having entered the organ through the intestinal opening. The author believes that Katzenstein's theory in regard to the beneficial effects of gastroenterostomy in cases of hyperacidity is the correct one. This is that the entrance into the stomach of bile and pancreatic secretion in these cases is beneficial through the chemical neutralization of the gastric juice and also through a reflex inhibition of gastric secretion which is thus caused.

Treatment of Septic Wounds.—For wounds that are septic or have an offensive discharge, Joseph Mullen advises dropping twenty drops of 40 per cent. solution of formaldehyde on the dressing three times a day. The effect on the wound is excellent, the dressing does not require such frequent renewal, and the odor of the discharges is eliminated.—*Medicol Recorder.*

Book Reviews.

The Teachings of Thomas Henry Huxley. By Irving Wilson Voorhees, M.S. (Princeton), M.D. (Columbia). New York: Broadway Publishing Company, 1907.

In this appreciation of Huxley's life and work the author first pays a tribute to the man himself and then rehearses briefly the great scientist's views in regard to the most important of the many fields of learning he explored These are discussed under the headings of his teachings concerning biology, theology, education, morals, work, individual rights, and psychology. The little book is written with understanding and due realization of Huxley's part in molding the opinions now held on many different subjects and should prove a potent incentive to further study of his writings.

Materia Medica, and Pharmacy. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

Wilcox's work on Materia Medica and Therapeutics is a successor to W. Hale White's book on the same subject. The work was for a time known as White and Wilcox's, but as the last editions have been entirely rewritten by Dr. Wilcox, his name alone now appears on the title page. In the present edition many additions have been made, rendering the book so bulky that it was divided into two volumes. Of these the present volume forms Part I., being devoted to Materia Medica and Pharmacy, while the second volume deals with Therapeutics. The various drugs and preparations are described in detail, and are grouped according to chemical and physiological relationship. Chapters on pharmaceutical processes and on prescription writing are also presented. The book is a very practical one and will appeal especially to medical students and teachers at medical schools, although it is excellent also for quick reference for the busy doctor. The first volume alone cannot, however, be used as a guide to therapeutics, for it contains only the briefest references to the action and use of drugs.

Pharmacology and Therapeutics. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

The second volume deals, as its title states, with the applications of Materia Medica in the art of treating disease, and is an indispensable companion to the first volume. The second part can be used alone also, by the practitioner who is content to have a good work on therapeutics without the details which concern more especially the pharmacist. The volume offers a very complete description of the action and uses of drugs, according to the highest standard authority. It deals chiefly with the drugs of the U. S. P. (the latest revision being followed), but also contains references to the most commonly used unofficial remedies. A preliminary section is devoted to general matters, the modes of administering drugs, dosage, and theoretical considerations. The drugs are then taken up in groups according to their action—an excellent and most reasonable classification. Chapters on organic extracts, serums, and antitoxins are appended, while an index of diseases and symptoms helps in the search for any drug for the particular clinical case which one is treating

Blood-Stains: Their Detection and the Determination of Their Source. A Manual for the Medical and Legal Professions. By Major W. D. Sutherland, of His Majesty's Indian Medical Service. New York: William Wood and Company, 1907.

This manual gives the methods for determining the origin and character of blood-stains; the solubility, chemical tests, spectroscopical and microscopical examination; the serological tests by agglutinins, hemolysins, precipitins; and other authoritative information which will lead to the identification of blood-stains whether of man or other mammal and their approximate age. A number of cases of crime are referred to, giving the history and means employed to determine the medicolegal status of the case. Chemical tests are numerous and complete, while the serological tests, as detailed in Chapters VI. to X., are not only valuable, but afford highly interesting reading.

The Pathology of Fermentation. By Alonzo Englebert Taylor. Berkeley: University of California, Publishers, 1907.

We have here a series of lectures delivered at the University of California in 1904 and 1905. The delay in their appearance in book form is due to the San Francisco fire, April 18, 1906, when some portion of the manuscript was lost. Fermentation is here treated from its numerous points of view: catalysis or chemical decomposition produced by the presence of a substance which does not itself enter into the reaction. Fermentation of the carbohydrates, of protein, of fat; the nature of ferments and the reactions of fermentations; the specificity of ferments and the rôle of fermentation in metabolism. It would be impossible to enter into a descriptive review of these highly important and interesting processes. A specific reference, however, is called for to the chapter on the relation of fermentation to metabolism. This particular portion of the book is of great value and should be highly appreciated by the physician. It is doubtful, however, if the average medical man is sufficiently versed in organic chemistry to follow these studies. To the physiological chemist, or one who has a working knowledge of laboratory experiments, this as well as the whole book will be especially valuable.

Die Zuckerkrankheit und Ihre Behandlung. Von Professor Dr. Carl von Noorden, Vorstand der I Medizinischen. Universitätsklinick in Wien. Vierte Auflage. Berlin: August Hirschwald, 1907.

This familiar work of one of the greatest authorities in the world on diabetes appears now in its fourth edition, the first to be dated at Vienna instead of Frankfort-on-the-Main. The present edition has been not only scrupulously revised but in a large measure rewritten, especially as regards the portions dealing with the acetone bodies, and with the treatment of the disease. The book is intended for practitioners and therefore the theoretical parts have been much shortened. The reader is referred for these to the elaborate critical discussion of the entire scientific material on the pathology and chemistry of diabetes in the author's larger work, "Handbuch der Pathologie des Stoffwechsels," Vol. II., which has appeared this year in an English translation. The clinical portions of the book in this edition contain statistics and data concerning 2,500 cases of diabetes treated by the author since his establishment in Frankfort in 1804. The book is of the greatest practical value, especially on the subject of diet and treatment to all those who are interested in the still mysterious disease, diabetes.

Vorlesungen über Magen und Darmkrankheiten. Von Hofrat Dr. Friedrich Krämer. 3 Heft: Die Einwirkung der Genussmittel auf der menschlichen Organismus, Speciell auf die Verdauungs-Organe. I Tabak, Kaffee und Thee und Verdauung. II. Alkohol und Verdauung. Munich: J. F. Lehmann, 1907.

Dr. Krämer's lectures on the influence of coffee, tea, and alcohol upon digestion constitute a valuable contribution to the study of this important question. The author presents a great amount of clinical, statistical, and experimental evidence showing the bad effects of the abuse of these stimulants. He dwells especially on the anomalous fact that temperance movements have devoted themselves particularly to alcohol, ignoring the great evils of coffee, tea, and tobacco in excess. Tobacco, coffee, and tea, in large quantities, act most seriously upon digestion. Excessive smoking is, in his opinion, one of the chief causes of arteriosclerosis. The use of coffee and tea as substitutes for alcohol is wrong, for a moderate use of alcohol is not as injurious as that of large amounts of coffee and tea. Those who flatter themselves that they are temperate because they do not "touch a drop" of alcohol, but smoke all day long, are laboring under a vain delusion. The author recognizes, however, that a moderate amount of alcohol, with or before meals, acts as a digestive stimulant and is not injurious.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles Edited by W. T. Longcope, M.D., Philadelphia, U. S. A. Vol. III., 17th Series, 1907. Philadelphia: J. B. Lippincott & Co., 1907.

This new volume of International Clinics contains, as usual, much of interest to all classes of physicians and much of special worth to those who study single lines of medical science. It is impossible to enumerate all the articles contained in the volume in detail, and it is scarcely fair in view of the general excellence of all, to select a few for comment. Without reflecting upon the quality of the rest of the papers, we might mention some that will particularly appeal to the practitioner. The article of Dr. Edsall of Philadelphia on diabetes will appeal to those who wish a summary of some of the results of modern researches in this field. Raymond Wallace of Tennessee contributes a short but very instructive paper on the modern views of renal disease, and F. K. Green and Q. W. Hunter one on anomalies of menstruation. One of the most practical papers in the book is that by L. Brocq of Paris on the removal of superfluous hair

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held December 6, 1907.

DR. JOHN F. ERDMANN IN THE CHAIR.

Perforated Duodenal Ulcer.—Dr. CHAS H. PECK presented a man, 45 years old, who worked in a garage. This was a case that he wished to add to the series of cases reported at the last meeting. There was no previous history of gastric trouble except pain in the abdomen, which laid him up for two days two years ago. On the morning of his admission to the hospital, November 1, 1907, he lifted a heavy tank of gasoline above his head in the garage, when he was seized with severe abdominal pain, faintness, and nausea, and was compelled to discontinue his work. The pain continued and he was taken home and seen by a physician who gave him morphine. Throughout the day the pain continued. During the evening the tenderness and rigidity made a serious abdominal trouble seem likely and he then was sent to the hospital, about twelve or thirteen hours after the onset of the pain. His temperature was 101°, and pulse 90. The polymorphonuclears were 93 per cent. The tenderness and the rigidity and other symptoms made them think that possibly the patient was suffering from an attack of appendicitis. The appendix was removed but proved to be practically normal. A second incision was made and a small perforation in the duodenum, close to the pylorus, was found. This was easily closed and the man made a prompt and uneventful recovery. An interesting feature in this case was that the man was burned about the face by gas some three weeks previously, but it was such a slight burn that it probably had but little if any influence on the development of the duodenal ulcer. The patient was out of the hospital in sixteen days.

Dr. SAMUEL LLOYD congratulated Dr. Peck upon the results obtained. He remembered a case that was reported some time ago; a man was found with a perforation, was operated upon, but died of starvation two weeks after. Sometimes they made a mistake, he believed, in not taking more risks in these cases. He questioned if they could not get prompt union if the patient could not stand a plastic operation, closing the pyloric end of the stomach and establishing a fistula directly into the duodenum, feeding through it; this, he thought, might be an advantageous method. By establishing such a fistula and feeding through it, one might be successful in tiding the patient over until a more radical operation could be performed.

Dr. HENRY W. BERG said he had had the misfortune to see a number of these cases a while after perforation; in two cases one week or ten days had elapsed and a periduodenal abscess had formed. Dr. Peck's patient was fortunate; a few hours after perforation he was able to cut down upon the parts and put in a purse-string suture. Where one was fortunate enough to see these cases early after perforation he did not think there was much doubt as to the safety of the suture line providing there was not too much infiltration. When these cases were seen several days after the perforation, when the site of the perforation was surrounded by a deposit of fibrin and pus, the suture line then must be made in infected tissues; again, where the ulcer itself was surrounded by thickening and an infiltration area, he thought the best results were obtained by an immediate gastroduodenostomy and pyloric occlusion.

Dr. JOHN F. ERDMANN asked Dr. Peck if there were any preliminary digestive symptoms in the case reported. Personally he had had eleven or thirteen cases and in the majority of them there were no preliminary digestive symptoms whatever.

Dr. Peck said this was the eighth case he had had of perforated gastric or duodenal ulcer. The man presented gave no history of preceding digestive symptoms, but the other cases all gave a history of indigestion and at least two or three gave symptoms quite suggestive of ulcer. The case presented offered no technical difficulties and therefore was of no great credit to him. In some cases of perforation, the sewing was easy. But he did not get any leakage. By passing the suture deeply into the tissues and tying them just enough to get closure without cutting through, and burying all, one would get a satisfactory closure. He said he had had no experience with perforating duodenal ulcer except in one case, and he was therefore unable to draw any conclusions.

Dr. SAMUEL LLOYD said he would like to ask if any present had had any experience with gall-duct disturbances in these cases. He recalled one case with a preliminary jaundice and apparently the history pointed to difficulty along the gall-ducts, an obstruction of the gall-ducts.

Dr. Berg said, in answer to Dr. Lloyd, that he would look it up.

Dr. Peck said that no gall-duct disturbances had occurred in any of his cases.

Dr. ALEXANDER LYLE said that recently he had had a patient with jaundice and other symptoms which pointed to gall-bladder disturbances. She was operated upon for empyema of the gall-bladder, and he also found a perforation of the duodenum. The patient had gone on for one week or ten days after perforation and there was a large amount of induration present. The advisability of letting the mass alone at that time came up for consideration. The general abdominal cavity was walled off. Ten days later he went in with an aspirator and repacked; several repackings were done until the induration had disappeared and she was now well.

Gunshot Wound of the Abdomen, with Perforation of the Small Intestine, Bladder and Rectum; Laparotomy; Perineal Urethrotomy; Recovery.—Dr. HENRY ROTH presented a man, 46 years old, who was admitted to Lebanon Hospital October 2, 1907. About thirty minutes before admission he was shot at close range with a .38 caliber revolver, the bullet striking the anterior abdominal wall. He was able to walk across the street. The pain was insignificant. The temperature was subnormal and the pulse 80 and of good quality. He showed no evidences of anemia or shock. A perforation was found about one inch to the right and two and a half inches above the pubes. There was no wound of exit. A median incision was made between the umbilicus and pubes. The first loop of small intestines, which escaped after the peritoneum was incised, presented two perforations; they were about three feet from the ileocecal valve. About ten or more inches from the cecum two perforations were found in the ileum and two in the mesentery. The four perforations in the small intestines were closed with purse-string sutures, reinforced by Lembert sutures of silk, which were also used in closing the perforations in the mesentery. A perforation in the upper wall of the bladder was closed with Lembert sutures of silk. Another perforation was found in the posterior wall of the bladder and one in the anterior wall of the rectum. Both of these perforations were in the lower portion of the rectovesical pouch, and satisfactory suture was found to be impractical. A large cigarette drain was placed into the pouch with the projecting gauze in contact with the perforations of the bladder and rectum. The median incision was closed down to the drain. On account of strictures of the urethra and for the purpose of free drainage, a perineal urethrotomy was done and a No. 34 rubber catheter was left in the bladder. Two days

after the operation the bullet was removed from underneath the skin below the left-sacroiliac synchondrosis. It was presumed that the bullet took the following course through the viscera: After penetrating the peritoneum, it passed through a loop of bowel, causing two perforations; it then entered the upper wall of the bladder, passed through the viscus, causing a wound of exit. After its exit from the bladder, it caused two perforations in the small intestine, and two in the mesentery. It then went through the anterior wall of the rectum, traversed this organ, and out through the posterior wall of the rectum and pelvis, finally lodging underneath the skin. The bowels moved spontaneously on the fourth day after the operation, and on the ninth day after he passed urine voluntarily through the perineal incision. He was discharged from the hospital in November. His convalescence was practically uneventful except that, eleven days after the operation, he had an attack of anuria. Because of the hypodermoclysis a superficial necrosis resulted. The various wounds healed.

Dr. Alexis V. Moschcowitz said that one and a half years ago he had a case of gunshot wound of the abdomen and, with the exception of the injury to the bladder, the injuries otherwise resembled the case reported. A boy was shot with a gun, the point of entrance being two inches below the umbilicus and in the median line. At laparotomy eleven perforations were found, nine of them being in the small intestine, one in the rectum and one in the sigmoid flexure. There was no point of exit and he had never been able to locate the bullet. The presence of the bullet had given no symptoms whatever and the boy made a good recovery and was discharged twenty days after operation. Later symptoms of intestinal obstruction developed and there occurred many adhesions throughout the abdomen. After a serious siege the patient was again discharged cured.

Dr. Henry W. Berg asked how long after the last meal was the injury sustained.

Dr. Henry Roth replied that the man was shot at 10 A.M., and his last meal had been at 7 A.M.

Dr. Berg said that his reason for asking this question was that he thought the prognosis depended very much upon the length of time that elapsed between the last meal and receipt of the injury. It would seem that a wound received at the height of intestinal digestion gave a graver prognosis than if it was received a number of hours afterwards. At all events, he had a recent experience in which a gunshot wound was sustained within a half hour after the beginning of intestinal digestion, or two hours after the last meal was taken; a virulent peritonitis developed and the patient died.

Dr. John F. Erdmann said he had had an interesting case in his hospital service about three years ago. A woman was shot three and a half inches above the pubes in the central line. The bullet passed through the base of the bladder, through the vagina, through the rectum, and was picked up on the coccyx. A vaginorectal fistula was present, but the patient made a perfect recovery in a short time.

Dr. Henry Roth thought that the good result obtained was due to the fact that the patient was operated upon one and a half hours after he was shot. The greatest difficulty was in closing the perforation at the base of the bladder and anterior wall of the rectum.

Actinomycosis Six Years After Operation. — Dr. Henry W. Berg presented this case. The patient, a boy, came under observation six or seven years ago. A diagnosis of actinomycosis of the thoracic wall was made, this diagnosis being established by the presence of small but typical bodies and finding the fungus under the microscope. At that time he had an enormous discharging sinus in the anterior thoracic wall. On admission to the hospital he was poorly nourished. The fungus was obtained and the diagnosis established. After preliminary treatment an extensive operation was performed. Then almost the entire sternum was removed. The pleura was laid bare as well as the pericardium, and the mediastinum was exposed. Curettage was employed and the swabbing with iodine completed the operation. A secondary slight operation was necessary because of necrosed cartilage at the base of the sternum. Now, six years after the operation, the patient was entirely cured. The peculiar part of the operation was the almost complete regeneration of the sternum so as to cover the pericardium and pleura. He gained in strength and gave no symptoms of recurrence of the disease. He had been on iodide of potassium since leaving the hospital.

Head Trauma; Laceration of Cortical Face Center. — Dr. Clarence A. McWilliams presented a woman, 19 years old, who was brought by ambulance into the Presbyterian Hospital on August 24, 1906. She had fallen from a bridge, twenty feet high. She was unconscious for a few minutes and then became conscious, when she gave her name, etc. On admission she was unconscious and very restless. There was some bleeding from the nose, her pupils were small and equal and reacted to light. There was a moderate-sized hematoma over the left parietal region. No fracture of the vault was made out. Extending over the left mastoid region was a well marked ecchymosis. There was a fracture of the left clavicle. There were no paralyses, no loss of sensation, and the lower reflexes were normal. The patient was thought to have a fracture of the base. The temperature was 102°, pulse 80. Two days later, August 26, the patient was still stuporous and apparently unconscious of her surroundings. She had been so since admission. There was great restlessness and she could not be roused. The temperature was 101° and pulse 80. The left mastoid was very ecchymotic, as was also the right eyelid, but there was no subconjunctival hemorrhage. There were no focal symptoms. On August 27, the third day, the mental condition appeared to be a little clearer. Defecation and micturition were involuntary. The pulse was between 78 and 88, and temperature about 100°. There was thought to be a slight flattening of the right side of the face. On August 28, the fourth day, in the evening, she had a Jacksonian convulsion which began in the right corner of the mouth, then rapidly spread to the right eyelid, right hand, arm, and leg. The spasms were clonic and lasted about thirty minutes and were followed by complete relaxation. She acted in a wandering, unintelligible manner. The temperature was 100° and pulse 75. She had several of these convulsions during the night of the fourth day. On the morning of August 29, the fifth day, there was paralysis of the right side of the face with weakness of the right arm, though she was still able to move it. There were no definite sensory disturbances made out. The mental condition was stuporous, temperature 100°, pulse 76 and of good quality and regular. The leucocytes were 17,300 and polymorphonuclears were 75 per cent. The eye grounds were examined and appeared normal. There was no congestion of the retinal vessels. One ounce of perfectly clear fluid was obtained by lumbar puncture. During the afternoon of the fifth day, the convulsions came as often as every hour and it was decided to operate, and this was done during the evening of the fifth day after the fall, August 29, at 10:30 P.M. The fissure of Rolando on the left side was marked out and a curved horseshoe incision made. The trephine was applied about three and a half inches from the top of the fissure of Rolando. There was no epidural hemorrhage and no pulsation of the dura which bulged into the wound. On opening the dura, no hemorrhage was found and normal appearing brain bulged into the wound. A bipolar electrode was applied to the exposed brain area but there was no response in the right facial muscles. It was evident from this that they had

probably not uncovered the face center, that the trephine opening was too far posterior. The bone was rongeured away anteriorly for about two inches and on splitting the dura, an anteroposterior laceration of the cerebrum was exposed, three-quarters of an inch long and about half an inch deep. Stimulation of this lacerated area gave action, twitching of the face on the opposite side. In and about this laceration was some clotted blood. It was the opinion of the neurologists present that this laceration would account for all the symptoms presented. There was undoubtedly present a fracture of the base accompanied by more or less general edema of the brain. A slight laceration of the face center was caused by the original trauma. As the brain swelled from the increasing edema gradual increasing pressure was brought to bear on the laceration, whose edges yielded and rolled out from each other, thus enlarging it. The accompanying hemorrhage in and about the laceration by pressure helped to increase the progressive paralysis and the irritation thereby produced caused the convulsions. The dura was with difficulty sutured with catgut over the laceration because of the cerebral pressure. A small rubber drain was led through the dura to the laceration and brought out through the posterior angle of the skin wound, which was sutured with silk. The patient stood the operation well. She had numerous convulsions during the night following the operation. The last convulsion took place thirteen hours after the operation and she had had none since, it being now sixteen months since the injury. The second day her mental condition was much improved and she understood what she was asked to do. But she would not talk. The facial palsy was still present and the right arm was still weak. On the fifth day the face palsy was less, and on the tenth day face and arm paralysis had entirely disappeared. The speech was unintelligible although she was perfectly conscious. In three weeks there was a persistent difficulty in saying sentences which were intelligible throughout. The beginning of them would be intelligible and then the words would become jumbled together and incoherent. This was explained by the fact that the speaking and thinking centers became easily exhausted. It was two months before she regained full control of her speech. The wound healed by primary union. Examination now, sixteen months after the injury, showed no ill effects whatever. The skull defect was very firm. She had now no headaches nor eye defects, no weakness of facial or arm muscles, and her cerebration was as good as before the injury. This case illustrated the advantage of having an electrode present in head operations. Also the well-known fact that lacerations of important centers might heal perfectly and leave no ill effects. Also that the motor centers lay more in front of the fissure of Rolando than behind.

Dr. Samuel Lloyd had an experience with Jacksonian epilepsy some years ago which followed traumatism, and Dr. Hammond was asked to see. A cyst was found at the lower portion of the fissure of Rolando. The patient evidently had had hemorrhage which was followed by cystic degeneration around that area. This patient made a perfectly good recovery from the operation. Several days after, when making rounds, the nurse got things ready for dressing and he was informed that suddenly a hemorrhage came on. Dr. Lloyd hurried to the ward and found a profuse hemorrhage going on. He took down the external dressing and found that ordinary pressure would not control it. With his hands as they were he pushed his thumb into the lateral sinus, packed in iodoform gauze, carried the man to the operating room, cleaned up and repacked the wound. This man made a perfect recovery with no return of the Jacksonian epilepsy and without a suppuration of the wound. It was now eight or ten years since the operation and the patient had remained perfectly well.

Dr. Alexis V. Moschcowitz asked if it was not exceptionally rare to have attacks of Jacksonian epilepsy coming on so many days after fracture of the skull. From Dr. McWilliams's report one would expect to find paralysis of the face or what corresponded to that portion of the brain involved in the injury. It struck him as being particularly odd that typical attacks of Jacksonian epilepsy should come on so soon after a lacerating injury to the brain.

Dr. McWilliams answered that the patient had paralysis of the face and arm; the paralysis first appeared and then came on these attacks of Jacksonian epilepsy.

Dr. L. Pierce Clark, speaking in reference to the Faradic current and its application in such cases, said that two or three years ago he saw a case in Yonkers. This man had had an operation performed for some left-sided condition which was followed by Jacksonian fits and paralysis of the left arm and face. The inference was that some secondary lesion was present in the right motor area. An operation was undertaken on that side. There appeared a great deal of bulging, but probing the cortex revealed no abscess or other lesions whatever. The Faradic battery was applied, and the cortex stimulated and it was learned that the left face and arm did not move, but that the right did. This was an uncrossed case, a rare condition, of course, and it showed the importance of the Faradic battery.

Dr. Thomas P. Prout discussed the paper.

Nerve Bridging, with a Report of a Successful Case.—Dr. Alfred S. Taylor read this communication. To help the nerve ends to grow together various expedients had been used and might be classified as follows: (1) Neuroplasty, where one or both of the nerve ends were so split and turned over as to meet and bridge the gap. (2) Grafting or nerve-transplantation, where a section of nerve from the same or another individual, or even from one of the lower animals, was made to fill the gap by suturing its ends to those of the divided nerve. (3) Tubulization, where a tube was used to connect the two nerve ends to prevent the ingrowth of connective tissue during the development of the new nerve tissue which was to form the permanent bridge. (4) Suture *à distance* where a catgut suture was passed from one nerve end to the other several times, forming a framework between the two. With this was often combined one of the tubulization methods. (5) Resection of bone, where enough bone was removed to permit direct end-to-end suture of the nerve. (6) Lateral implantation of both proximal and distal stumps of the damaged nerve into a neighboring motor nerve. It was well established that materials interposed between the nerve ends acted only as guides which degenerated and were absorbed as the new nerve grew. Dr. Taylor reported a case representing the successful bridging of a 2 cm. gap in each of the roots of the brachial plexus, by means of a suture *à distance* combined with a modified tubulization due to the use of the Cargyle membrane. The case was a most favorable one because of the very excellent general condition, and the early age of the child. Nerve tissue bridged a gap at the rate of ¼ mm. per day. As a rule failure would follow any attempt to bridge a gap more than 4 cm. Authentic cases of nerve regeneration with return of motor power had been reported where the paralysis had continued for five, ten, fifteen, and even twenty-nine years before operation. The following was his summary: (1) The literature of nerve surgery was not well indexed. Case reports gave results in very general terms, often because of the difficulty of tracing cases and making systematic examinations over the long periods of time necessary. (2) Much experimental work was still necessary to determine the best technique for the solution of the various problems in nerve surgery. (3) Nerve defects could be bridged. Judging from the materials at hand, suture à distance offered the simplest and most successful method. (4) The younger the patient and the bet-

ter the general condition, the more hopeful was the result. (5) Results came only a long time after operation and depended for completeness upon massage, passive motion, electricity, etc. (6) Probabilities were against the bridging of gaps greater than 4 cm., although a few cases had been reported. (7) For defects larger than 4 cm. resection of bone or lateral implantation of nerve ends might be used. Good muscle power with bone deformity in an extremity was much to be preferred to complete or serious paralysis.

Dr. L. Pierce Clark confined his remarks to some experimental work in progress of completion. Some three years ago it occurred to him that to further substantiate the clinical advantages of end to side anastomosis in the human, experimental studies of the problem on animals would be very valuable. The condition of the experiments were to approximate those in man. The whole subject of repair in anastomosis was to be subjected to careful histological review. It was necessary in so delicate a structure as nerve tissue that any surgical procedure involving it should be conducted with the least possible traumatism. This would indicate the greatest care in the manipulation of the nerve and the use of such suture material as would inflict the least damage to nerve and sheath at the time of operation, and would finally be absorbed, leaving no foreign substance in or about the nerve. In the usual method of lateral anastomosis, the ingraft was held by two sutures of fine silk, the silk being passed transversely through the sheath of the nerve to be ingrafted. In doing this it was impossible not to include some nerve fibers, and when these sutures were tied the function of the fibers so included was permanently destroyed or impaired. The smaller the nerve the greater the chance of including the fibers and the greater the proportionate damage. The technique they followed was to make the usual slit into the nerve sheath. The edges of the slit were raised and a suture was passed from *without in*. This same needle was then passed through the sheath of the ingraft and finally through the opposite of the slit sheath from *within out*. On drawing the suture the ingraft was forced into the incision and by forceps the end might be adjusted and the suture tied. They used three kinds of suture, silk, kangaroo tendon, and rat-tail tendon. Rat-tail tendon was obtained in strands from four to six inches in length. It had a remarkable tensile strength, its surface was smooth and regular, and it was very pliable. It absorbed in from nine to fourteen days, sufficiently long for union to take place. The advantages of this method he summed up as follows: A minimum manipulation of the nerves to be united. The ingraft had but one suture through it. It was an absorbable suture which left no foreign material encapsulated. There was a tendency of the tied suture to draw the sheath over the ingraft. From a neurological standpoint there could be no doubt that the final result in clinical work was absolutely dependent upon the nicety of surgical technique, as had been shown in the treatment of different palsies.

Dr. Thomas P. Prout said he wished to emphasize the necessity of the after-treatment in these cases. He saw the other day a case of injury to the brachial plexus; a man had received an injury of the sixth root of that plexus and he had been operated upon by a surgeon of this city four months ago. The after-treatment had been neglected and the result was bad. As a matter of fact the operation would accomplish nothing except the approximation of the nerve ends unless one employed electricity, massage, and passive motion. He doubted very much the ability of the nerve to grow distally to the extent of two or three inches.

Dr. Dunlap pictured on the blackboard the results of the implantation of one nerve into another and showed that fibers did grow into the ingraft, and that there was such a possibility for certain pathways to exist. The sheaths did unite, and the fibers could, without any doubt, grow into the implanted nerve. Drawings of nerve fibers stained black with Weigert's stain were shown.

Dr. Charles E. Atwood said this was a very important subject, more so at present because of the fact that in New York City there were between two and three thousand cases of poliomyelitis, and a number of these cases would require orthopedic attention, with muscle and nerve implantation.

Dr. Charles E. Elsberg said that one should not lose hope if a number of months passed before the first signs of improvement were noted. He had had an interesting experience recently. Eight or nine months ago he did an anastomosis of the spinal accessory in a case of facial palsy. Treatment by electricity and massage was carried out without apparent improvement. The patient grew disgusted and did not appear until two months ago with a marked improvement, which began only during the last month. With regard to the technique, he said one should leave a little bit of tissue around the nerve and handle the nerve by means of it. In the case recorded, he left a little bit of muscle and so was enabled to handle the nerve without using forceps at all.

Dr. Taylor said that if they could do an anastomosis without any strain upon the sutures, almost any suture material would do, such as fine silk. Silk was absorbed; its fibers became infiltrated with leucocytes which caused it to disappear. If there was any tension upon the sutures, silk would not do. In 1903 the *British Medical Journal* reported a considerable amount of this work, and microscopical slides were shown demonstrating a proximal trunk actually split into a fork, one portion of the fibers running into it while the other ran down into the trunk.

The Clinical Significance of McBurney's Point.—Dr. Arnold Sturmdorf read this paper. He said that, regarding this, Dr. McBurney wrote as follows: "The exact locality of the greatest sensitiveness to pressure has seemed to me to be usually one of importance. Whatever may be the position of the healthy appendix as found in the deadhouse, and I am well aware that its position when uninflamed varies greatly, I have found in all my operations that it lay either thickened, shortened or adherent very close to its attachment to the cecum. This, of course, must in the early stages of the disease determine the seat of greatest pain on pressure, and I believe that in every case the seat of greatest pain, determined by the pressure of one finger, has been exactly between an inch and a half and two inches from the anterior superior spinous process of the ilium on a straight line drawn from that process to the umbilicus. This may appear to be an affectation of accuracy, but as far as my experience goes the observation is correct." Antedating the adoption of present-day methods, the introduction of McBurney's point marked an epoch and a phase in the evolution of their mastery over appendicitis; nevertheless, while it served to blaze the path through the mazes of earlier controversies it had proven an equally patent factor in leading to error and fruitless mutilation. McBurney's point, vested with pathognomonic dignity for almost two decades, must be relegated to the humble rank of a possible contributory diagnostic factor. While it was true today, as it was twenty years ago, that a typical McBurney's point might be present in a typical appendicitis, it was equally true that appendicitis might exist in the absence of a McBurney's point, and, most important, a typical McBurney's point might be present in the absence of appendiceal involvement. Much information of an empirical nature, gleaned from the observations of Ross, MacKenzie, Head, and others, on the distribution and character of the pain in visceral disease had not found general clinical utilization. Ross contended that in visceral disturbances pain or tenderness radiated along

the distribution of the somatic nerves springing from that segment of the cord which supplied the sympathetic fibers to the affected area. MacKenzie and Head defined certain areas which correspond to the cutaneous termination of the pain fibers springing from the cord segment involved by the disturbed viscus. These men had established one clinical fact, that any given point of pain might be either the direct expression of a contiguous disturbance or the transmitted manifestation of a distant lesion. In other words, an existing McBurney's point might represent the direct pain of a disturbance within its own area, or the reflected pain focus of a distant lesion. Head insisted upon the gentlest possible tactile exploration of the cutaneous surface, eliciting superficial areas of pain only; while McBurney's method, the direct pressure of one finger, of necessity elecited both superficial and deep-seated pain points at the same time. Therefore, it followed that there were two McBurny's points, one superficial, the other deep. The superficial pain point presented all the characteristics of Head's so-called "referred pain points" indicating a disturbance beyond the limits of their own area; while the deep or direct pain point, when present, would be found to indicate a local disturbance within its immediate vicinity.

Dr. Robert T. Morris said that for the most part McBurney's point served them. They did get a definite tenderness at that point in acute infections. It was also true that tenderness at McBurney's point might be reflected from the right side of the abdomen, but not from the right pelvis, a point that, so far as he knew, was not made by authors. If there was an inflammation of the appendix they had a hyperesthesia over the border of the right lumbar plexus, but not of the left one. If there was an inflammation of the right oviduct both lumbar plexuses were hyperesthetic together, and not singly, so far as his observations went.

Dr. Samuel Lloyd said that he believed McBurney's point did much harm and he himself placed absolutely no dependence upon it.

Dr. Sturmdorf closed the discussion.

Election of Officers.—*Chairman*, Dr. Charles H. Peck; *Secretary*, Dr. W. A. Downes.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held December 26, 1907.

Dr. Herman J. Boldt, Chairman Pro Tem.

A Case of Pubiotomy.—Dr. Sidney D. Jacobson presented a patient who was admitted to the hospital September 17, 1907. She was of medium height and weight and showed evidences of rickets occurring in early life. She was forty-two years old and a primipara. She had been in labor for thirty-six hours and her pains when admitted came on every three minutes. The uterus was apparently the size of full term. The fetus occupied the right dorso-anterior position and presenting with the head. The head above the pelvic brim was quite movable and Hofmeier's method of making it engage was unsuccessful. The fetal heart sounds were somewhat muffled, with a rate of 176. The vulva was edematous and the vagina hot, dry, and swollen. The cervix was open to the extent of admitting three fingers. Attempts at manual dilatation were unsuccessful. The bag of waters had ruptured some hours prior to admission and had drained away. The child's head could not be made to enter and engage in the pelvic ring, being entirely above the brim. It approximated the position R. O. A., but would not retain it. On examination of the pelvis it was decided that the patient had a generally contracted rachitic pelvis, with a true conjugate estimated to be three and a quarter inches long. Natural delivery was impossible. High forceps would have been fruitless. Perforation of the child's head was unjustifiable, and cesarean section was contraindicated because the uterus was already, at least theoretically, infected and would have given a live child but a dead mother, so pubiotomy was the logical operation done. This was done on the left side by the subcutaneous method of Döderlein. After the bone had been divided with the Gigli saw, the child was delivered by aid of high forceps in good condition. The hemorrhage was considerable. The placenta was removed manually. The bladder escaped injury. Intravenous infusion was given. There were lateral tears in the cervix of medium severity. The vagina was torn in its left upper portion and the cut ends of the bone separated about one and a half inches and could be felt by the examining finger. No sutures were introduced. The uterus and vagina were packed with sterile gauze. To prevent too wide a separation of the cut ends of the pubic bone, three strips of adhesive plaster two and a half inches wide and closed in front by attached tapes were placed around the pelvis before the section and tied securely. Much stress was laid upon the important point of keeping the patient's toes turned inwards during the bone section. It was astonishing how well one could then control the amount of bone separation by the degree of inversion of the feet. The feet were tied together for one week in this position and this, besides the three adhesive strips around the pelvis, was the only means used to partly immobilize the pelvis. The patient made a smooth recovery. She nursed her baby. Sixteen days after the operation the patient left her bed. On the eighteenth day she left the hospital and on the twenty-first day she was met on the street pushing her baby carriage. Her walking was perfectly natural. He expressed the hope that pubiotomy might find its way into more general favor.

Dr. Achilles Rose protested against the name pubiotomy; he considered this a barbarous term; it was a hybrid that should not be used in scientific literature, because it was unscientific.

Report of a Case of Interstitial Pregnancy.—Dr. Herman Grad reported a case of pregnancy occurring in the horn of the uterus and the uterine end of the Fallopian tube. This was presented in order to bring about a discussion of this form of pregnancy, which was not entirely ectopic nor strictly speaking intrauterine. He believed the term "apical pregnancy" would more clearly define these cases. In this type of pregnancy the impregnated ovum began to develop partly in the uterine end of the tube and partly in the horn of the uterus. As pregnancy advanced the case might become the ectopic type or an intrauterine one, depending upon the developing ovum encroaching more upon the tubal or uterine side of its bed. If the tube was encroached upon, the case might terminate in an ectopic gestation; if the ovum grew in the direction of the uterus, it might become an intrauterine one, and might terminate in normal labor. Many of these cases necessarily escaped diagnosis and detection. It was only in the cases where the early months of pregnancy were marked by severe pain and an examination was made that the condition of apical pregnancy was diagnosticated. Many of these cases terminated in miscarriage and were never diagnosed. The case reported taught that, given a case of pregnancy presenting abnormal and unusual symptoms, in making a diagnosis one must bear in mind not only the possibility of an ectopic gestation and pathological states of intrauterine pregnancy, but also a class of pregnancies occurring in the horn of a normal uterus, for which he suggested the term of "apical pregnancy."

Dr. S. Marx asked if the Section thought it would be proper to have the report of this case go on record as one of interstitial pregnancy. This report recalled to his mind a number of cases that he had seen, and one in

particular that was reported by a colleague in which the fetus escaped into the uterine cavity and the secundines were still in the tube. It was proven that primarily they were dealing with a tubal pregnancy, with the escape of the fetus into the uterine cavity. Soon after a similar case was seen presenting the same phenomena. The fetus was found to be hanging into the uterine cavity and the secundines were still in the tube. Cases of interstitial pregnancies were fraught with terrible accidents, so much so that one could hardly believe that they were dealing with one without the occurrence of fearful results. He reported the case of a young woman who was pregnant about three months and who bled continuously. The physician in charge wisely considered the induction of abortion; divulsion was performed with a steel dilator and the organ packed with gauze. The day following, when he expected to repack her, when he withdrew the gauze he found intestines in the vagina. She was sent to the hospital. Dr. Marx did not believe that so much intestine could present in the vagina. The amount of destruction of that fetus was as though it had been blown up by dynamite. The destruction occurring in interstitial pregnancies was very great.

Dr. A. Brothers said that he too would hesitate to accept the diagnosis of interstitial pregnancy as correct. He had had one experience during the past year, an unusual case in which there was no question that the fetal implantation took place in one cavity at the *cornus uteri*. He would not consider that a case of interstitial pregnancy, but an impregnation in one horn of the uterus. Some years ago, when the use of electricity was much in vogue, in 1888, he had a case of tubouterine pregnancy; with the finger he could feel the ovum protruding into the uterine cavity.

Dr. H. Grad said that the case was one of tubouterine pregnancy. Apical pregnancy he believed should be the term to use. The ovum started in the horn of the uterus and dilated that portion of it, and felt like a fibroid. He did not believe it was a case of true interstitial pregnancy. If it had gone on it might have terminated in true labor. The uterine cavity was empty. The fetus broke through and came away per vaginam. It was not a pregnancy in the tube; it was a case of pregnancy occurring in the horn of the uterus.

Abdominal Extirpation of Myomatous Uterus for Life Endangering Bleeding.—Dr. Herman J. Boldt reported the instance of a woman who had been bleeding profusely for a period of three months. She alleged that she had been curetted several times, the diagnosis of an incomplete abortion having been made. When seen her hemoglobin was reduced to 20 per cent. Vaginal tamponing was useless. The temperature varied from 101° to 103° F., which was caused by a septic process in the submucous tumor. As demonstrated on the specimen, the only way to cope successfully with the uterus, which was invaded by an intimately adherent submucous tumor, and a subperitoneal tumor, was to do a radical operation. The abdominal route was resorted to because of the very low condition of the patient, although it probably could have been done successfully by the vaginal route, despite the fact that the tumor reached nearly to the umbilicus. Yet by selecting the vaginal route the operation would have required more time, and the object was to operate as rapidly as possible. The time consumed was a little less than twenty minutes. An uninterrupted convalescence ensued.

Myoma of the Uterus; Myomectomy Done as a Preventive for Threatened Abortion.—Dr. Herman J. Boldt said that after an extensive search of the literature he had not been able to find another instance for which a deliberate excision of a myoma was done with the view of perhaps preventing an impending abortion. The case was therefore unique so far as he could ascertain. The patient was thirty years old, had been married three months, and consulted him on June 11, 1907. Her last menstruation occurred on April 4. For the last five years she had had pain in the lower left abdomen. On June 5 she commenced to spot and consulted a physician, who informed her that she had a tumor which required operation. The spotting continued until June 10, when she consulted Dr. Boldt as to the necessity of an operation. Examination showed the presence of a fairly large myoma in the lower segment of the uterus, on its anterior surface, complicating a pregnancy at about the third month, judging from the size of the uterus. The woman being very anxious to have a child, the advice was given not to have the gestation interrupted, but to enter a hospital near the termination of the gestation period and then, in case the myoma was an impediment to delivery, have a cesarean section done. On June 19 she again consulted Dr. Boldt complaining of labor-like pain and a return of the spotting. The occurrence of an abortion was imminent. It was believed by him that the cause of the impending abortion was due to the pressure that the myoma exerted. She was advised to enter the hospital at once and be operated upon. The operation he proposed to do was a myomectomy; this might perhaps retain the fetus for her by relieving her of the tumor pressure. She was given at the time a dose of morphine to stop the pain and then she went to the hospital. Operation was done on June 20. The position of the tumor practically divided the uterus into two halves. The neoplasm dipped deeply into the myometrium, as might be seen in the specimen. Immediately after enucleation of the growth, it was evident to all who witnessed the operation that the uterus began to assume its normal configuration, and by the time that the wound had been sutured the shape of the organ was normal. For the first week after operation morphine was administered in sufficient quantity to prevent the pains of labor. The woman made an excellent recovery. She was examined by Dr. Boldt December 26 and was found to be in perfect condition. Being in poor circumstances, she was advised to enter a maternity hospital to be confined.

Dr. A. Brothers referred to a case that he had presented to the New York Obstetrical Society two years ago. This woman had visited his office with her husband and was willing to submit to operation provided she had a living child. She was taken to the hospital, where Dr. Brothers removed five tumors varying in size from a cocoanut to a walnut, and some being pedunculated. She was under observation for three weeks, when she left the hospital with her pregnancy uninterrupted. She went to term and was delivered of a child. The indications were not those of a threatened abortion, but signs of it might have been presented at any time.

Dr. James N. West thought the men who reported these cases should be congratulated upon the successful outcome. Most would think that instead of preventing an abortion it would precipitate it. Dr. Duncan Abbott removed several tumors with the idea of preserving the fetus. This woman went to term and was delivered of a healthy child. Dr. West said that he had had thirty-three abdominal myomectomies and many of them were not in condition to become pregnant. Out of that number there were three that became pregnant and gave birth to living children at term. In one of these cases he removed sixteen tumors.

Dr. S. Marx thought the interesting part of this discussion was the success that attended the myomectomies. That was a clear indication for operation, but there were so many cases of uterine rupture on record following this operation that he asked the chairman, Dr. Boldt, to report the progress of his case at the next meeting.

Dr. A. Ernest Gallant and Dr. Achilles Rose discussed the specimen.

[In a letter, dated December 30, Dr. Boldt stated

to the reporter that the house physician of the Sloane Maternity had just informed him that this woman had been delivered of an eight and a half pound child, with normal labor, terminated with low forceps.]

The Prophylaxis and Treatment of Prolapse of the Uterus.—Dr. James N. West read this paper. He said that with the increased development of the brain which comparative ethnologists showed to have taken place in the civilized nations, and the consequent increase in the size of the fetal head, there had been unfortunately no corresponding development of the pelvis to accommodate them. On the contrary, the habits of women in civilized communities were such as to add to the difficulties of parturition caused by the large heads, those of small and more or less contracted pelves. To these obstacles to labor was further added that of the increase in rigidity of the muscles as well as of the articulations of the pelvic bones due to late child bearing. Nature tended to hold to a certain type and measure, for the larger the fetal head and the more imperfect the maternal mechanism of reproduction, the greater would be the fetal as well as the maternal mortality in parturition, and also more frequent would be the maternal injuries and secondarily the establishment of pathological conditions which would prevent conception. The future promised no cessation of these difficulties, but rather their increase. Among the disabling and painful conditions which might be traced chiefly to the injuries of parturition, prolapse of the uterus was one of the most striking and most difficult to cure. It was as a rule so very much easier to arrest a prolapse in its early stages and to prevent its occurrence than to cure it when once established, that it was chiefly his hope of doing some good by calling attention to this fact that had tempted him to present this subject. He then presented in brief his conception of the forces which maintained the uterus in its normal position. There were two sets of direct supports, first, those which suspended the uterus and other pelvic organs within the pelvis, and secondly, the muscles and fascia which closed the pelvic outlet and acted as a buttress or reinforcement of the intrapelvic supports. It was not necessary that there should be an actual solution of continuity in any of the structures constituting the ordinary supports of the pelvic organs, but a superimposed weight might be too great for their natural strength, or a loss of tone in the structures themselves might be such as to cause them to fail in their function of supporting organs of normal weight. He called attention to the great importance of an appreciation of these supporting structures and of the connective tissue especially. He quoted Savage as saying that a permanent cure of uterine prolapse depended chiefly upon the elastic qualities of subperitoneal pelvic connective tissue. The latter always retained its relations with the displaced organs as well as with the pelvic vessels. Owing to the slow progress of the prolapse, the connective tissue yielded to an enormous extent; but the fibro-elastic elements of its structure would very often enable it to return eventually to its normal condition if relieved from the weight of its prolapse. The conditions which favored overstretching of the pelvic connective tissue and prolapse were: (1) A solution of continuity of greater or less degree of the muscles and fascia of the pelvic floor. (2) Conditions which caused loss of tone or resiliency, as inflammatory conditions, the presence of necrotic material in the uterus, obstructions to the local circulation, and constitutional conditions. (3) Those which caused an increase of weight in the pelvic organs beyond which their supports were intended to bear, as tumors or subinvolution. (4) Alterations in the position of the uterus in regard to the direction of its long axis and consequent alteration of the effect of intraabdominal pressure. All or any of these conditions might exist in combination. The axis of the vagina was such that intrapelvic pressure was at right angles to it, and its full force was met at every point by the powerful levator ani muscle and fascia and muscles of the perineum. When these structures were lacerated, the direction of the intra-abdominal force became more or less straight instead of oblique, and, the lower supports being removed, the whole strain fell upon the intrapelvic ligaments and connective tissue. When these began to stretch and give way, the cervix swung further in towards the pubes and the fundus backwards and the first long stride toward procidentia began. The first important step in the prophylaxis in such cases was early and thorough repair of the perineum. Dr. West said he was convinced that no common operation was so little understood and met with such uniform failure as that of repair of the perineum after laceration. He believed that every case of abortion should be curetted, the uterus thoroughly washed out and painted with pure carbolic so soon as it was positively ascertained that the abortion was inevitable and the cervix had been dilated. Under the head of obstructions, laceration of the cervix was a most frequent cause, also inducing a great number of cases of endometritis fungosa. Such lacerations as were of sufficient extent to cause symptoms should be repaired within the first six months and in most instances should be accompanied by a light curettage. The constitutional and local treatment should not be neglected. Retroversion was almost always a necessary stage in the course of the formation of prolapse which led to procidentia. A very large proportion of the retroversions following labor or abortion were easily preventable. Dr. West found the most frequent cause of retroversion to be due to the uterus having settled back into the hollow of the sacrum after labor. Such a displacement should be corrected and the uterus held forward by artificial supports. Every woman after confinement at term or abortion should be examined several times at intervals of about five days to ascertain whether the uterus was coming to its proper position or not. This was one of the most fruitful fields of prophylaxis against prolapse and procidentia. In the aged and infirm and in those with certain complicating diseases those far beyond the reach of operative interference must of necessity be treated in a palliative way, and resort must be had to decubitus, pessaries, balls, etc. The cases that were operable had called forth the greatest ingenuity and the most strenuous endeavor for their relief. An absolutely satisfactory operative procedure had not yet been devised. Dr. West then presented some of the more radical measures as given by Döderlein and Krönig. Some of the most miserable human beings Dr. West had ever seen had been women upon whom the removal of the vagina, uterus, and ovaries had been done for prolapse. In the bad cases Dr. West advocated a long preparation by rest in bed with the foot elevated, and copious astringent hot douches, scientific massage, a good and nutritious diet, tonics, etc. Under such a treatment ulcers of the vagina or cervix would heal, involution would take place in all the hypertrophied structures, and the pelvic connective tissue would in a large measure regain its tone and the organs their natural relations. When the maximum amount of benefit had been attained, the patient was ready for operation. In most cases the levator ani and perineæ were carefully repaired, and the anterior wall had a radical operation done upon it. Often the cervix was amputated and a ventral fixation of the uterus made. Some variations were sometimes made, but it had been his good fortune to have cured, absolutely, a fair number of very bad cases of complete procidentia, without using any of the destructive deforming operations. He made an appeal for a more thorough prophylaxis and a rational operative procedure which should have for its chief aim a restoration to natural conditions.

Dr. Samuel W. Bandler emphasized the necessity for

prophylaxis, and said that subinvolution after labor required, not two or three weeks, but perhaps six months' care on the part of the physician. Before the patient was restored to normal as regarded the nervous system, the abdominal and pelvic organs, etc., months would be required and not weeks. A type he called attention to was the neurasthenic, one with lax abdominal walls. Attention should be paid not only to the ligaments of the pelvis, but of the entire body. The normal uterus was a fairly horizontal one and was held in place by six ligaments, which he demonstrated on the blackboard. The use of the pessary was of the greatest value and should be used for four weeks; this was a long stride in the prevention of the descent of the uterus. Associated with these cases one found a general ptosis, *i.e.* a gastroptosis, an enteroptosis, movable kidney, etc. In such conditions care was demanded for weeks, months and even years, with the use of the pessary, administration of ergot, proper food and exercise, baths, and doing all possible to get a good circulation.

Dr. A. Ernest Gallant and Dr. Sidney D. Jacobson discussed the paper.

Dr. West closed the discussion.

The Management of Febrile Conditions after Abortion and Labor.—Dr. Abram Brothers read this paper. He said that opinions varied greatly as to the bacteriology of the uterine interior after delivery. Some observers told them the uterine discharge was sterile in from 64 to 100 per cent. of the cases after delivery; others in 0 to 36 per cent. (Little). As to treatment, the same diversity of opinion existed. In spite of this, institutional statistics, which showed a mortality fifty years ago of 20 to 30 per cent., were now reduced to one death in 1,000 or less. On the other hand, the mortality in private practice, especially in the tenement districts, was the same as it was a quarter of a century ago. While occasionally autoinfection was responsible for sepsis, there should be no let-up in holding the midwife or accoucheur strictly to account until private statistics showed the same low rate of puerperal infection that they got in institutions. Sapremia after abortion could be treated more thoroughly with the curette than when the same condition occurred at full term. Still after abortion (especially the criminal variety) fevers might be also due to bacteriemia, parametric exudates, purulent collections in the Fallopian tubes or peritoneal cavity (usually in Douglas' cul-de-sac), occasionally to necrotic or suppurating fibroids, and to varying grades of peritonitis. Often several of these conditions were combined in the same case. The puerperal fevers proper were to-day divided into two main groups, the toxemias and the bacteriemias. For clinical purposes he had studied these cases during the past twenty or more years under four heads, as follows:

1. Fever due to retention of infected placenta débris or blood clots. These cases regularly got well after cleaning the uterus of placental débris.

2. Fever due to pelvic inflammation. These were the cases with exudates and might be associated with or follow the first group. Unless there was anything in the uterine cavity they should be left severely alone, and, unless the parametric exudate broke down and formed pus, these patients regularly got well.

3. Fever due to bacteriemia (septicemia). In this group (and the next) the blood and lymph systems were saturated to a greater or less degree with the bacteria themselves and not with their toxins. Before delivery such septic cases regularly died and probably nothing short of a timely cesarean section and hysterectomy offered them any hope. He had not had good results from hysterectomy in pure bacteriemia nor (in one case) from the ligation of the ovarian and internal iliac veins where pelvic thrombosis was diagnosticated. Opsonic vaccine and antistreptococcic serum had so far not proven of great avail. Neither had saline or chemical intravenous infusions proven of much benefit. These patients should be freely stimulated, nourished and supported, and their chances under these methods seemed about equal with those following the operative methods for their relief so far discovered. An exception might be made to the gonorrheal cases, especially with pus foci in the tubes or peritoneal cavity. Phlegmasia alba dolens was also included in this group, although it represented a mild disease from which the patients regularly got well under simple rest.

4 Fevers due to general peritonitis. These cases presented the worst kind of prognosis, especially the fulminating types. They presented the same appalling picture familiar to abdominal surgeons after some infections. Unless in the earliest stages or with uterine abscess, he failed to see any benefit from hysterectomy. Cyrille Jeannin had published 121 cases of general puerperal peritonitis subjected to surgical treatment, with 60 recoveries and 61 deaths. Therefore, it was fair to assume that, in proper hands, a laparotomy was proper in cases of puerperal peritonitis, provided that the septic process had not already invaded the lungs or other distant organs. Still, he had never known cases, perhaps of a less virulent type, to occasionally subside spontaneously and the patients to get well. Cases with local suppuration, whether the pus pocket lay between the coils of intestines or in the pouch of Douglas, always required operation.

Resolution.—It was moved and seconded that, because of the importance of Dr. Brothers' paper and the lateness of the hour, Dr. Brothers be requested to prepare a brief abstract of the paper and present it at the next meeting, in order that a proper discussion might take place. This was unanimously carried.

Philadelphia Neurological Society.

At a stated meeting held November 26 Dr. Spencer M Free of Dubois, Pa., presented three patients illustrating the types of "Acute Anterior Poliomyelitis" observed during the recent epidemic of the disease. In one there had been involvement of all four extremities, with almost complete recovery. In the others the improvement had been less complete, and there were varying degrees of disability, in upper as well as in lower extremities. The palsy did not appear at the same period of the disease in all cases, in some instances being an initial phenomenon and in others not becoming evident till later. Dr. C. S. Potts presented "A Case of Acute Anterior Poliomyelitis with Involvement of the Muscles of the Chest." There was an extraordinary degree of atrophy of all of the muscles, with marked weakness, but without winging of the scapulæ. Dr. S. D. Ingham presented "A Case of an Old Acute Anterior Poliomyelitis followed by Atrophy of the Muscles of the Hand and Face." Dr. Alfred Gordon presented "A Case of Polioencephalitis Inferior." The patient was a woman who exhibited mutism, together with atrophy of the tongue, fibrillary tremor, and reaction of degeneration. Dr. T. H. Weisenburg presented "A Case of Hereditary External Ophthalmoplegia." The patient was a girl about seven years old, whose mother and grandmother had presented a similar condition. There was bilateral ptosis and complete inability to move the eyes in any direction. Dr. Wharton Sinkler presented a communication entitled "The Poliomyelitis Epidemic in Philadelphia." He showed by figures collected from several of the hospitals that there had been a marked increase in the number of cases of acute anterior poliomyelitis treated during the past summer. He had many years ago pointed out that the disease is peculiarly one of the warm season, and this observation has been confirmed repeatedly. Epidemics have been reported on several occasions. The disease must from the evidence be con-

sidered an infectious one, although the actual etiological factor has not been demonstrated. Dr. SPENCER M. FREE of Dubois, Pa., presented by invitation a communication entitled "The Poliomyelitis Epidemic in the State." He gave a description of the mode of onset and of the symptoms observed in the cases in his town and county. There had been several deaths, but no post-mortem examination. Dr. R. S. MCCOMBS read "A Study of the Cases of Acute Anterior Poliomyelitis at the Children's Hospital." He noted the increased number of cases, particularly of recent origin, many of them coming from a limited section of the city, although some came also from distant and widely separated points.

COLLEGE OF PHYSICIANS OF PHILADELPHIA: SECTION ON OTOLOGY AND LARYNGOLOGY.

AT a stated meeting held November 20, Dr. G. HUDSON MAKUEN presented a larynx from a three months' old infant in whom death had occurred from stenosis from an undetermined cause. Without premonitory symptoms dyspnea and cyanosis made their appearance, from which intubation failed to afford relief. Tracheotomy was advised but the parents withheld assent. The thymus gland was enlarged. Among the possible causes for the condition suggested were new growth, thymic asthma, or lymphatism, hernia of a ventricular band, aspiration of the epiglottis. Dr. CHEVALIER JACKSON of Pittsburg delivered by invitation an address on "The Bronchoscope in the Removal of Foreign Bodies from the Upper Air-passages." Dr. Jackson demonstrated the technique of introducing the instruments employed and related a number of cases in which foreign bodies in the air-passages were discovered and subsequently removed with the aid of the bronchoscope. He also discussed the possibilities of this mode of diagnosis in the recognition of ulceration in the trachea and bronchial tubes and of conditions of the stomach by means of the gastroscope. Cocaine anesthesia is sufficient for purposes of examination, but chloroform anesthesia is necessary when operation is required. Dr. JOHN W. ROYCE pointed out the necessity for having absolute control of the patient subjected to the examination or operation, so that his head and neck are adjusted to the various manipulations of the operator, as the instruments employed are straight. The assistant must anticipate every movement of the operator so that no obstruction is encountered at any point. Dr. GEORGE MCCLELLAN discussed the anatomical relations of the parts concerned, while Dr. JOHN H. GIBBON and Dr. WM. L. RODMAN discussed the subject from the surgical standpoint, and Dr. JAMES C. WILSON and Dr. JAMES TYSON discussed it from the medical standpoint. Dr. W. M. LATE COPLIN presented a consideration of the pathology of the structures concerned, and Dr. G. E. PFAHLER spoke of the application of the *x*-ray in the diagnosis of the conditions under consideration.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

ANALYTIQUE DE L'ESPRIT HUMAIN ET DE LA VIE. By Dr. J. A. MOLINIE. 12mo, 128 pages, paper. Vigot Frères, Editeurs, Paris.

COMMENT ÉPURER SON EAU. Par F. MALMEJAC. 12mo, 216 pages, muslin. Vigot Frères, Editeurs, Paris.

LE CRIMINEL. Par le Dr. ÉMILE LAURENT. 12mo, 246 pages, paper. Vigot Fréres, Editeurs, Paris.

TECHNIQUE CHIRURGICALE JOURNALIÈRE AU LIT DU MALADE. Par le Dr. ADRIEN BESSON. 8vo, 249 pages, paper. Vigot Frères, Paris.

SQUIBB'S MATERIA MEDICA, 1908 PRICE LIST. 12mo, 402 pages, muslin.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 18, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	402	181
Diphtheria	406	43
Measles	803	25
Scarlet Fever	585	37
Smallpox	..	..
Varicella	169	1
Typhoid Fever	36	2
Whooping Cough	14	1
Cerebrospinal Meningitis	13	11
Malarial Fever	..	..
Totals	2428	301

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending January 17, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Dec. 21–Jan. 4	16	..
Illinois, Alton	Dec. 23–30	1	..
Danville	Dec. 30–Jan. 6	1	..
Springfield	Dec. 26–Jan. 9	29	..
Indiana, Elkhart	Dec. 28–Jan. 4	1	..
Muncie	Dec. 28–Jan. 4	1	..
Kansas, Kansas City	Dec. 28–Jan. 4	1	Imported
Kentucky, Covington	Dec. 28–Jan. 11	6	..
Louisiana, New Orleans	Dec. 28–Jan. 4	1	..
Massachusetts, Fall River	Dec. 28–Jan. 4	3	..
Michigan, Grand Rapids	Dec. 28–Jan. 4	1	..
Saginaw	Dec. 21–28	5	..
Minnesota, Winona	Dec. 28–Jan. 4	1	..
Missouri, Kansas City	Dec. 28–Jan. 4	5	..
St. Joseph	Dec. 14–28	2	..
St. Louis	Dec. 28–Jan. 4	3	..
Montana, Helena	Dec. 1–30	2	..
Nebraska, Nebraska City	Dec. 21–28	1	..
New York, Schenectady	Dec. 1–31	2	..
Ohio, Lorain	Dec. 28–Jan. 4	2	Imported
Oklahoma, Oklahoma City	Dec. 21–28	7	..
South Dakota, Sioux Falls	Dec. 28–Jan. 4	1	..
Tennessee, Nashville	Dec. 28–Jan. 4	6	
Texas, Laredo	Jan. 9	1	Imported
San Antonio	Dec. 21–28	2	..
Washington, Spokane	Dec. 21–28	13	..
Tacoma	Dec. 21–Jan. 4	8	..
Wisconsin, Milwaukee	Dec. 21–28	2	..

SMALLPOX—FOREIGN.

Brazil, Pernambuco	Oct. 15–21	..	67
	Nov. 1–30	..	147
Canada, Winnipeg	Dec. 28–Jan. 4	3	..
China, Amoy (Kulangsu)	Nov. 8–23	..	Present
Shanghai	Nov. 24–Dec. 1	2	12
		Cases foreign; deaths native	
France, Paris	Dec. 11–21	7	..
Italy, General		160	..
Japan, Koho	Dec. 7–14	149	24
Yokahama	Nov. 30–Dec. 7	8	..
Java, Batavia	Nov. 23–30	3	..
Mexico, Aguas Calientes	Dec. 28–Jan. 4	..	1
Monterey	Dec. 21–29	..	1
Peru, Lima	Dec. 11	26	In Hosp'l
Russia, Odessa	Dec. 7–14	7	4
Riga	Dec. 14–21	9	..
St. Petersburg	Dec. 7–14	12	1
Siberia, Vladivostok	Nov. 21–28	4	..
Spain, Seville	Nov. 1–30	..	1
Valencia	Dec. 15–29	42	2
Vigo	Dec. 14–21	..	2
Turkey, Bagdad	Nov. 16–30	76	14
Venezuela, La Guaira	Dec. 7–Jan. 4	..	Present

YELLOW FEVER.

Cuba, Cienfuegos	Jan. 9	1	On Schr. *Mercedita*
Santiago	Jan. 15	1	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Nov. 8–16	6	6

CHOLERA—FOREIGN.

Japan, Osaka	Dec. 7–14	5	5

PLAGUE—UNITED STATES.

California, San Francisco	Jan. 7	1	..

PLAGUE—FOREIGN.

Chile, Africa—Vicinity of	Dec. 16	—	Present
Egypt, Alexandria	Dec. 5–12	5	3
Port Said	Dec. 7–14	1	..
Provinces—			
Assiout	Dec. 11–18	7	6
Dakahlieh	Dec. 10–17	3	2
Garbieh	Dec. 5–12	4	3
Japan, Osaka	Dec. 7–14	24	20
Peru, Callao	Dec. 7–14	1	..
Lima	Dec. 7–14	3	..
Paita	Dec. 7–14	5	5
Piura	Dec. 7–14	2	..
Truxillo	Dec. 7–14	1	..
Turkey in Europe, Kavak	Dec. 26	..	Present

In Quarantine Station

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CLASSIFICATION OF CASES OF APPENDICITIS.*

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IN a case of suspected appendicitis it is not sufficient to make a general diagnosis of inflammation of the appendix. It is of the greatest importance to go a step further and diagnosticate the exact character of the lesion in order to determine the proper method of treatment suitable to the individual case. The question of immediate operation or the propriety of temporizing depends entirely upon the nature of the attack—upon the exact pathological condition that we have to deal with.

There are three different clinical forms of appendicitis which are to be considered, and these may be described in brief as follows: First, the simple catarrhal, which may be either acute or chronic; second, that form which is associated with a circumscribed abscess; and third, that which is characterized by acute gangrene of the organ, without the formation of limiting peritoneal adhesions, and therefore necessarily associated with more or less peritoneal infection. We encounter occasional cases of tuberculous appendicitis, but a consideration of this form of disease may be disregarded at present, so as not to confuse the more important features that it is especially desirable to bring out.

The simple catarrhal form of appendicitis, the non-suppurative, may be either acute or chronic.

In the acute cases the appendix is found more or less enlarged, swollen, congested, the small superficial veins in the serous coat injected and plainly visible; the wall of the organ is infiltrated with inflammatory products and mucous or mucopurulent material is found in the lumen. The lining mucous membrane is red and swollen and often shows ulcerated areas, and the lumen of the organ may be more or less narrowed or obliterated through the swelling of the mucous layer. There may be flakes or patches of fresh fibrin around about the appendix agglutinating it to the adjacent peritoneal structures. The mesoappendix is thickened and its blood-vessels injected, and it may be adherent to the adjacent peritoneal structures. After the acute attack has subsided, and especially if there have been several preceding attacks, there may remain organized connective tissue bands that fix the appendix to the adjacent peritoneal organs and surfaces, limit its mobility, and cause kinking or torsion of the organ. Healing of ulcerated areas in the mucous membrane may leave the lumen strictured or the entire lumen may have become narrowed or obliterated through the inflammatory thickening of the wall of the organ, and one or more fecal concretions may be left remaining within the appendix; thus, when these patients with so-called simple acute catarrhal appendicitis escape operation and apparently recover, many are left with a dangerously damaged appendix, one readily susceptible upon slight provocation to renewed attacks.

In the chronic cases the appendix may exhibit but little gross change. It may be simply thickened or its lumen may be obliterated, due to a gradual increase of the connective tissue elements of its wall. The veins in the serous coat are injected and plainly visible. The lumen may be strictured and the mucous lining membrane show areas of ulceration. A fecal concretion may be contained within. There may be present adhesions that kink or twist the appendix, limiting its mobility and fixing it to the adjacent peritoneal parts—at times it is found adherent to the right tube and ovary.

These so-called catarrhal cases, acute and chronic, are characterized by the absence of perforation, gangrene, or abscess formation.

In the second group of cases, the abscess cases, we find the inflamed appendix, enclosed in an abscess cavity containing a varying quantity of foul-smelling pus. The walls of the abscess are formed by the adjacent peritoneal surfaces, coils of small intestine, cecum, and omentum, held together by recent inflammatory adhesions. After the adhesions have been broken up and the abscess opened, the appendix, intensely congested and swollen and maybe or may be not perforated or presenting areas of gangrene, is found adherent to the wall of the cecum upon its outer or its inner side, or curled up underneath the head of the cecum and coils of small intestine, its tip pointing upward, or else it may reach down into the pelvis, where it may be adherent to the side of the bladder or involved in an inflammatory mass made up of the right tube and ovary. If the appendix is already perforated the opening may be seen, usually nearer the free end, the concretion having already escaped or else presenting at the opening in the appendix. Occasionally we find the appendix still intact and with a concretion easily felt within it. The mesoappendix and adjacent omentum are found intensely congested, red, thickened, and stiff and brawny. The abscess is situated according to the position of the appendix to the outer or to the inner side of or underneath the head of the cecum, or extending down into the pelvis alongside of the bladder. In these abscess cases the limiting adhesions may break down, maybe through transporting patients from home to hospital, and as a result we get leakage of the pus, with a general or progressive peritonitis.

The third group of cases is marked by the absence of protective peritoneal adhesions and by the

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necrotic character of the lesion. The appendix is found congested, swollen, thickened, red, with gangrenous areas of greenish-black and usually already perforated, or in some cases where the process is more pronounced and very rapid, the entire appendix may have become gangrenous and present the green-black appearance which is characteristic of that condition. There may be patches of fresh fibrin upon the adjacent peritoneal surfaces, but no effort at adhesions or walling-off of the diseased appendix has been made—the process has been too quick—more like an acute gangrene due to interference with the circulation, to thrombosis and occlusion of the blood-vessels of the appendix, than to an inflammatory process. Primarily the process may have been inflammatory, but the destructive element entirely overshadows the inflammatory and the necrosis occurs so quickly, so abruptly, that there is not sufficient time for protecting adhesions and an abscess to be formed. Some of these cases show complete absence of any inflammatory element whatever, and the appendix is found as a thin-walled, flaccid, black, gangrenous tube, sloughed throughout its entire length, clear up to the cecum. Several cases have been seen by the writer where this condition obtained—one with the green-black sloughed appendix completely severed from the cecum. Probably these conditions are the result of infectious thrombosis of the veins that drain the appendix, or else of interference with the circulation, due to compression of the engorged, swollen organ within its unyielding serous outer envelope or around a concretion contained within its lumen. In some cases the adjoining part of the cecum shows a similar gangrenous appearance. The blood-vessels of the appendix are found blocked with septic thrombi. When the abdomen is opened there escapes a varying amount of serous, turbid, sticky fluid. If diagnosticated early and operated upon promptly we may find the process not so far advanced, the appendix still unperforated and with little fluid in the peritoneal cavity.

Diagnosis.—The question is whether it is possible to differentiate between these several conditions clinically. I believe that it is in most, if not in all, cases, and this definite, accurate diagnosis is of the greatest practical importance, in the first place, in order to determine the proper method of treatment, and, in the second, in order to arrive at a proper prognosis as to the outcome of the case. The mortality from appendicitis is due to failure to differentiate and to recognize the bad cases sufficiently early.

In the first group of cases we have to do with a catarrhal inflammation which may be either acute or chronic.

Chronic catarrhal appendicitis is not an uncommon condition. It is probably not always a distinctly localized inflammation of the appendix limited to that organ alone, but oftentimes rather part of a general disturbance of the intestinal canal—the appendix giving mild symptoms every time that a greater degree of congestion of the organ causes it to swell within its serous envelope, with a resultant narrowing of its lumen, especially its mouth, and interference with proper drainage, discharge of its secretions. The chief symptom in this set of cases is the more or less constant feeling of discomfort associated with occasional attacks of more acute pain referred to the region of the appendix. The more acute attacks are as a rule coincident with a more pronounced, acute general disturbance of the gastrointestinal canal, often due to indiscretions in diet, and varying in degree of severity up to a typical attack of acute appendicitis. Examination even during the intervals of relative quiescence reveals a point of localized tenderness over the site of the appendix and oftentimes the appendix may be plainly recognized upon palpation as a tender tube. To facilitate palpation of the appendix the patient, lying upon the back, is instructed to raise the right thigh with the leg extended at the knee. This puts the psoas muscle on the stretch, and using this as a guide or landmark the appendix can in many cases be felt to the outer side of the muscle and identified by the tenderness elicited when it is rolled under the examining finger.

The acute catarrhal condition is, in many instances, simply an exacerbation of a chronic appendicitis and often accompanies an attack of gastrointestinal disturbance following the ingestion of some unusual form of food that has disagreed with the patient. We have the history of gastric disturbance and pain in the abdomen, which gradually becomes localized in the region of the appendix. With the settling of the pain in the appendix the bowels as a rule become constipated. This is an important symptom and in marked contrast to the diarrhea which is so characteristic of the ordinary attack of cholera morbus. There is a moderate elevation of temperature, 100° to 101°, and moderate acceleration of the pulse rate, 90 to 100. The patient does not look especially sick and lies upon the back with the right thigh and knee flexed. Upon examination and pressure at McBurney's point tenderness is elicited. As a rule this tenderness is distinctly localized. Pressure upon any other part of the abdomen is not associated with pain except in some few cases and then the pain is referred to the region of the appendix. The right rectus muscle is found rigid and resists the effort to palpate the right iliac fossa. There is no tumor to be felt. The belly is usually not markedly distended. If these acute catarrhal cases are seen early and placed upon proper treatment, the symptoms often subside in a few days and the attack stops short of suppuration. Still, upon the other hand, in spite of prompt and proper treatment some of them go on to suppuration and abscess formation and perforation or to sudden gangrene; hence the necessity, in the absence of operation, of carefully watching them for any sign of danger.

In the second group of cases, the abscess cases, we have the history of the attack beginning as described in the preceding paragraphs and lasting several days with the symptoms that have already been mentioned in the first set of cases, but the symptoms do not subside, they persist. The temperature goes higher and the pulse becomes more accelerated, although in occasional cases the temperature and pulse rate vary but slightly or not at all from the normal, and the constipation continues. Finally, after several days, upon palpation of the abdomen a tender tumor, occupying the iliac fossa, may be made out, indicating that an abscess has been formed. It will be noted that other parts of the abdomen remain fairly free from tenderness. In some of these cases the general symptoms that mark the early period of the disease and precede the formation of the abscess are so mild as to be overlooked or only brought out by careful investigation by the examining physician.

The adhesions that enclose the abscess may break down and as a result of leakage we may get a gen-

eral peritoneal infection, or new localized abscesses may form, each succeeding one connecting with the other—progressive peritonitis. These accidents give their own characteristic symptoms.

The third variety, the fulminating form, is the real deadly variety of appendicitis, and deadly because of the suddenness of its onset and meager symptoms and of its destructive character and the virulence of the infection. Many of the cases are unrecognized until too late for successful surgical treatment.

These patients may give a history of previous attacks or they may have been complaining of indefinite abdominal symptoms for several days, or they may be attacked without any warning whatever—may be suddenly awakened in the night with intense pain in the abdomen. The pain at first may not be referred to the region of the appendix but it does gradually become localized there.

Examination fails to reveal the presence of a tumor in the iliac fossa. The muscles of the abdomen are held rigid and pressure over the appendix elicits marked tenderness. The abdomen is distended. These patients have an anxious, sick look which is characteristic. Temperature is irregular, usually not elevated at first. Pulse is accelerated, and later, as the disease progresses, out of proportion to the temperature. As the disease progresses the rapidity of the pulse is a good indication of the degree of sepsis, peritoneal absorption, but is not infallible. We may have acute gangrene of the appendix with but little or no acceleration of the pulse, or even with diminished frequency of the pulse rate. In fact a low temperature and slow pulse, with distinct local signs of appendicitis, are characteristic of this form of appendicitis. The tongue is dry and coated. There are nausea, retching and vomiting. Constipation is marked and there may not even be gas expelled. This symptom of obstinate constipation is indicative of this variety of appendicitis; it is reflex in its origin and represents nature's effort to hold the bowel in a condition of rest so as to facilitate the formation of adhesions. As the degree of sepsis increases the pulse becomes more and more rapid and weak and finally a characteristic picture of acute septic peritonitis with the corresponding high temperature, rapid, weak pulse, delirium, dry, coated tongue, obstinate constipation and distention, etc., presents itself. In some of these cases we have a rather more asthenic type with rapid, weak pulse, cold, clammy skin, normal or subnormal temperature. Respiration is increased in frequency and thoracic in character, and may be out of proportion to the temperature and pulse rate. These cases of acute gangrenous appendicitis may, at the outset, on account of the sudden onset and lack of symptoms of previous illnes, readily be confounded with cases of perforation of the stomach, duodenum or gall-bladder, or with ruptured pus tubes. A point which is of much value in differentiating these cases from those of perforation of stomach, intestine, etc., is the marked local tenderness over the region of the appendix. Later, after peritonitis has become well marked, and with the abdomen tense and swollen, it may be more difficult to locate the trouble in the appendix and to differentiate them from cases of perforation of stomach, intestine, etc. In case of doubt an exploratory incision should be made in the linea alba and search made for the seat of the trouble.

Treatment.—Only in the first set of cases, the catarrhal, can there be any question as to the method of treatment—whether to operate as soon as the diagnosis of appendicitis is made or to wait with the hope of the attack subsiding, or to avail oneself of the advantage of an interval operation. If sure of the character of the lesion we may temporize in this set of cases; it will do no harm watching the patient carefully for any sign of danger. Many of them resolve without going on to suppuration or gangrene and therefore escape operation during the acute attack. Some of them, with strict attention to diet, bowels, etc., never have another attack; still this is the exception to the rule. Nature may be assisted in her effort to effect a spontaneous cure in these cases by enjoining complete rest, withholding all food, and permitting only water to be taken, and by the administration of small repeated doses of calomel and bicarbonate of sodium. An icebag may be applied over the region of the appendix. If there is any doubt as to the exact pathological condition existing operation should be advised, except when the presence of some organic disease of the heart, lungs, kidneys, etc., would make an operation extra hazardous. Under these circumstances one might wait with operation until the indications became more imperative. If the patient recovers without operation from the acute attack operation should be urged for the purpose of removing the appendix, unless some distinct contraindication, as mentioned above, is present. Appendicectomy in these simple catarrhal cases and in experienced hands is practically without danger, either immediate or remote, and gives the patient the only certain assurance against subsequent attacks, which are so apt to occur. Sure enough there may never be another attack, but the reverse is the more likely because after one or more acute attacks the appendix is left in a damaged condition that makes it susceptible to renewed attacks. The possibility of being out of the reach of proper surgical help in a subsequent attack is a potent argument in favor of an interval operation. In these cases of simple catarrhal and so-called interval cases amputation of the appendix and inversion of the stump through a gridiron incision in the abdomen is the most satisfactory method of operating. No drainage is necessary, and the abdominal incision is closed layer by layer with catgut.

As to the second group of cases there should be no question concerning the proper method of treatment. Operation should be undertaken as soon as the abscess is diagnosed—abscess means adhesions, and adhesions mean good prognosis. Through an incision corresponding to the location of the tumor, by preference carried between the fibers of the rectus, the abscess is evacuated and the cavity cleansed out with saline poured from a pitcher, followed by peroxide of hydrogen, and this in turn washed away with the saline, and the appendix then sought for and removed. It is desirable to remove the appendix in all these abscess cases. A careful search should be made at the time of operation for a concretion that may have escaped from a perforated appendix into the abscess cavity. Such a concretion is often flushed out with the escaping pus when the abscess is opened or with the saline when the abscess cavity is being flushed out. If a concretion is overlooked and left remaining in the abscess cavity it may keep the wound open for a long time and make the healing process tedious, or it may necessitate reopening the wound to search for and remove the concretion. In most cases after the appendix has been separated it can be amputated close to the root and the stump turned in and the opening

corresponding to the turned-in stump closed with a purse string. In some cases the cecum is so tightly fixed within the abdomen by an unusually short mesocecum that it is almost impossible to draw the cecum sufficiently far out of the abdominal incision to permit of properly applying the purse-string suture about the root of the appendix for the purpose of inverting the stump, and in these cases one may have to be satisfied with applying a ligature of catgut around the root of the appendix and after amputating the organ touching the end of the stump with a drop of carbolic acid on a probe.

These abscess cases should all be drained for 48 hours or longer with a cigarette drain. In some cases where the abscess reaches upward behind the colon toward the kidney it is wise to provide counter-drainage through an additional incision in the loin just above the crest of the ilium—this counter-drainage will not often be found necessary. The incision in the abdomen is closed, except for that part where the drain emerges, layer by layer, with chromic catgut reinforced by several interrupted through-and-through heavy silk sutures.

The question of closing the incision in these cases without drainage.—This may be done in those cases where it is possible to evacuate the abscess and cleanse the cavity thoroughly and invert the stump of the appendix. Some of these will show primary union, still others will break down and on account of there being no ready-formed vent for the pus it undermines the skin and does much more damage than if a drain had been left.

In a series of thirty-five cases treated by the writer without drainage about one-half of them broke down within a few days and had to be opened and drained. In these cases the pus was invariably found between the layers of the abdominal wall—usually in the fatty layer underneath the skin. The peritoneum seemed to be well able to dispose of any infectious elements left behind, but not so the layers that make up the abdominal wall. The discharge of pus when the abscess is opened and the delivery of the diseased appendix through the incision in the abdomen necessarily infect the edges of the incision, and although in some few cases we could get along without drainage still the drainage does no harm and if proved to be not necessary it can be removed after forty-eight hours and really does not delay healing very much if at all.

The third group of cases.—It is of the greatest importance to recognize these cases early and to operate without delay. They are usually first seen by the physician and the responsibility is his to promptly make the diagnosis, to promptly recognize the dangerous nature of the lesion. Early operation will save a very considerable number of these patients who would otherwise be certainly lost. There are no limiting adhesions and delay is fatal. The deadly results are due to failure to recognize these cases—to distinguish them from the ordinary less dangerous varieties. They should be operated upon before the system is overwhelmed by absorption of the septic material. If seen late, after the patient has become thoroughly septic—the system thoroughly saturated with the poison—and the heart has begun to fail, operation will be of no avail. It is simply a question of the degree of poisoning at the time of operation and the individual patient's power of resistance. When the heart is still strong and not rapid the prognosis is good—means either a small degree of absorption or a high degree of resistance. After the poisoning has become more intense and the heart begins to show the effect of the poison by increased frequency and diminished strength of its beat, the prognosis is less favorable. With a pulse rate of over 130 the prognosis is poor, with a still more rapid heart, 140-150, meaning a still greater degree of poisoning—lack of resistance on the part of the patient—the prognosis is bad. It is almost without hope to operate when the heart action indicates that the patient is overwhelmingly poisoned because even after the surgeon has eliminated the source of the infection the system, kidneys, etc., is unable to throw off the poison which has already been absorbed, and the heart rapidly succumbs to the effect of the deadly toxins. However, even in these desperate cases operation should be resorted to as the only measure offering hope. A good free incision is made and the appendix sought and removed. If operating early and the abdomen is free from serum and pus, and we have succeeded in inverting the stump of the appendix, the incision in the abdomen may be closed up without drainage. The peritoneum will itself dispose of septic products if not in too great quantity and if the source of supply is cut off. Even in these cases, however, there can be no harm in leaving a cigarette drain in the end of the incision, reaching down to the site of the turned-in appendix, for forty-eight hours. If operating later and a considerable amount of sero-pus is found in the peritoneal cavity, this should be removed thoroughly by dry sponging and flushing of the immediate neighborhood of the appendix with saline, followed by peroxide, and this, in turn, by saline. The abdomen should be wiped dry and a cigarette drain introduced which reaches down to the former site of the appendix. The purpose of the drain is not to drain the peritoneal cavity, because that is impossible, but just to drain the immediate site of the appendix and the incision. This drain is removed at the end of forty-eight hours and if it does no good it surely does no harm. Elaborate flushing out of the entire abdominal cavity is not, as a rule, necessary in these cases—it is not a limited quantity of septic material which might remain in the peritoneal cavity after operation, but that which is in the lymphatics and blood-vessels and which has already been absorbed before operation is undertaken, that renders the patient's condition desperate. The blood-letting during the operation and the intravenous infusion of saline solution to replace the poison-charged blood are measures that benefit materially in these cases.

104 West Seventy-first Street.

A PSYCHOLOGICAL STUDY OF HAMLET.

By JOHN W. WAINWRIGHT, M.D.,

NEW YORK.

"No one mortal," says Furness, "save Him whose blessed feet were nailed for our advantage to the bitter cross, ever trod this earth commanding such absorbing interest as Hamlet, the mere creation of a poet's brain. No syllable that he whispers, no word let fall by those near him, but is caught and pondered as no words ever have been, except of Holy Writ. Upon no throne built by mortal hands has ever beat so fierce a light as upon this airy fabric reared at Elsinore."

In presenting that phase of Hamlet's character which may be termed the mental, we approach a personality like unto an alabaster lamp, one ever shining forth the light of a noble and exalted soul.

Mysterious as have ever been the motives which

moved Hamlet, there is yet withal, strangely enough, something familiar in the character notwithstanding its seeming obscurity. That he is forever suggestive, but never explicable, is due to our own limitations. He moves through the shadows which divide night from day, passing at times into the rich sunlight of the declining ever, at other times lost in the evening mist of seeming obscurity and the shadows of thick gathering darkness. Sympathy is the one vital part of a comprehension of Hamlet's character. When we can conceive him as a part of our own lives, as we can of other dear friends who are with us no more, as flesh of our flesh, bone of our bone; see him as a personal entity, endeared to us by his frailties as well as his profound religious sentiment, as one of exquisitely tender conscience, deep paternal feeling, of the most exalted ideas of justice; take him into our lives, our hearts, we will in a measure be able to comprehend the motives which moved him. Only by careful study and mature reflection can we hope to understand or appreciate the sublimity of this character.

The opening of the play of Hamlet has almost the effect upon us of viewing the supernatural, to be quickly followed by stern reality. We first see the central figure as he is, pleasing, polished, courteous, with princely dignity. Calm of temper, artless in conduct, albeit meditating upon the sudden death of his beloved father, his mother's disgraceful marriage to his father's brother within one month of her husband's death, thereby depriving him of his rightful crown, to be quickly followed by the revelation of the ghost and his sudden resolution to feign madness, believing at first that his mind is disturbed beyond mortal reach, yet that his power of intellect can and will control this mental disturbance, even render it an instrument for his personal safety. All else must give way to his vow, which is to live "Within the book and volume of my brain unmix'd with baser matter." Ophelia is to be henceforth but a "Trivial fond record" compared with this one purpose of life to which he dedicates himself. All else is to be forgotten. The appeal "Remember me" is not to be for an instant lost to memory. And yet, withal, he cannot see a course clear enough to satisfy his understanding, so,

> "I'll have grounds
> More relative than this: The play's the thing,
> Wherein I'll catch the conscience of the King."

Hamlet believes Ophelia to be in the conspiracy, acting a part at the command of others, spying upon his actions to aid in plucking out the heart of the mystery with which he surrounds himself, in fact hears her assert an untruth. It is then that he rails at her and bids her to a nunnery. After this interview he recovers his tranquillity, for there is great business on hand. He has the interview with the players and here indeed we have preeminently the "scholar's tongue." He becomes calm and addresses Horatio:

> "There is a play to-night before the King;
> One scene of it comes near the circumstance
> Which I have told thee of my father's death.
> I prithee when thou seest that act afoot,
> Even with the very comment of my soul
> Observe my uncle: If his occulted guilt
> Do not itself unkennel in one speech,
> It is a damned ghost that we have seen."

With Ophelia during the play he is both pathetic and humorous. "What should a man do but be merry?" The king is "Frighted with false fire," his occulted guilt has disclosed itself. Hamlet is elated; Rosencrantz and Guildenstern suffer from his biting sarcasm. Polonius is the butt of his wit, but withal

> "Now could I drink hot blood,
> And do such bitter business as the day
> Would quake to look on."

Now follows the scene with the Queen when Hamlet gives the lie to his madness so effectually as to disarm all cabal. Polonius, the wretched, rash, intruding fool, falls instead of his betters. There is no regret on the part of Hamlet. "Take thy fortune," he commands. He must now to England, and he casts himself like a feather upon the great wave of fate. "I see a cherub that sees him." Later he relates to Horatio his device to rid himself of the King's two spies, Rosencrantz and Guildenstern. There is here no lack of resolution for he is *all* will and revels in the telling of the story. He anticipates the issue will be shortly known.

> "It will be short: the interim is mine,
> And a man's life's no more than to say one."

Now follows the scene with the grave diggers. Again he revels and we hear from his lips a veritable mine of wealth. He discourses equally of the most familiar things of life and gives utterance to the sublimest thoughts ever listened to from man, with all the simplicity of which only the scholar is capable.

But again, a frenzy seizes him when he sees his beloved Ophelia laid to rest, and here for the second time his reason totters and comes perilously near forsaking him, but later he becomes again master of self, meditates with Horatio, and becomes almost playful. Still he is at the mercy of fate and again the central figure in the Empire of Chance. The end draws near. Events follow with startling rapidity when guilty and innocent alike perish.

Such in brief is the story of Hamlet.

The student of sociology, in full sympathy with the accepted theories of evolution and the survival of the fittest, believing as he does that human, as well as other affairs, obey irrevocable laws; that life presents an unbroken chain, each link a fact, and the offspring of a preceding fact; that events control men and not men events, will regard the character of Hamlet as an artistic representation of an ever recurring event in the world of facts. To such a one Hamlet cannot escape from his environment for he is but a part of certain well defined phenomena, recurrent in the world, and must necessarily go down in the wreck of a society rotten to the core. That a new and sounder era opens with the advent of Fortinbras matters not, and if known could not have altered his purpose or destiny. Does such a materialistic theory, however, accord with other writings of Shakspere? We find in al of his productions, profound sympathy with the individual a salient point; nor can we conceive him in his maturer years, entirely reversing his previous practice to deal alone with problems, ideas, fragments of political philosophy rather than with a noble and generous soul. We believe that in this as in other of his creations, Hamlet had his being through sympathy for humanity; that Shakspere* did not intend him to

* Malone, in his "Inquiry," published in 1796, confesses that he and Mr. Steevens, in tracing the three signatures affixed to Shakspere's Will, conceived the idea that in the second syllable there was an "a" in one of the signatures, and that notwithstanding the fact that this was clearly shown them later, "it occurred to me (Malone) that in the new facsimile of his name which I gave in 1790, my en-

be a coldly calculating being who exhauts the relations and consequences of a deed or life on "thinking too precisely on the event," still leaving "this thing to do," or as one with enormous intellectual activity lacking wisdom in its use; as one of great powers of reflection, with but a small modicum of sentiment or feeling; as a philosophical being "too subjectively reflective to care in the least for what was occurring in the world around him;" as one whose course of thinking apart from action had destroyed his capacity for belief, since in belief there exists an element contributed by the individual will; as a man in whose mental and moral nature the "finite dislimbs and dissolves," leaving him in the presence of an idea only; as a man so prone to the very cabalism of his intellectual nature, that he meditates upon and plays in the presence of human dust with the base affinities of our bodily nature, which proved so irresistibly attractive to his imagination that he is compelled to pursue the history through all its series of hideous metamorphosis; or as one constantly wavering between materialism and spiritualism, between immortality and disbelief, between reliance upon Providence and a blind bowing to fate. This is not the Hamlet of Shakspere. Hamlet was not so fashioned, not so intended; not cold, cynical, constricted. He was to those who surrounded him as much a mystery, unfathomable, unknown to all but to Horatio, as to us to-day. Even now, looking upon the character after his whole life has been exhibited, there are those who fail to comprehend him or the motives which moved him. How then can it be expected that we follow the subtle meaning of such seemingly inconsequential doings?

We approach the distinguishing and vital element in Hamlet's character: What is this mystery which still baffles the critic? They generally accord him elevated thought, rare sensibility to virtue and vice; an intuitive knowledge of his fellow man; a transcendentally vivid imagination; a highly emotional nature; a glowing exuberance of spirit, which even the most profound sorrow could not wholly suppress; a tender, affable, courteous disposition; a mind graceful and contemplative, full of thought for those around him, but never losing sight of their relations to his own individuality and purpose. One critic writes that he has the common sense of an Englishman, the peculiar incision and mercurial mental force of a Frenchman, the emotional nature of a Celt, the fire and genius of an ancient Greek, the imagination of a modern Italian. Upon whichever side we view him, we find the same beautiful, pathetic light, not a light to illumine a theory or to represent an ever-recurrent phenomenon of evolution, but a light from a noble and exalted soul. Here we have the complex qualities, the thorough assimilating of the noblest attributes of man; the concentrating into one person, of mental characteristics hitherto unknown; a commanding personality, leaving the critic in a bewildering maze of uncertainty as to what manner of man this may be. "Hamlet" has all the paternal and patriotic love of Brutus, the sentiment of Richard II, the bonhomie of Henry V, the will power of Richard III, the statesmanship of Henry IV, the honesty and simplicity of Othello, the loyalty of the better half of Macbeth. In one supreme effort Shakspere has given us a man of amazing powers; lofty conceptions, immaculate faculties, who curiously gazes upon human character and destiny, and then places him in the midst of all that is false, affected, exaggerated, corrupt in human life. The result is of necessity the supreme tragedy of all ages; the very complex of human sufferings.

In such an atmosphere of selfishness, espionage, deceit, he is at war, but battle as heroically as he may, he is unable to adjust his ideal. His environment is too much for him, and he is forced to yield to the utter hopelessness of the task. "The shortness of his allotted span, and the exigencies of life, will not permit man the luxury of overestimating his powers or his responsibilities; he must be content as is the atom, doing its inevitable work in the universe, accept calmly the fate of his nature; cast his follies and his wise acts with equal tranquillity into the great whole, which under the guiding law of destiny, will surely shape them to their proper ends; for let a man be never so wise, he must some time drift at the mercy of fate, without anchorage; and let him be never so foolhardy, fortune will at times bring his boat safely into the harbor of peace. The race is not always to the swift, nor the battle to the strong, nor yet riches to men of understanding, nor yet favor to men of skill; but time and chance happeneth to them all." To Horatio, Hamlet exclaims:

> "There's a divinity that shapes our ends,
> Rough-hew them how we will."

And again to this same faithful friend, whose love was the only foothold on earth left him, he exclaims when rejecting the advice which might have prevented the consummation of a terrible ending:

> "We defy augury; there's a special providence in the fall of a sparrow. If it be now, 'tis not to come; if it be not to come, it will be now; if it be not now, yet it will come: the readiness is all: Since no man has aught of what he leaves, what is't to leave betimes?"

We cannot, we must not, represent Hamlet, who possessed so profound a religious sentiment, exquisitely tender conscience, deep paternal feeling; of the most craving and sensitive nature, coupled with an imagination of such far-reaching power and vastness, as a cold, calculating, rationalistic philosopher who views the world and all around him as would the anatomist.

The motive force in Hamlet's character is his emotional nature. Romeo was steeped in passion, Hamlet saturated with imaginative emotion which compelled him to suffer in an environment utterly false, affected, exaggerated, against the contemplation of which his whole being cries out. The constant exhibition of a realistic rationalism, of cynical philosophy, of an idealism closely approaching pessimism, which at times discloses his inner nature, his very self, is the mask to conceal the internal fires which were consuming him; a part of that "antic disposition" which he thought it necessary to assume, in assuming which, however, he was continually forced to walk as it were, on ice which threatened to give way beneath him at any and the most unfavorable moment. In his solitude we see him "at times all wrath and fire," soliloquizing as it were, from a distant world, a world

graver had made a mistake in placing an "a" over the name, and that what was supposed to be that letter was only a mark of accentuation with a turn occurring in the first part of it, which gave the appearance of a letter. An autograph was found in a small folio volume of the first edition of Florio's translation of Montaigne, purchased at auction in 1838 by the British Museum, in which the Master had written his name "Shakspere." There are numerous warrants for this spelling, but we believe the above will be sufficient to convince any one that the spelling herein used is the proper one.

inaccessible to others, bewailing the fate that compelled him to live in the midst of such meanness, such absolute littleness. Then we see his very soul in active rebellion, and witness his highly wrought nature giving way to fierce bursts of indignation, resentment and revenge; this to be followed by a recoil, and he is dissolved in tears, "weeping to find that he can feel so much and do so little."

The so-called madness of Hamlet was plainly a part of the mask which was to shield and protect him against his enemies and which was voluntarily assumed as is made clear in the first act, when after the interview with the ghost, which almost shook his reason from its throne, and he hears his friends calling him, he answers with the falconer's call, "Come, bird come," and later, after enjoining them to silence he astonishes those who anxiously solicit news of the character of the interview with:

"There's ne'er a villain, dwelling in all Denmark
But he's an arrant knave."

This assumed insanity we think was a mistake, for instead of assisting him in his purpose, it was ever retarding him. It does not appear to have been so much the death of his father as the manner of his going that disturbed Hamlet. He was also much disturbed at the sudden and unwarranted espousal of his uncle by his mother. We can easily believe that Hamlet never had any affection for Claudius; this becomes aversion upon the marriage and positive hatred through the disclosures of the ghost. Nor do we believe that he was much disturbed in the loss of the throne, for he nowhere refers to it. We have rather to deal with a sudden revulsion of feeling, from deep affection for his father to positive hatred for his uncle, and it is this violence to his nature which cries out against his wrongs. Let one whose mind is tuned to the highest and noblest impulses of man; one of such a delicate and refined sense of moral excellence, be cruelly trampled upon and his whole being is in active revolt. This sense of outraged justice becomes more and more accentuated as Hamlet finds himself suspected by the king, who is conscious of having committed a heinous crime in the murder of his brother, and a rank injustice to Hamlet, the rightful owner of the crown of Denmark. He is therefore ever watchful, fearing for his own safety should Hamlet suspect the truth. The knowledge of this suspicion forced Hamlet to cloak the knowledge of the manner of his father's death was incoherent and inconsiderate behavior in order to protect himself. It was the exigencies of his position which influenced his actions and thus is the pitiful cry, "To be, or not to be," which cry pervades the whole tragedy.

Alienists have ever been close students of the character of Hamlet; they would like to place him under restraint and judicial treatment, for they are never sure of their diagnosis; they find it even harder to hit upon a definition of madness than did Polonius:

. . . . "for, to define true madness,
What is't but to be nothing else but mad?"

Tender and nobly descended, this royal flower grew up under the direct influence of majesty, filled with ideas of right and princely dignity, feeling for the good and pure, ever conscious of his high birth and his destiny. "He was a prince, a born prince." Pleasing in figure, polished by nature, courteous from the heart, he was the model of youth, the delight of the world. His:

"The courtier's, soldier's, scholar's, eye, tongue, sword:
The expectancy and rose of the fair state;
The glass of fashion, and the mould of form,
The observ'd of all observers!"

Picture to yourself this youth, this son of princes; conceive him vividly; bring his condition and surroundings before your eyes, and then observe him when he learns that his father's spirit walks; that father whom he idolized and whose untimely taking off but one short month past has caused him such sincere grief. Stand beside him on that terible night when the venerable ghost appears before him. A horrid shudder seizes him! He speaks to the mysterious form; it beckons him to follow and hearken. The fearful accusation of his uncle rings in his ears; the summons to revenge and the piercing reiterated prayer, "Remember me"—that father foully murdered—and his pitiful cry, "Oh, all yon hosts of Heaven." When the ghost has vanished, whom do we see before us? We have heard Hamlet petition the ghost to:

"Haste me to knw't, that I with wings as swift as meditation, or the thoughts of love, may sweep me to my revenge."

But now amazement and sorrow overwhelm this solitary young man; he raves against smiling villains, swears never to forget the departed and concludes with:

"The time is out of joint; O cursed spite!
That ever I was born to set it right!"

Critics have declared Hamlet weak and vaccillating. We do not concede this. On the contrary, we see everywhere evidences of a tremendous will. Was ever resolution more strictly observed than his resolve to abandon every purpose of life in order that he might devote himself solely to his revenge; or his renunciation of his love for the sweet and beautiful Ophelia?

We see this stern resolve again in the killing of Polonious; in his sending his schoolmates, Rosencrantz and Guildenstern, "to sudden death, nor shriving time allowed."

Finally in his firmness to resist the opportunity to kill Claudius while at his prayers. This would never do, for to kill the king when so occupied would be to send him straight to heaven. His father's sufferings rise in his mind, the father whose spirit is:

"Doom'd for a certain time to walk the night;
And for the day, confin'd to fast in fires,
Till the foul crimes, done in my days of nature,
Are burnt and purg'd away."

He contrasts the happier criminal with the purgatory of the victim, and the contemplation fills him with a desire for a fuller revenge. Hence:

"Up, sword; and know thou a more horrid hent: (grasp)
When he is drunk, asleep; or in his rage;
Or in the incestuous pleasures of his bed;
At gaming, swearing; or about some act
That has no relish of salvation in't;
Then trip him, that his heels may kick at heaven;
And that his soul may be as damn'd, and black,
As hell, whereto it goes."

We love Hamlet, the sublimest of Shakspere's creations. There is scarcely a trait of character, of frailty, or grandness that endeared our most beloved friend to us in real life that is not to be found in Hamlet. We love and sympathize with him in his intense sorrow; wish that we could help, could counsel, could put our arm within his and saunter off to some quiet nook where we might talk it all over. We would have patience with him and his ravings at fate, and sympathize, oh, so much, with him in the loss of such a father, for:

"He was a man, take him for all in all,
I shall not look upon his like again."

We love Hamlet, and we love his one friend in all the world, Horatio. Not so much because of his personality, perhaps, but because he was loved by our friend. This one love of Hamlet's to which he indulged himself was his only dependence, the one link that bound him to humanity; "all else was dark and dank."

"Dost thou hear?
Since my dear soul was mistress of my choice,
And could of men distinguish, her election
Hath seal'd thee for herself: for thou hast been
As one, in suffering all, that suffers nothing."

In the tone of Hamlet's words at the close of the first act, there was the formless presentiment of coming misery; and now again, in words which are almost his last:

"But thou would'st not think how ill all's here about my heart," there comes over him the dark foreboding of the final catastrophe. The colossal shadow of his tragical end is projected over the closing scenes of his life, and his being thrills to its gloomy inspiration. As the appointed minister of nature's vengeance for a great crime, he is in most intimate harmony with the rest of nature, and an instinctive feeling, mysterious and inexplicable, forecasts unconsciously that issue by which it is subsequently interpreted. He defies augury from a conviction that his hour must come at the appointed time. With the unfailing certainty of destiny it comes; the "self-sacrifice of life is o'er" and "the rest is sublime." (Silence.)

. . . . "Horatio, I am dead;
Thou liv'st; report me and my cause aright
To the unsatisfied."

Horatio, with breaking heart:

"Never believe it;
I am more an antique Roman than a Dane:
Here's yet some liquor left."

And again Horatio's farewell:

"Good night, sweet prince;
And flights of angels sing thee to thy rest."

We believe that Shakspere loved Hamlet beyond all his other creations. The play everywhere shows the loving master. Like the fond lover, when our Hamlet is present we are satisfied; when absent we long for his return. We love him because he existed; he was and is a part of our lives. But our prince has passed to his eternal heritage; the heritage of immortality; for so long as men shall live, so long must they regard Hamlet a part of their lives. Men will come and go, nations be born and die, but, like the towering mountain and the mighty seas, Hamlet will remain a blessed heritage to man.

In expressing our estimate of this sublime character, let us not too hastily assume a knowledge of the motives which guided him, but rather let us seek to fathom the depths of his understanding; to feel with him; be his counterpart, his ego; realize his environment and his heartaches. Not until we can thus claim acquaintanceship with Hamlet are we warranted in passing judgment upon this, the most human and lovable of the master's creations. When we can know, feel and completely sympathize with him, when we can comprehend the great master and enter with him into the building up of this ever-living personality, then and not until then can we know his purpose or understand his meaning.

"Canst thou bind the sweet influences of the Pleiades, or loose the bonds of Orion? Canst thou bring forth Mazzaroth in his season? Or canst thou guide Arcturus with his sons?"

Then Job answered and saith:

"Behold I am vile; what shall I answer Thee? I will lay mine hand upon my mouth."

Note: To those wishing to pursue this subject further I would suggest a reading of the criticisms by Dr. Maudsley, George Henry Lewis, Dr. Conolly, Hudson, Coleridge, Schlegel, Dowden, Furness, Hazlitt, Victor Hugo, and numerous others, all of whom I have consulted and some of them quoted in this paper.

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CUTANEOUS TUBERCULIN VACCINATION IN THE DIAGNOSIS OF TUBERCULOSIS.

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It would seem that the hypodermic use of tuberculin as a diagnostic recourse in suspected tuberculosis is destined in the near future to a very limited application, in view of the recent advances made in the diagnosis of tuberculosis. We cannot fail to appreciate the introduction of the opsonic index and the cutaneous tuberculin vaccination as distinct advances in the diagnosis of tuberculosis, when we realize what a powerful agent for harm tuberculin may prove when used hypodermically, for diagnostic purposes. The special training necessary and the elaborate technique incident to ascertaining the opsonic index may, unfortunately, render its general use for the present impractical. On the other hand, the cutaneous tuberculin vaccination commends itself because of its simplicity of application.

The opposition that has grown out of unpleasant experiences with the hypodermic use of tuberculin may cause some hesitation in taking up this new method. And while it is probably too soon to allay all apprehension from its use, in view of a recent report by Moro (*Wiener klinische Wochenschrift*, No. 31, 1907), the cutaneous tuberculin reaction is unattended by any febrile reaction, and possesses the advantage of being applicable also in cases accompanied by elevation of temperature.

In order to follow the development of the cutaneous tuberculin reaction for tuberculosis, it is necessary to revert to a consideration of vaccination against smallpox.

The clinical manifestations of first vaccination are quite familiar. We expect after inoculation with bovine or human lymph a local reaction, consisting of a slight hyperemia against the trauma inflicted in scratching. This usually subsides in less than forty-eight hours, leaving merely the scratch marks, when a period of quiescence supervenes. About the third day, sometimes later, a papule appears at the inoculation site.

This increases in size, the central part being raised and flattened, with a red margin known as the aula. The papule continues to grow and soften in the center, the hyperemia around it spreads, and the aula merges into what is termed the areola, both papule and areola reaching their maximum extent from the ninth to the eleventh day. They now begin to diminish in size, the areola, as it appeared, disappears quite critically, and the pustule slowly undergoes involution.

The relation of papule and areola as to size and time of development may be graphically represented as in Chart 1.

Some elevation of temperature, as indicated on

the chart, and general disturbance precede and accompany the rapid increase of the hyperemia, seldom lasting more than three or four days. In the course of one to three weeks the remnant of the pustule, in the form of a dried crust, falls off, leaving a purple scar of varying size, depending

CHART I

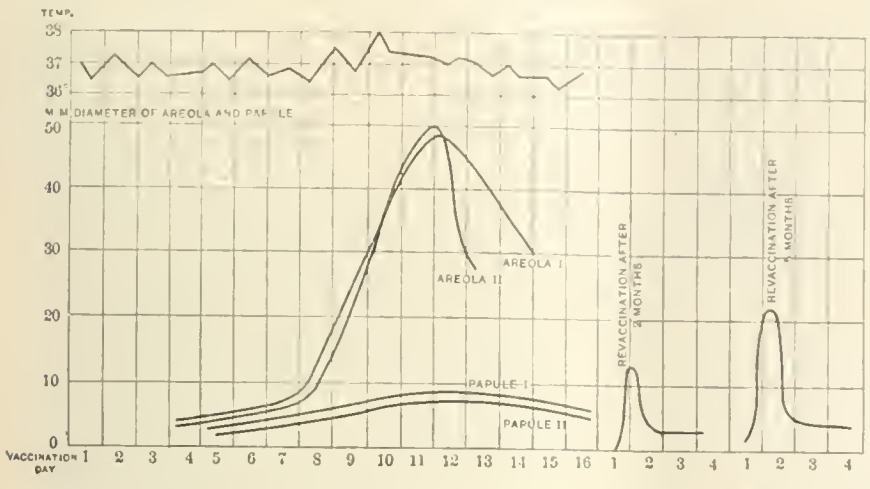

CHART I.—The curves represent the relative diameters of the areola and papules. (After Pirquet.)

chiefly on the extent of trauma inflicted at vaccination.

If the individual is revaccinated after a period of several years, he may present all grades of local and general reaction to the vaccine inoculation, from a slight papule, that gradually dries up, unaccompanied by constitutional symptoms, to a form similar to the first vaccination with papule, pustule, and areola formation locally, and more or less severe general manifestations.

A comparison of the time of development and extent of the areola formation well represents the degree of reaction. (See Chart 2.)

One striking feature to be observed is that the reaction occurs more rapidly and all phases are shorter than in the first inoculation. These varying reactions would seem to depend on the degree of immunity existent at the time of revaccination and the concentration of the vaccine. In many, however, the immunity is not at any time complete, even in the first months following vaccination, because in some cases slight reactions occur, the theoretical significance of which lies in the fact that they reach their maximum inside of the first twenty-four hours, without any general disturbance or elevation of temperature. This is called by v. Pirquet the early reaction of revaccination, which stands in striking contrast to the delayed response of the organism to the first vaccination. He believes it to be a specific reaction between the cowpox lymph and an organism already immunized against the same, that it is not produced by bacterial contamination of the lymph, nor by the albumin of the bovine lymph, as the reaction also occurs when fresh human lymph is used. This early reaction is quantitatively dependent on the amount of virus introduced, as can be demonstrated by using various dilutions of lymph, and distinguishes itself thereby from the first vaccination, in which the degree of the reaction is independent of the amount of the infectious material.

This altered reaction of the organism against vaccine, as shown in the early reaction following revaccination, has its analogy in the serum disease. It is a matter of common experience that several days after the injection of antitoxin there appear an eruption and edema of the skin of the patient, which disappear in the course of a few days. If after the subsidence of the skin change, or some weeks later, the patient is again injected with horse serum, the skin edema and erythema will appear within several hours after the injection. This prompt result naturally suggests a greater sensitiveness to the serum.

In order to lead up to the view advanced in explanation of this change in the reaction capacity of the organism, it may be well to recall the precipitin reaction.

If animal A is injected with the serum of animal B, the reaction of A against the injected serum results in the formation of an antibody known as precipitin. The presence of the precipitin in the blood of animal A may be demonstrated in *vitro*, as follows: "If one mixes the blood serum of A with that of B in a test tube a precipitate will occur. If, however, one mixes the blood serum of another animal of the type of A that has not been injected with the blood serum of B no precipitate will occur.

Some observers attribute the short incubation time before the appearance of the clinical manifes-

CHART II

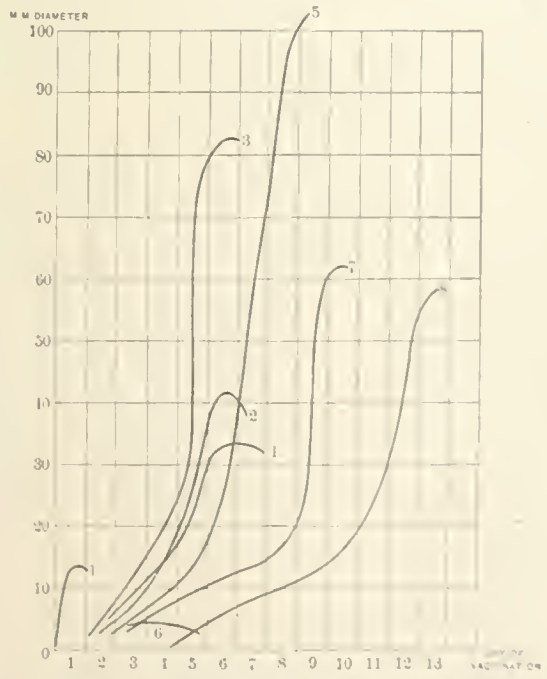

CHART II.—The curves represent the relative areolæ in the areolæ 1. Revaccination following recent vaccination 2 to revaccination several years following the first vaccination 3 and 5, first vaccinations. (After Pirquet.)

tations following the second injection of horse serum in man to the preformed precipitin present in the blood coming in contact with the fresh serum upon injection and absorption.

Pirquet contests this idea, interpreting the prompt reaction by a hypersensitiveness of the

organism to a recent infection and not to an immunity as commonly understood; that this altered reaction of the organism, for which he suggests the term "allergie," is not brought about by precipitin in the serum disease but by analogous antibodies, for which he uses the expression "antibodies of the vital reaction;" antibodies that do not circulate in the blood but (as shown in experiments by Rosenau and Anderson) are fixed on the cell.

He does not consider allergie, as might be construed from the horse serum reaction, identical with oversensitiveness, but rather a general term to cover the large complex known as immunity reactions, of which immunity should be made a subheading, being restricted to those processes where the organism has acquired a complete insensitiveness. He therefore believes the term allergie more applicable to express this altered reaction of the organism in revaccination than immunity.

Pfeiffer explains this altered reaction in the case of revaccination by assuming that there are two antibodies formed as a result of the first vaccination, one which destroys one part of the infectious agent of the vaccine; the other an antitoxin which neutralizes the endotoxin set free by the action of the former. The antitoxin disappears from the blood more rapidly than the bacteriolysin; consequently on revaccination, by virtue of the persistence of the bacteriolysin, the endotoxin is set free without meeting sufficient antitoxin, and gives rise to the inflammatory changes of the second vaccination.

The hypotheses of Pirquet have met considerable criticism at the hands of Kraus and others, but these I will not discuss, as in any event it is the general opinion that the altered reaction of the organism is dependent on antibodies formed after the first vaccination, and the rapid and abortive reaction occurring within twenty-four hours after the second vaccination is caused by a coming together immediately of the already existing antibodies and the virus of the vaccine.

That antibodies are produced by the organism subjected to vaccination can be demonstrated *in vitro*, as follows: if the serum of a calf, taken fourteen days after vaccination, is mixed with vaccine lymph in a reagent glass, allowed to stand twenty-four hours, and then centrifugated, and the overlying fluid removed and used to inoculate another calf, the result of inoculation will be negative.

This prompt reaction in revaccination, as already mentioned, is in striking contrast to the first vaccination where the maximum changes are not reached before the eighth to eleventh day because of the slow development of antibodies against the virus of the vaccine. This early reaction may also be obtained by revaccinating a patient who is at the height of his first vaccination with fever, as well as at a later time.

This is transferring from the test tube to the patient that which was long ago demonstarted *in vitro*, namely, that if one brings into contact the bacteria suspected of causing an infection and the blood serum of the patient, a union between bacteria and antibody occurs if the bacteria are the cause of infection, resulting in one instance in bacteriolysis, in another in agglutination, etc. This union in revaccination results in the local reaction of papule and areola formation.

It would seem perfectly logical that a similar altered reaction of the organism might obtain in other bacterial diseases that have resulted in the production of specific antibodies, and that they should give a similar local response on bringing into contact with them, as in cutaneous vaccination, their corresponding virus. In other words this principle might be employed in the diagnosis of all bacterial diseases *in vivo*, as it may be for vaccine: for instance in typhoid fever, tuberculosis, etc. This has proved to be the case in tuberculosis.

Continuing the above line of reasoning with relation to vaccination and revaccination, it may be well to note that the reaction of the organism against infection with tuberculosis, typhoid fever, etc., results in the production of specific antibodies, which, when brought in contact with their corresponding bacteria or extracts of them in skin inoculations cause a similar local reaction as in revaccination. The characteristics of this reaction in tuberculosis will be described below.

The technique for making a cutaneous vaccination with tuberculin is as follows: Make a 25 per cent. solution of old tuberculin in salt solution. A similar dilution is used in which one volume of a 5 per cent. solution of carbolic acid in glycerin is substituted for one of the volumes of salt solution. Place two drops, one of each solution, separated from each other by a space of two inches, on the outside of the arm, which should be prepared as is customary for vaccination. A small lancet, with a dull tip, which is about one-sixteenth of an inch wide and placed vertically in a metal handle, is used to abrade the skin through the vaccine drops by a rotary motion, removing only upper layers of epidermis. The tip is then cleaned, and at a point midway between the vaccination marks a third abrasion is made without any tuberculin being applied, to serve as a control.

If the reaction is positive a papule, varying in size from 5 to 20 mm. in diameter, at first bright red, later becoming a dark red with a slight areola, will appear at either vaccination point, in the first twenty-four hours; occasionally they are delayed to the second twenty-four hours. Sometimes little vesicles with turbid contents, later becoming confluent, appear over the inoculation site. These fade and disappear in course of several days, leaving at times a little pigmentation. In positive cases in which revaccination is practised similar reactions result. In localized tuberculous processes, as of the glands and bone, the reaction is especially marked in contrast to the milder reaction seen in persons who have healed foci. At the control point, and at all three points, in case the reaction is negative, the slight reddening that follows the scarification disappears in twenty-four hours without any further changes.

As a rule there are no constitutional symptoms following its use, and the local changes at the point of inoculation clear up as noted in the course of several days. However, Moro has recently reported five cases in whom complications arose which he was prone to attribute to the tuberculin reaction. In two a rhinitis developed in six to ten days. In three a conjunctivitis phlyctenulosa appeared, in one only for the first time, the others being recurrent. In another an existing conjunctivitis he thought was rendered worse. In one a tuberculide followed at the vaccination point, but had subsided greatly before the patient left the hospital, a month after inoculation.

Since the introduction of this cutaneous tuberculin vaccination, Calmette has devised a unique modification of its application by using the conjunctiva for inoculation instead of the skin. It is

termed the opthalmo-tuberculin reaction. He employs as a vaccine a one per cent. solution in water of the precipitate obtained by adding alcohol to old tuberculin. If this is dropped into the eye of a tuberculous subject, a decided reaction follows in three hours. The caruncle becomes inflamed and covered with a fibrinous exudate. The inferior cul-de-sac becomes injected and in six hours will be found to contain considerable serofibrinous exudate. The reaction attains its maximum point in from six to ten hours and disappears after eighteen hours in children and after from twenty-four to thirty-six hours in adults. The reaction is said to be painless and unaccompanied by constitutional symptoms.

Chantemesse employed this conjunctival inoculation in the diagnosis of typhoid fever, using as vaccine an aqueous solution of a precipitate obtained by adding absolute alcohol to cultures of typhoid bacilli.

The scope of applicability of the reaction in tuberculosis would seem to be in great part restricted to children, as a large number of apparently healthy adults give the reaction. This, however, might be explained on the basis that a large proportion of adults may have obsolete tuberculous foci or latent bacilli somewhere in the body.

As this is solely a diagnostic test, it is quite evident that the most convincing proof of its value will have to come from the autopsy room. I will, therefore, not cite my own experiences with the test, as they have not been so controlled. And although it has been used very widely in the past several months in Austrian and German clinics, the only comparison of the reaction with post-mortem findings so far has come from Pirquet, who reports (*Wiener klinische Wochenschrift*, No. 38, 1907) on one hundred persons in whom the tuberculin vaccination was made and who subsequently came to post-mortem.

Many interesting points have revealed themselves through this study. It has been observed that children with apparently healed tuberculous foci, which were found only incidentally post-mortem, often failed to give the reaction on first vaccination, but responded on later vaccinations. Here is a point not without some clinical significance in the use of tuberculin vaccination. It might suggest as a conservative proposition the employment of this test only in cases in which tuberculosis is the suspected cause of mischief.

Of thirteen cases in which tuberculosis was an incidental finding at autopsy, in six the reaction in the first and in three only in a later examination proved positive. It was negative in four, in three of which it was made in the last ten days of life.

Of thirty-four persons dying from tuberculosis twenty-four were first tested in the last ten days of life. In thirteen of these the reaction failed, in eleven it was positive.

The test would appear to fail frequently in the last ten days of life in cases of fatal tuberculosis, and not infrequently in cases in which tuberculous processes prove an accidental finding.

In one case that gave a positive reaction, the anatomical examination failed to show macroscopic tuberculosis.

Fifty-two cases that gave a negative reaction to the tuberculin test also proved negative as to tuberculosis at autopsy.

The ages of the above varied from a few months to 14 years; 38 were under one year, 30 of whom were free from tuberculosis; of 33 cases over 3 years of age, only 6 were free from tuberculosis; of the 29 between 1 and 4 years, 13 were tuberculous.

It would appear from these results that a positive reaction in a child is undoubtedly diagnostic of tuberculosis; that failure of the reaction is of little antidiagnostic significance in the terminal days of a tuberculous infection; also that its result in cases of obsolete tuberculous foci might prove negative unless the vaccination was repeated.

A parallel observation with its failure in the last days of fatal tuberculosis is its failure in cachectic children. A deviation from the normal is also observed in vaccinating cachectic children against smallpox, in that there is very little or no hyperemia around the papule which develops quite normally, but usually reaches its maximum later and likewise its involution. The revaccination gives much later positive results than usual. This may find explanation in diminished response of the organism to antibody production.

All in all, it would seem to be a valuable and practical diagnostic aid in tuberculosis, possessing advantages over the hypodermic use of tuberculin in children to such an extent as not to require comment. That it has shortcomings, however, is evident from the above statistics, in that it is not absolutely reliable at all stages of the process.

1487 Jackson Boulevard

THE AFTER-CARE OF TUBERCULOSIS WITH REFERENCE TO EMPLOYMENT.*

By H. R. M. LANDIS, M.D.,

PHILADELPHIA, PA.

The machinery now in use in the crusade against tuberculosis in some respects leaves little to be desired, while in others it is woefully inefficient. The agent first directed against tuberculosis and the one that has reached the highest state of development—*i.e.* the sanatorium for the treatment of the disease in its early stages—still falls short of accomplishing its purpose. The arrest of the tuberculous process as manifested by a disappearance of all symptoms and an apparent state of perfect health is not a difficult task, providing the inroads of the disease are not too great. Most sanatoria can show an apparent arrest of the disease, in its early stages, in about 75 per cent. of cases at a time of discharge. One of the characteristics of tuberculosis, however, is the tendency to relapse, and it is this feature of the disease that only too frequently undoes the good results obtained. The old saying that consumption is a disease of the pocket-book still has a good deal of force. To those with means the question of occupation after restoration of health is usually of minor importance. For the working man, however, wage earning capacity is his one asset, and without it he and usually his family become public charges.

In sanatoria the question of employment after leaving the institution is one that has constantly to be faced. In institutions devoted to the working classes, such as the White Haven Sanatorium, this is especially true, for in many cases a return to the former employment is not to be advised; frequently it is the employment itself or the conditions under which it is conducted that has led to the development of the disease. Under such cir-

*Read at the Tuberculosis Exhibition held under the auspices of the Pennsylvania Society for the Prevention of Tuberculosis.

cumstances the individual simply courts a return of the disease if, for instance, he returns to the unhygienic workshop. The great problem at the present time is not so much how to cure people as how to keep them well once they have been restored to health. People with means usually keep in touch with a physician for some time after completing their term in the sanatorium. The poorer class of patients, however, are too frequently lost sight of and little or no effort is made to keep informed as to their condition or manner of living. It is most important to impress on patients who have tuberculosis, no matter how slightly, that they are in constant danger of a relapse unless they exercise the utmost care in living. No time limit can be put on this period of their existence; for most it means attention to health for the remainder of their lives. They should be warned that at least for a time they must have no ambition except to maintain their health and to accept no position that will be incompatible with the preservation of health. The ambition to make large wages has in not a few instances been disastrous. Better far to accept a remuneration that can be earned without impairing the health than to relapse from the effort to excel. It is most important that patients should report to a physician or a dispensary once a month for at least a year after their discharge; after that the interval may be lengthened. In case there is a prolonged rise in the evening temperature, pleurisy, return of or an increase in the cough, blood spitting, or any acute affection of the respiratory tract (colds, sore throat, hoarseness) a physician should be consulted at once. The maintenance of weight is of the greatest importance. Having in mind that there will probably be some loss of weight after leaving the sanatorium patients should be told that the weight ought not to be allowed to fall below a certain point and should be kept well above that point if possible. The scales give such important information that no one who has ever had the disease should neglect being weighed less often than every two weeks. There is little to be feared in making patients unduly apprehensive as to their health. The great trouble is in being able to impress them sufficiently with the fact that their only safeguard is in constant watchfulness. The too prevalent idea at present is that six months at a sanatorium is all that is necessary to effect a cure for all time. The old question uttered with a sinking heart, "Can I be cured?" has been replaced these past few years by, "How long will it be before I am cured?" The truth of the matter is that even for those who are discharged with the disease "arrested" the battle is not half won.

Occupation is the bugbear that constantly confronts both physician and patient. There is nothing more discouraging than to see patients who have been put in a splendid condition of health relapse and become hopelessly diseased solely and entirely because of unsuitable employment. The relation that occupation bears to tuberculosis is so close that it is now a well recognized fact that the crusade against the disease can achieve no great success if physicians alone are left to grapple with it. There must be an earnest cooperation in all walks of life. If the question is of vital importance to the employee it is no less so to the employer. It is obvious that no patient should return to an occupation that had any part in causing the disease. For this reason it should be determined, if possible, in each case whether the infection was obtained because of the employment or whether it was acquired at the home. It is not uncommon for a man to acquire tuberculosis in an infected house even when his occupation is of the most favorable kind.

The question of work for the individuals who have been entirely or partially restored to health is of the utmost importance. At the present time inability to secure employment adapted to their physical needs drives many patients to accept work which can result in but one thing—a relapse. Many lives are sacrificed in this way. Another factor by no means uncommon is the refusal to employ individuals who have or have had tuberculosis. In some instances the constant failure to obtain work leads to a relapse because nourishing food cannot be obtained; in others failure to get employment in their particular line leads people to accept work they are physically unfit to perform.

In coming to a decision as to the work best adapted to the individual the first consideration must be his physical condition. The amount and character of work he is capable of performing without harmful effects should also be determined before he is discharged from treatment. . . . With this idea of hardening patients it has been the custom at the White Haven Sanatorium, since its opening, to put patients to work after the first month. The work is gradually increased so that during the last month's stay at the sanatorium each patient is performing eight hours work daily.

A limited number of patients, with slight damage to the lungs, who are entirely free from symptoms and whose strength has been restored do not offer so many difficulties. The range of occupations which is open to them is comparatively large and as a rule they will remain well providing they exercise reasonable care in regard to their health.

With those who have suffered a good deal of damage to the lung and in whom the disease has made considerable inroads the problem is most difficult. These individuals must devote the greater part of their time to the requirements of their health in order to hold the advantage gained while under treatment. Work of the lightest sort is all they are fit for, if a relapse is to be avoided. A few hours a day, at the most, is all many of them can stand. I think that most of us are too prone loosely to advise patients, especially if they have been inside workers, to get employment in the open air. A little reflection will show, however, that this is not always sound advise. Employment in the open air is not always easy to obtain for one thing, and is too often of the sort that requires severe muscular exertion when it is obtainable. The great essential for the discharged consumptive is avoidance of fatigue. His occupation should be one that will be free from incessant hurry and great muscular effort. For this reason inside employment is in many instances better than outside work providing the mental and physical tax is not too great and the working place is well ventilated.

To obtain suitable work for "arrested" cases and prevent their returning to occupations prejudicial to their health various expedients have been tried but so far without much success. At present the establishing of convalescent farms and industrial settlements in connection with the sanatoria are being urgently advocated. The object of these farms and settlements is to prolong the stay of patients in favorable surroundings and at the same time teach them some trade or other means of making a livelihood. Industrial settlements in

which suitable trades can be taught offer great possibilities and should receive every encouragement. While convalescent farms are greatly to be desired they require a considerable outlay of money, and in the end, so far as the working classes are concerned, would probably leave us in much the same position that we are at present.

The great need at the present time is for some organization which shall have as its object the securing of suitable employment for patients discharged from sanatoria and dispensaries. The applicant should present at such a bureau a certificate indicating his present condition and the amount and character of work he is capable of performing. To insure the opening of positions for those of limited working capacity it should also be the business of these bureaus to secure the cooperation of employers and others interested in the working class consumptive. The Kelling Open-air Sanatorium in England has found that the question of occupation after leaving the institution is the true solution of obtaining permanency of results in the working classes. With this object in view an After-care Committee has been appointed, the function of which is to consider the future of each patient and to obtain for him employment suited to his physical requirements. A circular letter has been sent to all those interested in employing labor with the request that they keep the institution in mind when they have open a position requiring light labor. Such positions may be filled temporarily until the patient is sufficiently hardened to undertake more arduous labor or they may become permanent, enabling the crippled wage-earner to gain a moderate competence. The employer is in no way to be responsible for the health of the individual. The work solicited is that which may be done out of doors or in pure air indoors and should not be of a character requiring great muscular effort or constant hurry. It is furthermore pointed out, and this is most important, that the employment of such individuals is in no way a menace to others. A man well trained in the proper precautions against spreading the disease is not dangerous to those about him. Realizing the importance of the subject the Pennsylvania Society for the Prevention of Tuberculosis has already organized a bureau on the lines just indicated and proposes to make every effort to enlist the aid of all who are in any way interested in the matter.

One of the most successful and practical methods of treating tuberculosis in the home is that known as the Tuberculosis Class, first put into operation by Dr. Joseph Pratt of Boston. Mention is made of this method because its most important feature is the close relationship between the physician and the patient. Inasmuch as these classes are limited in membership the physician in charge is enabled to become thoroughly familiar with every particular relating to the patient. If the present employment is undesirable, either because it is too arduous or unhygienic the church supporting a class can be enlisted in the endeavor to provide suitable employment for arrested or partially arrested cases. The establishing of more of these tuberculosis classes is greatly to be desired, for aside from the good they accomplish in education and restoring the patient to health they will aid greatly in helping to solve the problem of after-employment. In attempting the selection of an occupation the field is necessarily restricted except in the case of those who have suffered very slight pulmonary damage. Vigorously pushing the campaign against unhygienic working places will eventually be of great help as there are at present occupations with an evil reputation, largely because of the conditions under which they are carried on.

For men of limited working capacity the following occupations may be cited: gardening, light farm work, collecting rents, soliciting insurance, light carpenter work, watchman, gate-keeper, clerical work under favorable conditions, and driving, provided the latter is not associated with loading and unloading heavy articles.

For women the range of choice is not so great, but fortunately the question of employment is not so pressing as it is for men. Suitable employments for women are: mending, sewing, fine needle work, poultry raising, cultivation of flowers, and clerical work. Within the past few years an excellent opportunity for women has been made available by taking up the vocation of nursing, with special reference to the care of consumptive patients. Necessity compelled the Phipps Institute, some three years ago, to establish its own training school for nurses. So far the candidates, and it has been the desire that this should be so, have all been women who have recovered from tuberculosis. This training school is no longer an experiment. Of the twenty odd graduates, all of them are to-day in good health and occupying lucrative positions. Up to date the demand for these graduates to take charge of sanatoria and dispensaries in other parts of the country is in excess of the supply. The success of this plan has led to the establishing of a similar training school at the White Haven Sanatorium.

Enough has been said to show the present neglect of this most important subject and it is to be hoped that in the future that the various organizations dealing with the tuberculosis problem will give to it the attention it deserves.

TREATMENT OF CANCER.

By A. G. HENRY, M.D.,
CORTLAND, N. Y.

If I had nothing different to offer in the treatment of this disease than the usual ones by knife, plaster or hypodermic injections, this article would not have been written. In the too frequent return, either at the site of operation or elsewhere, the results from the use of knife or plaster are very disappointing. For reasons which will be stated further along, I think the treatment by injections will prove about as unsatisfactory. The remark of an eminent physician that everyone would die of cancer if he lived long enough, points to what seems to be the true cause of this disease, and indicates the line along which a rational treatment may be attempted.

The germ theory of this disease we may dismiss as being irrational and pretty thoroughly discredited. But that it is due to faulty nutrition, assimilation, and absorption we may fairly assume, and these conditions are brought about by one or more of a variety of causes.

As regards nutrition, we recognize three ways which make for a departure from health—over-nutrition, under-nutrition and faulty nutrition. By this last is meant that while there may not be too much or too little food taken, the material composing it is deleterious.

In the first case, that of over-nutrition, too much food is taken, more than the body needs for its prop-

er maintenance. As time goes on and this condition of things continues, the blood-making organs become tired and manufacture less perfect material from which the "builders" at some one or more selected places begin to replace with imperfect or cancer cells the more normal tissues of the affected parts. As the eliminative absorbents fail to remove this imperfect material as fast as it is deposited, we have the growing tumor.

Though less frequently, much the same conditions obtain in under-nutrition. The blood-making organs themselves are poorly nourished and furnish poor material for the building of perfectly healthy cells.

By material which gives a faulty nutrition, we have especially in mind all flesh foods which, containing toxins and poisons of various kinds, as so well shown by Haig, Kellogg, and others, are totally unfit for human consumption and have much to do either directly or indirectly in bringing about a condition of things that goes to the building of cancers.

If cancer is a local disease, it should not return after removal, as it usually does. On the theory that there is a general wrong condition of the blood-making assimilative and eliminative functions, it is readily explainable; for usually nothing is effectively done after an operation for the removal of the growth to remedy the wrongs above mentioned; and not only that, but the patient's strength is seriously sapped by the operation itself, if that operation has been accomplished by knife or plaster. Thus an early recurrence is to be looked for. The treatment by injection promises to be but little, if any, more effectual against a recurrence than the operations before mentioned, barring the less severe shock to the system from the little destruction of tissue attending it.

In the aged and feeble, where vitality is low and on the wane, or even in younger persons, where the diseased condition has been allowed to progress so long as thoroughly to saturate the system, we can hardly expect any treatment to avail. But excepting these cases, I think there is a line of treatment which, if most thoroughly carried out, will completely cure a large proportion of those afflicted with external cancers, and that without any surgical operation whatever.

A summary of this treatment was published in the Medical Record of June 6, 1903, in reporting a case referred to me in August, 1900, and to this any interested may refer.

This was a case in which the clinical symptoms of cancer of the breast were complete, a hard, nodular, rapidly growing tumor with enlarged axillary glands, in a woman of the right age for malignant growths (47), with a history of no previous trouble of any kind in the breasts. It had been diagnosed as cancer by competent surgeons and the immediate and entire removal of breast and glands earnestly enjoined. Yet, at the expiration of nine weeks of treatment this woman left for her home in Ontario, Canada, with the tumor entirely removed by absorption and her health in the best condition. There has been no recurrence of the growth after seven years.

To those who prefer to consider that the growth under consideration was probably not malignant, I would respectfully point out that it was a sure enough cancer for the recommendation of an operation of the most radical kind, an operation that would have mutilated and badly crippled for life and tortured in mind as well as in body the victim of such unnecessary assault. To those who saw the growth there was no doubt as to its nature.

This lady, from impaired digestion and poor appetite, together with faulty food, was suffering from under-nutrition, and the treatment of general massage and electricity was used with the object and result of most quickly remedying this condition of things. Now with the overfed, especially if attended by obesity or digestive troubles, the best returns will be realized by a complete fast for a few days, possibly a week or more. This will best give the eliminative absorbents time to catch up with their work, and give the organs of nutrition generally a rest from long overwork. Then shortly they will be in much better condition to further the task of building healthy, perfect cells into the body from pure and sufficient foods, and removing the old, badly formed, diseased ones.

As to cancer of the breast, far-advanced, and when the tumor is large and has nearly if not quite reached the suppurative stage, the course promising the most hopeful results is to excise the diseased mass with as little destruction of surrounding tissue as possible, with no attention paid to enlarged neighboring glands. Better to leave a little of the diseased structure than to make a gap in the tissues that cannot be easily closed with little stretching of the parts. The patient after such an operation can be put upon an appropriate diet at once, and in a few days treatment by electricity and massage for the absorption of the swollen glands and remains of the tumor may be begun.

For internal cancers the general treatment before alluded to, with special diet, etc., offers the most hope succeeding an operation for the removal of the diseased structure when possible.

To recapitulate: Cancer of the breast, when not too large and near the suppurative stage, can be treated with the greatest promise of success with electricity and massage both local and general, together with a special diet from which all flesh foods are entirely excluded. The patient should always be under the physician's immediate care, at his residence or private sanatorium, where every detail of the treatment can be most thoroughly carried out.

"In the special work of dispersing mammary tumors, good judgment and considerable experience give the best results. As delicate a touch and as finely graduated pressure are necessary to success in working about a growth we wish to get rid of as in manipulating pelvic adhesions and enlargements. Unskillful treatment is worse than no treatment."

Finally, and to note that others are thinking of the great importance that diet may have in the production of cancer, I will give a few sentences from a recent address of Dr. Robert Bell of London before the Psycho-Therapeutic Society. He said that self-indulgence was one of the chief factors in the production of cancer; that one of the primary causes was the ingestion of too much red butcher's meat, and that in his long experience he had met only one cancer patient who was a vegetarian and she was sick from other causes.

Fowler's Position.—MacLaren says that this is an important aid in the treatment of cases of general peritonitis. It consists in placing the patient in a semi-erect posture at an agle of 45 degrees or less and maintaining him there by means of supports and pillows. By this means, in septic abdominal cases, the septic fluids from the absorbent and dangerous area of the diaphragm and upper abdomen are drained to the less absorbent and safer area of the pelvis and allowed to escape by a large suprapubic drain which passes to the bottom of the pelvis.—*British Medical Journal.*

THE TEACHING OF PHYSICAL DIAGNOSIS.

By O. L. MULOT, M.D.,

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WERE we to start a discussion of the relative importance of the various subjects of the medical curriculum and the time to be devoted to the study of each, we would have buzz about our ears such a swarm of divergent opinions as to be truly startling. Although there can be little doubt that in the efforts to improve medical education, as in all other reforms, overenthusiasm carried the day and the student now spends much time acquiring that which in many cases is forgotten before he gets his diploma and much that is of little real value in the practical every-day work of nine-tenths of the profession, yet about physical diagnosis there is no such great difference of opinion, and it was an improvement in the teaching of this subject that I had in mind in a previous article.*

About four years ago, in conversation with the head of one of the medical schools of this city, I suggested that diagnosis should be the subject of a special teacher. He dissented on the ground that it was too intimately connected with Practice of Medicine to make such a separation possible and practical. I was not then, nor am I now, converted. The teaching of this subject has always been lax; it is a large subject and when its teaching is incumbent upon the chair of practice the instruction in diagnosis or practice, or both, must suffer. The separation of these two subjects seems much more practical and reasonable than the separation of Materia Medica and Therapeutics into separate branches. A perusal of the announcements of medical colleges shows that his opinion is not universally shared, as some have made this whole subject of diagnosis a separate professorship, and my observation of the theoretical unpreparedness of students beginning their third year's studies has convinced me of the desirability that these men should, during their second year, receive thorough instruction on the basis theory and physics of the subject.

The students realize how defectively and inadequately they have been prepared during the second year and frequently express themselves to the effect that the time devoted to this subject was wasted. I concur in this opinion. True, students do not realize their own needs, but they do form their own estimates of teachers and teaching; they know the weak as well as strong points of each one and there is a singular unanimity of their judgment of teachers. He who teaches in a simple, concise manner, easy of comprehension, has their high esteem.

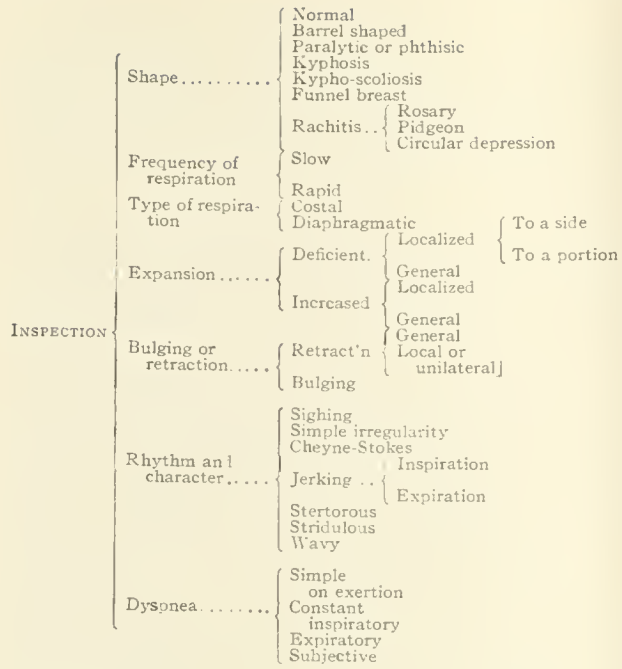
This failure of the second year's teaching necessitates going all over the theory, which of course, under the circumstances, can be done only in the briefest possible manner and at the expense of time that, according to the plan of instruction, was intended to be devoted entirely to practical work. At best the time is short. There is now some talk about making the course in medicine five years. Such an increase would be profitable to the schools, but would work a hardship on the students. The yearly work can well begin a few weeks sooner and continue a few weeks longer, easily increasing its length by six weeks or more. This may seem but a small gain when considered with the single term, but on the whole course it will amount to more than half a term, as it gives an increase of twenty-four weeks or more. I think, in justice to the students, this should be done before another term and its fees are added; but this is wide of my subject.

Nearly every writer and teacher has felt justified in inventing new qualifying terms suited to express his own conception of signs; this has led to a very confusing nomenclature. The very multiplicity of terms tends more to obscure than to elucidate the subject. A Basel convention would certainly not be out of place. In a course of instruction on this subject these terms can be made plain and physical signs explained on the basis of the physical changes which underlie their variations; nor do I mean by this giving students a stated number of pages from the recommended text-book or a subject to be studied from the book and at the next lesson quizzing them upon that. This smacks too much of the "cram quizzes" so much in vogue fifteen or twenty years ago. It may be an excellent aid to memory, but it certainly is not teaching and does not merit so dignified a term. Teaching is something that appeals to the thinking and reasoning powers, while the other is a cramming of the memory and never of enduring good, and a thing which all earnest educators have abandoned because of the poor results thus obtained.

Teachers and text-books speak of the physical signs and recite the diseases in which the changes are encountered. Now we know that the changes in physical signs are dependent upon the extent, nature, and seat of the pathological changes. The student gets a long drill in the pathological laboratory with the microscope, but these microscopic changes must be of macroscopic extent, to cause differences in the physical signs. The gross pathology as seen in the autopsy room at this stage of his studies would be invaluable to the student.

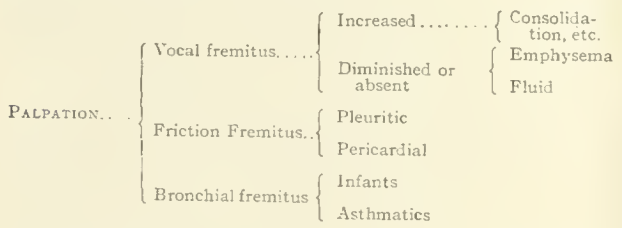
Let us pass quickly over that part of our subject bearing upon the history, its importance, and method of taking and proceed to inspection, and here let the teacher only dwell upon the salient points of general inspection. This in itself is a large subject, but should be dealt with according to the grade and limitations of the student; to give enough, not too much nor too little, the teacher ever bearing in mind that he is building for them a skeleton which is later to be filled in and built upon by the student. This framework must be a simple, still adequate structure. Thus we progress to the special inspection of the chest. Now if we will only for a moment contemplate the structure of the lung we will at once realize that gross pathological changes, recognizable by physical signs, must be along one of two directions: Infiltration and consolidation for one, or rarification for the other, and this fact should be strongly pointed out to the student. These two processes are characterized by changes recognizable in each of the subsequent steps and each gives a group distinctive and diametrical to the other. I need not here go into the evidence of changes along these two lines as discoverable by inspection. Of course, there are many other things discoverable by inspection, but these should be made to stand out as cardinal. If the course is to be clinical as well as didactic and the students are to practise physical diagnosis, a synopsis of inspection such as the following may be given them:

*MEDICAL RECORD, August 17, 1907.

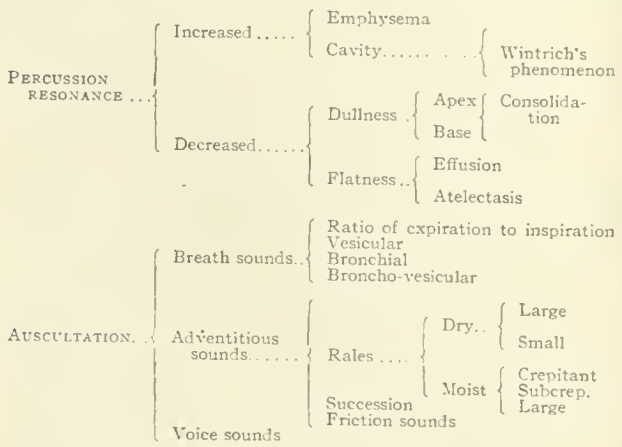


This synopsis can be very much amplified or abridged. I have found it practical and much appreciated by the students, not as an aid to the memory, but as a guide to the order in which to take them up, so as to guard against oversight and to train him in method, system, and sequence, which is also one of the duties and responsibilities of the teacher.

Then, taking up the next step, palpation, work that over, always holding the two processes strongly in view, and when this step is completed the synopsis of palpation may follow:



So on through the succeeding steps, percussion and its synopsis:



If the teaching has been intelligent and consistent, each step thoroughly worked over, even if only in the abridged form as necessitated by the conditions of which I spoke in the earlier part of this article, the student will find little difficulty in recognizing conditions such as pleural effusions, consolidations, etc., for he has learned to look for changes in groups and does not rely upon this or that one physical sign.

"Ah! but there are so many exceptions to this. We do not often have things so clearly cut," is the argument that will be advanced. True indeed, but we have only been building a framework and it is an old-established pedagogic practise to teach first the rule and then the exception, and in this subject I can see nothing better than to follow this time-honored method which has been found to be productive of the best results. Any other method will produce chaos, out of which the student must painfully and laboriously grope his way at the expense of much time and the chagrin of many mistakes. It is so hard to unlearn and to correct bad habits. To avoid this chaos, to save time and drill him in the routine of making examinations, for this he has a teacher. Most of the gross errors in diagnosis are not so much due to ignorance as to incomplete, systemless examinations.

Let us teach physical diagnostics upon the pathology which is responsible for the changes, for after all that is all they tell us, leaving us in ignorance as to the etiology of these changes. The physical signs of a tubercular consolidation are no different than those of a pneumonic one; you may argue that they differ in their location and area involved, but we can and do have tubercular processes at the base, and on the other hand we can and do have pneumonic areas no larger in size than those of the tubercular processes and occupying a location other than the base. Our diagnosis would depend upon the history and symptoms, and I repeat, our physical signs remain simply those of consolidation. In basing our teaching on pathology we are only building upon its own true foundation and making the subject logical and much easier of comprehension, thus placing the student in a position to use his reasoning power, and he should be able to reason out the physical signs from the pathology and *vice versa*.

The study of the diagnostics of the heart is upon a better foundation, but students must be warned against the conception that the various murmurs are pathological entities. This misconception is a common one and easily understood when we look over the dispensary record books. In closing let me lay stress upon the fact that, besides a knowledge and understanding of the subject, the student must acquire a technique; a technique of the eye, the ear, and the hand. It is, therefore, useless to let the beginner listen to murmurs only faintly audible and of doubtful character. The large dispensaries connected with the schools furnish abundance of material of the grosser kind, and as he acquires acuteness of ear let him be brought to the realization of those fainter ones. This matter of technique and its proper development is of no small importance. Musicians devote so much time and care to technique; how much more important is it that this part of the physician's education should be the very best obtainable under the conditions?

619 HALSEY STREET.

Endometritis.—Keep the patient at rest; this is most effectively attained by ordering her to bed. Keep the vagina clean and lessen inflammation in it by antiseptic and sedative or astringent douches; a saturated solution of boric acid if the vagina be sore or the discharge irritating; chloride of zinc (¼ to ½ grain to the ounce) if the discharge is copious. Under such treatment most cases get well in a week or two.—*Herman.*

CONGENITAL IRIDEREMIA WITH CATARACT.

By EDGAR S. THOMSON, M.D.,

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Congenital irideremia is rather an unusual condition, although a number of cases have been reported. It is almost invariably bilateral and is accompanied by other abnormalities. There is usually a small rudimentary portion of the iris present, and it is doubtful if there is such a condition as complete aniridia. Opacities of the lens are perhaps the most common complications, though the cornea is usually not normal. The vision is usually extremely defective.

The present patient, a man of 36, of good general health, though not particularly robust, came to me January 27, 1901. His vision had never been more than 5/200 to 6/200, as far as could be ascertained. For four years his vision had been failing, and cataract had been developing. Two years previously a needling had been attempted on the left eye, by a local oculist, but the operation had been followed by such severe reaction that no further attempt had been made to remove the cataract. Both lenses, at the time of his first visit, were opaque in all parts but with old stellar opacities more marked at the anterior pole. Vision was P. L. There being no contraindications in his general health, extraction of the cataract in the right eye was advised, which was performed at the hospital two days later. A section was made at the limbus, and capsulotomy was attempted, but the capsule proved to be so thick and tough that it was impossible to cut it, and the lens became slightly dislocated during the attempt. It was thereupon removed with a wire loop, only a drop of fluid vitreous being lost in the maneuver. There was very slight reaction following the operation, indeed the wound remained open until the fifth day, and the vitreous became filled with exudation, so that atrophy of the globe seemed imminent. The patient was kept in bed and mercurial inunctions were used.

On the eleventh day the vitreous began to clear, the slight injection of the eyeball to subside, and the vision to improve. He left the hospital February 23. At that time a good view of the fundus could be obtained; there were no lesions of the retina, choroid, or nerve to be seen; the tension was slightly fuller than in the other eye. Pilocarpin drops were prescribed for him, and he was given a + 10 for the distance, with which his vision was 4/200, and a + 35 for near, with which he read Jaeger type No. 7 by holding it very close to his eye. He returned to his home in Vermont and came back December 3, 1902, with slightly increased tension in that eye, and a dense membrane stretching across the pupil. Under cocaine a De Wecker operation of division of the membrane was done, from which he recovered without incident.

March 4, 1903, the vision was 8/200, the tension normal.

March 2, 1904, he returned with plus tension, reduced vision, and pain in the eye, which he said had lasted about ten days. The field was concentrically contracted to about 20 degrees and there was a deep total cupping of the optic nerve. The vision was reduced to 6/200. He was given a prescription for bichloride of mercury and pilocarpine, and hot water locally. Extraction of the left cataract was advised but refused.

January 2, 1907, he again returned to the city. The left lens had become spontaneously dislocated, and was floating around in the anterior part of the vitreous, moored to its position by a small section of the suspensory ligament. There was slight redness of the eye and immediate extraction was advised. This was done at the hospital under cocaine anesthesia. A section was made well forward in the limbus, and the lens delivered without difficulty by a wire loop. A few drops of fluid vitreous were obtained. As it seemed important to secure immediate healing of the wound, on account of the experience with the other eye, a conjunctival flap was made and drawn over the wound by a suture. The outlines of this flap had been made before the performance of the section, and it only remained to enlarge it and suture it. However, on account of the fact that the sclera was less than half of its normal thickness, it was not found possible to use the flap, as no matter how gently it was drawn over, or how little the tension, the lips of the wound in the limbus would override, preventing perfect apposition. All attempts to suture the flap were therefore given up and it was merely agglutinated as well as possible over the wound. The eye healed kindly, at once, and in two weeks the patient left the hospital with a vision of 12/200 with a + 10.

So far he has done well, but the ultimate course of the case is very doubtful, as the scleral tissues have poor resistance, and secondary glaucoma is very apt to occur.

19 East Forty-fourth Street.

The Tragedy of Tuberculosis.—J. Macdonald refers to the family of a crofter who had lived in the same house for 26 years. Until the spring of 1900 the whole family, consisting of himself, his wife, five daughters, and seven sons, the oldest being 21 years and the youngest 2, had always been healthy. In April, 1906, the eldest girl, aged 21, who had been in service, came home suffering from a suppurating finger. Symptoms of phthisis manifested themselves, and she died of tuberculous meningitis on May 26. In the following November another daughter, aged 14, was found to be suffering from well-marked phthisis in both lungs. Death took place on January 8, 1907. During the time that she was ill the father began to suffer from a cough, and the mother complained of pain in the abdomen and the left ankle. Two daughters, aged respectively 20 and 10, also complained of cough, and the baby, aged 2, was anemic and emaciated, also had a cough. Examination showed that the mother was suffering from tuberculous disease of the ankle and there seemed to be reason to suspect the existence of similar disease in the abdomen; while the two daughters and the baby showed distinct signs of pulmonary phthisis. The baby died on January 3, and the daughter, aged 10, on January 10, after an illness of about three weeks. The mother was removed to the Western Infirmary, Glasgow. The father who up to this point was the only one of the male side of the house to be attacked, did not improve. In March, however, it was found that a boy, aged 15, was suffering from phthisis. Meanwhile the father got worse and died soon afterwards. Attention is drawn to the following points of interest in connection with the outbreak: (*a*) The entire absence of a family history, or predisposition on either side; (*b*) the fact that for twenty-one years the family had occupied the same croft healthily; (*c*) the fact that the disease attacked the female side of the house first; (*d*) the acute onset of the disease in the majority of the cases; (*e*) the rapid destruction of lung tissue, very high temperatures in some, and the fact that there was very little expectoration in any of the cases; (*f*) within three months, father, mother, four sisters, and a brother have all been attacked, with 4 deaths out of 7 cases. The house was of the ordinary type of crofter's dwelling, consisting of two apartments, with stone walls, thatched roof, clay floors, and very damp. The people were particularly clean and tidy, and kept their house in an excellent condition. According to recent information, the mother had died of tuberculous peritonitis in Glasgow. The ravages of the disease have not ended there, and the family is in danger of utter extermination. Its doom recalls the fatefulness of a Greek tragedy.—*British Medical Journal.*

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OPERATIVE TREATMENT OF AUTOINTOXICATION.

Metchnikoff has long held the view that the large intestine is man's greatest internal enemy and that it is in consequence of the fermentation processes there going on that so many of us fail to reach the appointed term of life, being cut off prematurely at three score and ten or even earlier. It is undoubtedly true that autointoxication not only causes many discomforts and serious ills, both physical and mental, but may even shorten life, but our knowledge of this condition and of its mode of production is not yet sufficiently advanced to warrant the belief that the removal of the large intestine is necessary to its prevention or cure.

That we may come to this, however, before many years have passed seems within the possibilities. Especially is this so in view of an important contribution to the subject made by Mr. W. Arbuthnot Lane in the *British Medical Journal* of January 18. In this article he reports briefly thirty-nine cases of excision of the large intestine, in whole or in part, undertaken primarily for the relief of intractable constipation. The earlier operations were performed for the relief of the pain attendant upon this condition, but the immediate and startling amelioration, not only of the pain but also of the other symptoms of autointoxication, was so marked that he was induced to operate in other cases of obstinate constipation in which pain was not a prominent feature. As his experience widened, he was led to conclude that intestinal stasis had a very far-reaching pathology, due partly to mechanical causes and partly to autotoxemia; and he then began to operate earlier, before the long continuance of the condition had reduced the sufferers to such a state that the operation, itself one of only "moderate severity," directly jeopardized life. An early operation he found was not only attended with less fatality, but was also more successful in affording complete relief of the symptoms—this being in accord with the fact that the long continuance of morbid symptoms induces a habit, founded doubtless on anatomical changes, which persists after the primary cause is removed. In his earlier operations Mr. Lane removed the large intestine only to the splenic flexure, on the assumption that the descending colon and sigmoid, being vertical, would not afford opportunity for the accumulation of fecal material. This, he learned, was a mistake, and in several instances he was forced to perform a second operation to remove these offending structures. In his later cases he excised the entire large bowel, leaving only the rectum. The most distressing after-symptom was constant and prolonged vomiting which, however, was relieved by copious subcutaneous infusions of saline solution. Another advantage of these saline injections was the prevention of fixation of the dilated small intestine by adhesions—at least they appeared to obviate this complication.

The results of the operation were striking. The relief of the pain and of the autotoxemic symptoms was so pronounced and so immediate that there could be no doubt it was due to the exclusion of the large intestine, thereby seeming to confirm Metchnikoff's theory that the larger bowel is simply an immense incubator for the cultivation of noxious bacteria. The operative mortality was not large—6 deaths among the 39 patients operated upon, or about 17 per cent.—and it is fair to assume that a more careful selection of suitable cases and greater experience may reduce the proportion. Nevertheless it was sufficiently great to raise doubts as to the justifiability of the procedure in any but the most desperate cases. The medical treatment of autointoxication is only in its infancy, and until the condition is better understood, until we have acquired a more positive knowledge of the factors in its causation, and especially until we are sure that the large intestine is really as useless and as harmful as it is accused of being, such a radical measure as the entire removal of this portion of the gut is hardly to be recommended. Metchnikoff claims to have succeeded in restraining the pernicious activity of the intestinal flora by implanting cultures of lactic acid bacteria, and there are other means, dietetic and medicinal, at our command whereby colonic fermentation can be restrained. Until these have been exhausted most of us will doubtless prefer to worry along with our six-foot long sewer. What effect the removal of the colon will have upon the longevity of Mr. Lane's patients must be left to the observation of future generations of practitioners.

INFANT MORTALITY AND INSANITATION.

In all centers of population in the civilized world, the death-rate of young infants is very high. American cities are no exception to this phase of modern life, although perhaps on the whole they are in a better position in this respect than are the majority of European manufacturing towns. The big industrial parts of Great Britain hold a very unenviable place, so far as infant mortality is concerned, and various theories are being continually projected to account for this unsatisfactory state of affairs. Recently some well-known medical men have stated it as their opinion that insanitation has little to do with infant mortality. Of course, the belief of the majority of medical authorities is in quite an opposite direction, and it has been often said that the infantile mortality rate of a district is the index of the sanitary state of that district.

There are certainly some diseases to which very young children are peculiarly liable which cannot be truthfully put down to the sanitary condition of a neighborhood, but with the large group of diarrheal diseases it might be expected that a fairly unanimous consensus of opinion would exist.

However such is not the case. For instance, Dr. Ralph Vincent, in giving evidence before the British Inter-departmental Committee on Physical Deterioration, says: "The great factor in the causes of disease among infants is, invariably, improper feeding. Diarrhea, cholera infantum, atrophy, gastro-enteritis, diseases of stomach, are the chief headings. Inflammation of the bowels, inflammation of the stomach, dentition, bronchitis, pneumonia, and convulsions are generally the secondary results of bad infant feeding."

Dr. Alfred Hill, of Birmingham, another English physician who has made a special study of the causes leading to infantile mortality, has come to similar conclusions. Again the figures given by Dr. Nixen for the Jewish population of Cheetham, in which it is shown that the infantile death-rate among them is much less than that of their Christian neighbors, and the well known fact that although poor town Jews everywhere are massed together under unsanitary conditions, and that the death-rate of their young children is relatively small, seems to be another strong argument in favor of the contention that unsanitary surroundings have no important influence upon the infantile mortality. At any rate, it is certain that a considerable amount of doubt exists even now, as to the significance of the role played by dirt and its concomitants in the causation of sickness and death among infants.

In the *British Journal of the Royal Institute of Public Health*, for January of this year, Dr. E. H. Snell, Medical Officer of Health for Coventry, in a well written article attempts to controvert assertions of this nature. He is of the opinion that the real solution of the problem of how successfully to combat diarrhea, the most fertile cause of infantile mortality, is to aim at two matters: (1) The reduction to its smallest limits of the number of those infants who have to be artificially fed. (2) The provision for those who have to be so fed of a bacteria free food. The author points out that the second desideratum resolves itself into the combating of those factors which tend towards an impure milk supply. This is an obvious matter and has been so fully dealt with during the past few years that we will not waste time in discussing it now.

The feature of Dr. Snell's article is to show that in the summer of 1906, in Coventry, flies had a great deal to do with the prevalence of infantile diarrhea and the consequent high death-rate among infants in that city. During most of the summer of 1906, the weather was exceptionally hot and dry, rainfall being very far below the average, while bright sunshine was greatly above the average. Indeed, given other favorable conditions, the weather was ideal for the propagation and dissemination of flies. It appears, from Dr. Snell's account, that other conditions were present in Coventry, such as manure pits, private slaughter-houses, offensive rag and bone businesses, and any amount of dust. When it is said that these conditions were present, it should be understood that three wards of the city had a practical monopoly of these nuisances, and it was in these very wards that a high death-rate prevailed. Within this area there is stated to have been a veritable plague of flies; "it was quite impossible for the householders to pick up any food which had not immediately before been covered with flies; to keep food or milk uncontaminated, in such circumstances, would have been impossible."

Therefore, Dr. Snell concludes, and it appears he has ample justification for this conclusion, that flies, the presence of which in such numbers was due to unsanitary conditions, were responsible to a very large extent for spreading disease among the young children of this ill-savored quarter. He likewise holds the view, that a case of this sort goes a long way towards the theory that unsanitary surroundings, *per se*, do not bulk largely in the causation of infantile mortality.

OMENTOPEXY.

Operative treatment for ascites, due to cirrhosis of the liver was suggested by Drummond and Morrison in 1896, and by Talma in 1898. Their idea was to establish a collateral circulation between the visceral peritoneum of the omentum, liver, and spleen and the parietal peritoneum in order to relieve the portal congestion. To-day the general belief is that the operation also gives relief by causing more or less obliteration of the peritoneal cavity, and by increasing the supply of arterial blood to the surface of the liver, which tends to nourish and maintain the utility of many of the liver cells near the surface.

In recent years the operation has become recognized as a procedure which is usually followed by more beneficial results than the older method of frequently repeated tappings. That it may not come into disrepute, this surgical treatment should not be employed indiscriminately, but only in certain cases of ascites. In the December, 1907, number of the *Practitioner*, Ketchen and Thomson considered the conditions suitable for omentopexy. They first draw attention to the causes of the ascites, attributing it not solely to an obstruction of the portal circulation, but partly to an inflammation of the peritoneum itself. If the transudation of the blood vessels were the principal factor, the natural course of the effusion would be into the lumen of the stomach and bowels, as is evident from the anatomical distribution of the vessels; furthermore, experimental ligature of the portal vein is not immediately followed by an effusion into the peritoneal cavity. Ketchen and Thomson recognize two clinically well-defined classes of cases in which ascites is associated with cirrhosis of the liver. In the first class, the presence of free fluid in the abdominal cavity is an early sign, showing itself at a stage when there are not many symptoms of general systemic poisoning. These patients stand tapping well, and show improvement after such treatment. In the second class of cases the ascites is present in the late stages, when the general systemic disturbance is well marked. These do not stand tapping well, nor do they show any improvement following it.

Having come to the conclusion that the exuded fluid in both clinical types is due to peritonitis, they offer an explanation of the clinical varieties. They hold that in the first class the peritonitis is an en-

tirely local condition caused by the same poison which produces the changes in the liver, but not dependent upon the latter. The morbid changes in the liver have not proceeded far enough seriously to impair its functional role in the metabolism of the body. Drainage of the peritoneum in these cases relieves a local condition, the inflamed peritoneal surfaces come together, and the peritoneal cavity becomes more or less obliterated by adhesions. In the second class, the liver functions are so impaired that poisons find their way into the general system, causing inflammatory changes in many organs and in the peritoneum; the peritonitis is then toxemic in origin. In these latter cases, removal of the ascitic fluid is in no way beneficial, the ascites being a symptom of a general poisoning, not a local one. It is clear that omentopexy may produce great amelioration of the symptoms in the first class of cases while it is entirely useless in the second, and of problematical value in the intermediate cases. The authors then point out the clinical symptoms from which the underlying pathological condition may be induced and so give the indications for operation. One of the first is the result of tapping. If the patient is tapped several times successfully, his general condition remaining good, it is very likely that an omentopexy will be beneficial. If, in addition there are no evidences of kidney changes, if there is no general swelling, and the enlargement of the abdomen has not been preceded by any swelling of the legs, the outlook is also favorable. On the other hand, heart disease, constant albuminuria, swelling of the legs preceding swelling of the abdomen, and a progressive deterioration of the general condition, notwithstanding paracentesis, all these contraindicate operation, which in such cases is not likely to afford much relief.

Orthostatic Albuminuria.

The question of orthostatic albuminuria is one of perennial interest and in spite of the thoroughness with which it has been studied there is still no unity of opinion in regard to it. Some authors consider it simply an increase in the physiological excretion of albumin, others regard it as a distinctly pathological process but little removed from a real nephritis. The etiology is equally uncertain, and while von Noorden assumes an abnormality of the serum albumin and calls the condition an albuminous diabetes, others explain it as due to alterations in blood pressure attending the changes in position, and still others, like Pfaundler, hold that it is an accompaniment of latent tuberculosis. The remarkable observations made by Jehle (*Münchener medizinische Wochenschrift*, January 7, 1908) on seven children exhibiting the symptoms are therefore noteworthy. He found that it was essentially the condition of the vertebral column that was concerned with the excretion of the albumin while in the upright position, and that if the child were placed so that no lordosis was caused, the vertical position did not induce albuminuria. This was effected, for example, by having the child kneel and at the same time sit on its heels, or by preventing it from assuming a perfectly erect position by connecting its neckband and a pelvic belt by a band which kept the trunk inclined forward. Under these conditions no albumin appeared, but if the body was held erect it promptly did so, while on the other hand a patient whose trunk was encased in plaster while erect continued to excrete albumin when put to bed with the jacket on. Examination of the children's spines showed that there was an abnormally pronounced lordosis at the level of the first and second lumbar vertebræ apparently due to deficient development of the musculature, and Jehle believes that through traction either on the vessels or the ureters circulatory disturbances are set up which lead to the albuminuria. This theory is especially attractive as in addition to its plausibility it offers a hopeful outlook for therapeutic endeavors directed to correction of this vice of conformation by suitable exercise, braces, etc.

The Treatment of Pruritus.

It has been said that, like eczema, pruritus forms a touchstone for testing the ability of a dermatologist, and few who have once encountered an obstinate case of this sort would be likely to belittle the difficulty of the therapeutic problems involved. Kromayer (*Deutsche medizinische Wochenschrift*, January 9, 1908) says that the lack of success frequently attending the ordinary treatment is due to the fact that this is purely symptomatic, and he describes two methods that he considers are founded on etiological principles. The symptoms of pruritus he believes is caused by the formation in the epidermis of minute vesicles which can be demonstrated and destroyed by the application of 15 per cent. caustic potash solution, brushed over the affected area by means of a pledget of cotton. In a few seconds tiny pin-head sized spots appear which on washing the surface with water swell up and resemble sago grains. These are the vesicles which owing to the thinness of their covering were more readily penetrated and destroyed by the lye. Areas of considerable size or even an entire limb may be treated in this way, the pain though severe subsiding promptly on washing with water. The tiny ulcers resulting heal in a few days under a wet dressing and a single treatment sometimes suffices to cure a pruritus of long standing. The cauterization is contraindicated so long as the area is inflamed or eczematous, is excoriated, or is weeping, and these conditions must first be relieved by symptomatic remedies. Mucous surfaces also are not suitable for the treatment. A similar result may be obtained by the use of the *x*-rays which also have the property of destroying the vesicles, though a rather intensive application is needed and the operator must not shrink from producing a mild degree of cutaneous reaction.

To Accelerate the Course of Labor.

So much has been said lately of various methods for rendering childbearing less painful by means of spinal anesthesia or the subcutaneous injection of narcotics that it is interesting to hear of another suggestion intended to shorten the process merely by mechanical measures. Landau (*Berliner medizinische Wochenschrift*, January 6, 1908) says that the duration of labor can be much abbreviated if, after it has begun and the pains are well started so that the head is firmly engaged, the obstetrician with one or two fingers dilates the cervix and endeavors to push it back over the advancing head. This is frequently repeated from time to time and has the effect of greatly stimulating the uterine

contractions so that, especially in multiparæ, the labor can be terminated in a few hours without detriment to mother or child. The procedure is intended to act mainly through the stimulation of the automatic centers in the cervical canal evoking the pains, the actual dilatation effected being of less importance. Essential conditions are that the cervix is already beginning to soften, that the head is firmly engaged so that there is no danger of distributing the presentation, and the most rigid asepsis, including the use of rubber gloves. If properly carried out Landau asserts that there is no danger of infection or laceration and he recommends the method for use in normal cases and for facilitating the complete dilatation that must precede the application of forceps.

The New Hejira.

On Sunday, January 26, 1908—it is important to note the exact date, for neglect to do so when Mohammed moved to Medina from Mecca has been a cause of much acrimonious dispute in the Muslim world—the Rev. Mother Mrs. Mary Baker G. Eddy, the "discoverer and founder of Christian Science," as the press agent of the sect officially designates her, changed her domicile from Concord, N. H., to Boston, Mass. There is nothing especially worthy of comment in this, for Boston is a much more lively town than Concord, and it is not surprising to learn that Mrs. Eddy prefers to live there. But what is interesting is the fact that she took with her on the journey a practising physician, just as many other persons of advanced years, failing strength, and ample fortune are wont to do when traveling. It is well known that Science healers often keep a licensed physician within call to sign the death certificate when malicious animal magnetism gets the better of their demonstrations, but it is not likely that any of the Mother's companions was in danger from her ministrations during the brief journey. It is evident, therefore, that Mrs. Eddy took a physician along just as any other frail old lady might have done, in order to avail herself of his services in case of need. She seems to be a wise and prudent person unwilling to take the chances of accident or sudden disease when surrounded only by a carful of her own foolish followers.

News of the Week.

Scientific Temperance Federation.—This organization, at its annual meeting just held in Boston, received reports showing that during the year its collection of scientific and other data on the alcohol question has been increased by the addition of over 1,000 books, pamphlets, abstracts, and references. This special library, regularly catalogued and indexed, is held at the disposal of every organization, student, or social worker desiring information on the alcohol and narcotic questions. The secretaries reported also the preparation and publication of over 1,200,000 pages of scientific and educational matter relating to this special subject; a correspondence of more than 6,000 letters to all parts of the United States and to thirteen foreign countries; and the issuing of a press circular containing scientific facts to editors representing a wide range of interests and several millions of readers. The officers elected for the ensuing year were: *President*, William C. Lilley, Pittsburg, Pa.; *Vice-President*, Mrs. S. S. Fessenden, Boston; *Recording Secretary*, E. L. Transeau, Boston; *Corresponding Secretary*, Cora F. Stoddard, Boston; *Treasurer*, Robert H. Magwood, Boston. The directors are: Dr. T. D. Crothers, Hartford, Conn.; E. O. Taylor, D.D., Boston; Mrs. A. J. Gordon, Boston; Dr. T. Alex. MacNicholl, New York; John Herbert, Esq., Boston; W. A. Mowry, Ph.D., Hyde Park, Mass.; John Marshall Barker, Ph.D., Boston; Rev. Richard Wright, Cambridge, Mass. The headquarters of the Scientific Temperance Federation are at 23 Trull street, Boston, Mass.

International Tuberculosis Congress.—A meeting of the Executive Committee of the New York State Committee on the International Congress was held in the New York Academy of Medicine, Saturday, January 11. The Committee outlined a plan for the enlargement of its membership and for stimulating interest in the objects of the Congress in all parts of the State. The membership of this Committee is as follows: Dr. Alfred Meyer, New York City, *Chairman;* Dr. H. D. Pease, Albany, *Secretary;* Dr. Thomas Darlington, New York; Hon. Homer Folks, New York; Hon. Robert W. Hebberd, New York; Dr. Veranus A. Moore, Ithaca; Dr. J. H. Pryor, Buffalo. The Committee will meet in Albany in connection with the public meeting on tuberculosis to be held in Harmanus Bleecker Hall, Monday evening, January 27, at which addresses will be made by Governor Hughes, Professor Welch, of Baltimore, and other prominent men. Ex-Ambassador Choate will preside.

An Antituberculosis Meeting was held in Albany on Monday evening, in connection with the meeting of the State Medical Society, under the auspices of the State Charities Aid Association and the State Health Department. Governor Hughes, Lieutenant-Governor Chanler, Joseph H. Choate, Health Commissioner E. H. Porter, and others spoke. Prof. William H. Welch of Johns Hopkins University was also present and spoke. Secretary Homer Folks read a letter from President Roosevelt expressing regret that he could not be present, but asserting his great interest in the work of the association. The President sent the assurance of his interest, sympathy, and approval in the work the association had undertaken to organize local effort for the prevention of tuberculosis in the State of New York, outside of New York City.

Movement to Check Tuberculosis in Illinois.—Physicians throughout Illinois are urging the passage of the Glackin Bill, enabling cities and villages to establish public sanatoria for the treatment of consumption. The measure, which recently passed the Senate, and is now on second reading in the House, aims to arrest the progress of the disease by affording all communities a chance to combat tuberculosis by giving the latest scientific treatment free to all inhabitants afflicted with the disease.

Fresh Air School.—A "fresh air school" has been opened in Providence, R. I., under the auspices of the Rhode Island League for the Suppression of Tuberculosis. It will be held in a room with large windows on three sides which will be kept open much of the time, the children not removing their wraps and being provided with foot warmers to keep their feet warm.

Trenton's Water Supply.—The committee appointed to investigate the recent typhoid fever epidemic in Trenton, N. J., in a preliminary report to the Common Council has recommended the appropriation of $2,500 to be used by the Board of Health in obtaining expert opinions in regard to the water

supply of the city and the best means of improving it. The committee says that it is highly probable that the Delaware River must continue as the source of water supply for Trenton, but that it has been demonstrated that this water is contaminated with sewage.

Parasites in the Appendix.—Dr. M. Clayton Thrush writes that he has received from Dr. Perry B. Preston, Superintendent of the Paraiso Hospital, C. Z., Panama, a letter referring to Dr. Thrush's article on Appendicitis Due to Oxyuris Vermicularis which appeared in the MEDICAL RECORD of December 28, 1907, and describing two cases bearing on this subject. In one of these at an autopsy on a yellow fever patient a live *Ascaris lumbricoides* and a live *Trichocephalus dispar* were found in the appendix, which showed no signs of inflammation, and in the other at an operation for appendicitis a live round worm was found in the appendix.

Catarrhal Conjunctivitis at Annapolis.—An epidemic of pink eye has broken out among the midshipmen at the Naval Academy, at Annapolis, and over seventy-five cases have been under treatment.

Plague in China.—There have been four deaths by the plague a short distance west of Hwang-hien, in the province of Shantung.

Makes Doctors His Victims.—Several Harlem physicians last week received visits from a well-dressed young man who called to inquire whether the doctor had treated a woman who had been injured in an automobile accident a few days before. When the young man took his leave some of the doctor's movables usually went with him.

Physicians' Building for Cleveland.—A number of the physicians and dentists of Cleveland have announced the plans for a million dollar building to be erected by them exclusively for professional purposes. The structure will be fifteen stories in height and is to be erected in Euclid avenue near East Ninth street.

Druggist Convicted.—A druggist having a store on Third avenue, Brooklyn, was last week convicted in the Court of Special Sessions, on evidence furnished by the King's County Medical Society, of practising medicine without a license, and was sentenced to ninety days' imprisonment in default of a fine of $500.

The Nicholas Senn Estate.—Letters of administration were issued recently by Probate Judge Cutting to Dr. E. J. and Dr. William Senn, sons of the late Dr. Nicholas Senn. Dr. Senn died intestate, leaving property valued at $180,000. Of this amount, $150,000 is in personal property. The administrators filed bonds of $300,000. The estate will be shared by the sons and the widow. An estate of $402,000 in Wisconsin was also left by Dr. Senn, acording to the petition of his sons. Most of the Wisconsin holdings are scheduled as personal property, being mortgages on real estate.

Emergency Hospitals in Chicago.—A system of emergency hospitals for the care of persons injured in accidents will undoubtedly be in operation in Chicago within six months, according to the present indications. The plan now under consideration involves a joint arrangement between the county and the city, whereby the former will operate the emergency hospitals and care for the victims of accidents in all parts of the city, while the latter will have jurisdiction of all cases of contagious diseases. The system of hospitals it is proposed to establish includes a central hospital within the loop district; branch hospitals at the Stock Yards, South Chicago, and in the northwest and southwest quarters of the city; certain private hospitals in other sections to be authorized to care for the victims of accidents at the expense of the county.

Bequests by Dr. Ordronaux.—More than half of the estate of $300,000, left by the late Dr. John Ordronaux, of Glen Head, L. I., is bequeathed to charitable and educational institutions. The bequests include $6,000 to the Nassau Hospital Association for the endowment of a bed, $6,000 to the Jamaica Hospital for the same purpose, and $6,000 to the Flushing Hospital; Dartmouth College, $30,000; Mary Hitchcock Hospital, $6,000; University of Vermont, $10,000; Trinity College, Hartford, $10,000; George Washington University, $5,000; Little Sisters of the Poor, New York City, $5,000; Old Colony Historical Society, $1,000; Marton Hospital, Taunton, Mass., $6,000; Boston University, $2,000; Columbia University, New York City, $3,000; destitute blind of New York City, $5,000; Children's Aid Society, New York City, $5,000; Industrial Christian Alliance, New York City, $5,000.

Gifts to Mount Sinai Hospital.—At the meeting of the officers of this hospital last week a gift of $6,000 to the endowment fund was announced and it was stated that other gifts during the last year had amounted to $18,892.12. The total income in 1907 amounted to $351,837.19 and the expenses to $383,057.48. During the year 6,173 patients were admitted, and 177,829 were treated in the dispensary.

Railway Casualties.—According to last bulletin of the Interstate Commerce Commission there were more than 21,000 casualties on the railroads of the United States in the three months ended September 30, 1907. The exact figures were 1,339 killed and 21,724 injured. This is an increase of 157 in the number killed and 3,056 in the number injured as compared with the corresponding period of 1906. The total number of collisions and derailments in this quarter was 4,279, of which 320 collisions and 222 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to $3,605,696.

New York's Birth Rate.—The vital statistics of the Board of Health for 1907 show that during that year there were 125,126 births in the city, as against 111,772 in 1906, the gain being the greatest since 1847. The rate is now 40 per cent. higher than that of Paris. The deaths were 79,205, equivalent to a rate of 18.48, and about 3,000 in excess of those of 1906.

A Conviction for Exposure to Contagious Disease.—A nursemaid employed in a family living in this city was last week found guilty in the Court of Special Sessions of violating section 143 of the Sanitary Code in taking a child into a house occupied by a person suffering from a contagious disease. It was charged that on January 15 the girl took one of her employer's children to the house of her sister who had a daughter ill with scarlet fever. Sentence was suspended.

Died at One Hundred and Twenty.—Mrs. Mary Ramsey Wood, a native of East Tennessee, has died in Bristol, Va., at what is claimed to be the well authenticated age of one hundred and twenty years.

The "New York Polyclinic Journal."—After an interval of ten years the publication of this monthly

is to be resumed under the editorship of Dr. Charles H. Chetwood.

The Kerr, Kendall, Gillespie, and Bandera Counties (Tex.) Medical Society.—The following officers for this society were elected at the meeting held in Kerrville on January 14: *President,* Dr. F. L. Fordtran; *Vice-President,* Dr. R. L. Combs; *Secretary and Treasurer,* Dr. A. K. Tainter.

Central Medical Association of Oklahoma.—This association met in Enid, on January 14, and elected the following officers: *President,* Dr. J. H. Barnes of Enid; *Vice-Presidents,* Dr. J. B. Young of Oklahoma City and Dr. E. D. Seabright of Carmen; *Secretary-Treasurer,* Dr. J. B. Cullom of Hennessey.

Dubuque County (Ia.) Medical Society.—The following were elected as officers for this society at the meeting held in Dubuque on January 14: *President,* Dr. James Alderson; *Vice-Presidents,* Dr. A. H. Blocklinger and Dr. Reiner; *Secretary,* Dr. H. G. Langworthy; *Treasurer,* Dr. Lillie Kinnier.

New Haven Medical Society.—The election of officers of this society, held at the meeting on January 18, resulted as follows: *President,* Dr. Edw. M. McCabe; *Vice-Presidents,* Dr. A. N. Alling and Dr. M. H. Steele; *Secretary,* Dr. E. R. Whittemore; *Treasurer,* Dr. R. E. Peck.

North St. Louis Medical Society.—This society has elected officers as follows: *President,* Dr. H. J. C. Sieving; *Vice-President,* Dr. A. A. Henske; *Secretary,* Dr. H. J. Niebruegge; *Treasurer,* Dr. A. F. Koetter.

Whatcum County (Wash.) Medical Association.—Officers as follows were elected at the meeting of this society held on January 13: *President,* W. H. Hunt; *Vice-President,* Dr. Keyes; *Secretary,* Dr. Torney; *Treasurer,* Dr. Jacob Smith.

Memorial Service for Dr. Senn.—On February 2 there will be services in memory of Dr. Nicholas Senn, at the Fine Arts Building, Chicago. President James, of the University of Illinois, will preside.

Obituary Notes.—Dr. John Ordronaux of Glen Head, L. I., died of apoplexy, on January 20, at the age of seventy-seven years. He was born in New York City and was graduated from Dartmouth College with the class of 1850, from Harvard Law School two years later, and from the National Medical School in 1859. From 1872 to 1882 he was a member of the State Commission in Lunacy and he was the author of numerous works on medical jurisprudence. Since 1861 he had been a lecturer on medicolegal subjects in the Columbia University Law School, Dartmouth College, University of Vermont, and Boston University.

Dr. Robert S. Blakeman, Assistant Surgeon, U.S.N., retired, died suddenly, on January 22, in the naval hospital at Norfolk, Va. Dr. Blakeman, who was obliged to retire because of failing eyesight, distinguished himself in active service during the war with Spain, being on the cruiser *Boston* in the battle of Manila Bay.

Dr. Frederick A. Burrall, formerly of this city, died at White Plains, N. Y., on January 21, in his seventy-fifth year. Dr. Burrall was a graduate of Williams College and of the College of Physicians and Surgeons, and in 1857 was a member of the Faculty of that institution. He was a member of the Academy of Medicine.

Dr. David A. Hoffman of Oskaloosa, Ia., died on January 13 at the age of eighty-one years. He was born in Jackson County, O., and received his medical training under Dr. William Blackstone of Athens and at the Western Reserve College, in Cleveland, from which he was graduated in 1848. Since that time he had continued in active practice until a few weeks ago. He was well known as a geologist and archeologist and his collections in these sciences were very large and valuable.

Dr. August Rodch of St. Louis, Mo., died on January 14 of apoplexy, at the age of eighty years, while making a professional visit. He had practised in St. Louis for nearly sixty years, continuing in active work in spite of his advanced age.

Dr. M. L. Banks of Columbia, Miss., died on January 9 at the age of seventy-six years. He was born in Westville, Miss., and had practised in Columbia for nearly fifty years.

Dr. William Terry of Ansonia, Conn., died on January 14 at the age of eighty-six years. He was born in Enfield and had practised in Ansonia since 1860. During the Civil War he served as assistant surgeon in the Army Hospital at Alexandria.

Dr. J. Eugene Kelly of New London, Conn., died in Springfield, Mass., on January 18, at the age of thirty-nine years. He was born in Canada, and, after spending his boyhood in Pittsfield, Mass., was graduated in medicine from Albany Medical College. After practising for a time in Pittsfield he removed to New London.

Dr. Henry W. Painter of North Haven, Conn., died on January 16 at the age of seventy-six years. He was graduated from Yale Medical School in 1856 and for many years practised in West Haven. For the past fifteen years he had lived in North Haven.

Dr. Paul C. Esbjorn of Rock Island, Ia., died in Chicago, after a surgical operation, on January 18. He was born in Sweden, in 1870, but was brought to this country while a child and was graduated from Augustana College in 1894; later he received his medical degree from the State University and practised for a time at Stafford, Ia. Ill health compelled him to give up active work about a year ago.

Dr. Asa W. Wilkinson of this city died, on January 25, at the age of seventy-five years. He was born near Cayuga Lake, N. Y.; was graduated from Brown University, and studied medicine at the New York Medical College, taking his degree in the '50s. After hospital service here he engaged in chemical technology and became assistant to Prof. R. Ogden Doremus at the New York Medical College and afterward at the Bellevue Medical College and the College of the City of New York. Dr. Wilkinson was well known for many improvements he made in the manufacture of illuminating gas.

Dr. Percival E. Lodge died at Philadelphia, on January 19, at the age of fifty-five years. He was graduated from Jefferson Medical College in the class of 1875 and he subsequently served as resident physician in the Philadelphia Hospital. He was for twenty years police surgeon and for ten years professor of anatomy in the Pennsylvania College of Dental Surgery.

Dr. Patrick M. Kelly died at Philadelphia, on January 20, at the age of seventy-four years, after a protracted illness. He was graduated from the Philadelphia College of Pharmacy in 1879 and from the medical department of the University of Pennsylvania in the class of 1881.

THE FIFTH HARVEY SOCIETY LECTURE.

The fifth of the present series of lectures given under the auspices of the Harvey Society was delivered in the Academy of Medicine on Saturday, January 25, in the presence of a large audience. The speaker was Professor George W. Crile, of Western Reserve University, and the subject was "Shock."

Before beginning his address the speaker demonstrated a number of instruments which he had found very useful in performing direct transfusion of blood. These, he stated, were modeled largely after some of the instruments used by oculists and by jewelers. He would not dwell on the pathology of shock, nor on the very interesting series of experiments which had led him to adopt the present line of treatment. These phases of the subject would be found discussed in a number of papers published by him in the past few years. The speaker would take it for granted that his auditors were familiar with the views there expressed, and would pass on to the differential diagnosis of shock and hemorrhage. The diagnosis of these two conditions could often be cleared up by an examination of the blood, especially as to the hemoglobin and as to the leucocytes. In hemorrhage, after a time, there was usually a drop in the hemoglobin and a moderate leucocytosis. In shock there was little change in either. The essential causes of shock were, of course, a fall in the blood pressure and a functional breakdown of the vasomotor center, due to excessive afferent stimuli and to anemia. It was apparent that after a time a vicious circle was thus established. The speaker said there was a strong psychic element in shock, and described in detail a number of procedures to guide the surgeon and the nurse in managing the patient before an operation. There were cases in which attention to these details, trivial as they might seem, would mean the saving of the life of the patient.

It was readily understood that, as shock was largely caused by an insufficient blood supply of the vasomotor center, the combination of shock and hemorrhage was very grave. This, however, was a common combination and it demanded that the surgeon understand thoroughly all the ways of combating the conditions. Up to three per cent. of blood could be lost by an average healthy adult, without any apparent effect. In infancy and old age, however, the proportion was much less. The technique of the surgeon then should save the blood supply as much as possible. The choice of anesthetics was also of considerable importance. Nitrous oxide produces a considerable rise of blood pressure, and therefore could not well be used in cases associated with much hemorrhage. Chloroform produced less rise of pressure than did ether, but in this country at least it was feared because of its occasional harmful effects. Rough work about the skull, such as chiseling instead of drilling, was also productive of shock. There should be less blunt dissection. All of these things increased the afferent stimuli to the already overtaxed vasomotor center. In operations about the mouth, pharynx, or larynx, it was well to cocainize the mucous membrane prior to the operation, thus shutting off these afferent impulses. A dose of atropine should also be administered. The speaker described several cases in which he had operated about the larynx and caused the production of symptoms of shock by his manipulations on the mucous membrane. Since he had learned the cause of the symptoms, and had cocainized the tissues, he had had no such accidents.

Dr. Crile then discussed the technique of operations about the thorax, in the abdomen, and on the lower extremity. Each of these had its peculiarities so far as shock was concerned. It was curious that the upper part of the abdomen was more sensitive in this respect than the lower part. He warned against undue exposure of the intestines in abdominal operations. It was surprising how much good could be accomplished by the injection of morphine shortly before an operation. This procedure was especially valuable in operations in the abdomen. He had not seen this give rise to temporary paresis of the gut as was feared by many surgeons. Cocaine should also be used more in operations to check the excessive afferent impulses from the site of operation. A one-tenth of one per cent. solution would often do wonders.

So much, then, for the ways of preventing or diminishing shock. The question often came up whether, in cases of traumatic shock, one should operate during shock, or wait until the patient had come out of that condition. The answer to this would depend on whether one could successfully block the afferent impulses, as just described, and whether one had facilities for doing a direct transfusion. If either of these were possible, he would prefer to operate at once. The speaker criticised the various methods of combating shock, which had been in current use even up to a short time ago, and were still largely relied upon by those ignorant of the essential nature of shock. Overstimulation was worse than useless. What the vasomotor center needed was rest, and an increased blood supply. The injection of morphine, therefore, was good, and to this should be added a head-down posture. If possible the pneumatic rubber suit should be applied, or at least the patient's limbs should be tightly bandaged. After all, however, the final treatment of shock was direct transfusion of blood.

The speaker then described in detail his technique for direct transfusion. The first requisite was to secure a suitable donor. He had found that this was a simple matter. There was, so to speak, a psychological moment in which to broach the subject to a prospective donor. This was directly after he had left the bedside of the patient, and was still full of sympathy. A few words as to the gravity of the case, and of the one possibility of saving the patient's life, usually brought forth a voluntary offer on the part of the friend. If not, the explanation that the process was free from pain and from all danger to the donor would probably bring the required answer.

The suitability of the donor's blood should be tested, as now and then normal hemolysins were present and caused considerable disturbance. These hemolysins were frequently present in cases of malignant tumors. Thus in thirty cases with such tumors which he had examined, he had found hemolysins present twenty-six times. The patients were placed on tables side by side, but with heads in opposite directions. The arms were placed on a table between the patient and donor, and then the process of transfusion was performed. Cocaine was the anesthetic, a solution of one-tenth per cent. being infiltrated into the tissues.

The technique of the operation was described in detail. The transfusion ordinarily took about one hour. The improvement in the patient was remarkable, and was usually noticeable within ten minutes after the beginning of the transfusion. The heart

beats became stronger, the breathing fuller and slower, the color of the lips returned, the eyes became brighter, and the mental state cleared up. Direct transfusion was the one great treatment for shock; it could not be replaced by transfusions of physiological salt solution, or of so-called artificial serum. In closing, Dr. Crile gave a description of a desperate case in which he had successfully employed transfusion.

Dr. Joseph D. Bryant moved the thanks of the society to the speaker, after which the chairman announced that the next lecture in the series would be delivered on February 9 by Professor Joseph Jastrow, the subject being "Subconsciousness."

Correspondence.

ACETATE OF ALUMINIUM OR ACETATE OF AMMONIUM?

To the Editor of the Medical Record:

Sir:—In Dr Morton's excellent article on the "Treatment of Chancroidal Bubo" in the Medical Record of January 25 there occurs what seems to me an error, which it would be a pity to let go uncorrected. In two places Dr. Morton mentions fomentations with solution of acetate of *ammonium*. The author mentions that he saw the method employed in the Charité in Berlin. As solution of acetate of ammonium is not used for fomentation purposes at the Charité or at any other German hospital that I am familiar with, while solution of aluminium acetate (the old well-known Solutio Burrowi) *is*, I believe it is the latter that the doctor had reference to.

It might also be stated that solution of ammonium has no resolving, antiphlogistic, or antiseptic properties. On the contrary, its application to an inflamed surface would in many cases prove irritating. Solution of aluminium acetate, on the other hand, is one of our best media for applying compresses; mildly antiseptic, non-irritating, cooling, and resolvent.

William J. Robinson, M.D.

A CHILDREN'S HOSPITAL BRANCH OF THE ANTI-NOISE SOCIETY.

To the Editor of the Medical Record:

Sir:—A few weeks ago you were kind enough to call attention to the ordinance establishing "quiet zones" for hospitals and to the "hospital street" signs about to be erected by the city. These signs are now being rapidly put in place and have already been effective in materially reducing the suffering of our hospital inmates from unnecessary noise. Almost every institution with which I have communicated has assured me that a marked improvement has already taken place, while from a few the reports are most gratifying, as from the German Hospital, whose superintendent states that "In the ten years that I have been in this place I have never known such quiet." The willingness of many to help the sick, now that their attention has been directed to the matter, is shown in a variety of ways, of which many touching proofs reach us.

The action of the city in creating "hospital zones" will probably be more successful in quickly reducing the unnecessary noises of traffic and manufacture than in immediately suppressing the boisterous pastimes of children. Youth is forgetful, and until we can touch the heart of the child and make it understand what pain its own individual acts can cause the sick we must not be surprised if the hospital ordinance is frequently disregarded. Therefore, in our efforts to leave nothing untried which might relieve our sick, we have now taken steps to form a "Children's Hospital Branch" of our society, the members of which will wear button badges and will promise not to play near hospitals or other places where illness is known to exist. We both hope and believe that this movement will be of, at least, as much benefit to the child as to the patient, and that the thought that it can be, as it were, a protector of the sick will touch its heart and elicit its sympathy.

In order to ascertain whether we were right in believing that this junior branch would be of importance to children as well as to hospital inmates, we consulted a number of public men, city officials, educators, divines, physicians, and hospital superintendents, and from one and all received the most gratifying encouragement.

Among those who have earnestly supported the plan to secure the cooperation of the children I may mention Dr. Thomas Darlington, President Nicholas Murray Butler of Columbia University, Dr. William H. Thomson, Dr. Thomas L. Stedman, Mr. Richard Watson Gilder, Rev. Dr. J. M. Haldeman, Rev. Dr. Merle Wright, Rev. Dr. Parkhurst, Rev. Fr. George M. Searle, C.S.P., Superior General of the Paulist Order; Rev. Percy S. Grant, Rev. Henry M. Stimson, Rev. H. Pereira Mendes, Professor George W. Jacoby, M.D.; Rev. Dr. Silverman, and many others. As for the superintendents of hospitals, they have eagerly welcomed this hope of relief for their suffering charges.

With such endorsement we felt that we were in a condition to place the matter before the Board of Education and ask it to bring our junior league to the attention of the pupils in the public schools. The Board has cordially endorsed the plan and at a meeting held January 8 passed a resolution directing the City Superintendent to urge upon the principals of the high and elementary schools their hearty cooperation in arousing the interest of the pupils in the proposed Children's Hospital Branch.

The badges are now being made and will probably be ready for distribution in a few days. On a white ground will be a buckled band in blue, inclosing the word "Humanity." Above it will be "Children's Hospital Branch," and beneath it "Society for the Suppression of Unnecessary Noise."

It is our sincere hope that the press, which has hitherto given us such splendid encouragement and assistance, will once more lend us a helping hand in our efforts to relieve the sick, while teaching the young the beauty of thoughtfulness for others and encouraging in it the desire to lighten the suffering of the afflicted. All must rejoice in the conviction that through their own efforts the burden of the world's wretchedness has been somewhat lessened.

Mrs. Isaac L. Rice.

INSTRUCTION IN HYDROTHERAPY.

To the Editor of the Medical Record:

Sir:—Dr. Simon Baruch in his paper on 'Instruction in Hydrotherapy," which appeared in the Medical Record of January 18, makes the following statements: "Columbia University is the first to inaugurate a special course by a special chair of hydrotherapy," and again, "Happily Columbia University has taken the initiative in this movement for the betterment of our therapeutics." It is only just that it should be known that Dr. William H. Diffenbach, himself a pupil of Winternitz, has for several years conducted an admirable course in hydrotherapy in the New York Homeopathic Medical College.

Crawford R. Green, M.D.

New York.

OUR LONDON LETTER.

From Our Special Correspondent

HEALTH OF NAVY—ROYAL SOCIETY OF MEDICINE—SUPPORTS OF THE PELVIC VISCERA—DIGITALIS—INTERSTITIAL KERATITIS—TYPHOID CARRIERS—BENINDEN SANATORIUM—OBITUARY.

London, January [illegible]

The report issued yesterday on the health of the navy in 1906 is most satisfactory, for it shows a continuous improvement. Not only are the case, invaliding, and death ratios for the year lower than the averages for the previous nine years, but the average loss of service for each person has fallen from 12.79 to 10.60 days, and the year's ratios, under each heading, are the lowest recorded since 1856. The medical statistical returns show the ratios per 1,000 of all classes of disease and injury entered on the sick list, as well as the invaliding and mortality from the different forms of disease and injury at the various stations during the year.

The Royal Society of Medicine continues to attract the attention of many without as well as within its Fellowship, as the fifteen sections comprise such a wide range of subjects. Some of them indeed have once or twice proved less interesting than the societies to which they have succeeded, but the majority have maintained a high level at each meeting.

The Obstetrical and Gynecological Section has had a discussion on the supports of the pelvic viscera, begun by Dr. W. E. Fothergill, who in a lucid paper maintained that the current teaching of anatomy in relation to gynecology, though correct in a general sense, is not sufficiently accurate, because the teachers take their anatomical statements from the writings of professed anatomists. But he showed that recent papers by anatomists of the highest rank proved that their views have changed in a way exactly parallel to

that in which clinical gynecology has moved. The utero-sacral ligament is a mere peritoneal fold; the broad ligament a mesosalpinx and mesoovarium; the round ligament a vestigial structure, as are also the muscles of the pelvic diaphragm. In the same way other points go to prove that the old views on uterine supports are untenable and that the uterus is mainly supported by the perivascular connective tissue bundles above the pelvic floor.

The president, Dr. Herbert Spencer, thanked Dr. Fothergill for his interesting paper and mentioned some particulars in relation to the subject to be observed in operations. Dr. Amand Routh thought the author had proved his contention that the uterus was mainly supported as he had stated, and he hoped the new view would be generally accepted.

Dr. Paramone disagreed with the author and said we must consider not only the structures which united the uterus to the pelvic wall and floor, but the intraabdominal pressure, which depended on the capacity of the cavity, the volume of its contents, and the condition of the boundary muscles. The fact that the uterus does not change its form from complete rupture of the perineum had been pointed out by Matthews Duncan, and if prolapse occurred other factors must be brought into play.

If intraabdominal pressure is much increased through deposit of fat, the uterus may be often found high up on account of the activity of the levator ani. If in such a case the pelvic floor gets damaged during parturition, prolapse is sure to follow.

Dr. Briggs thought too much had been attributed to ligaments. The muscular and fibrous tissues around joints controlled their movements. The ligaments of the pelvic viscera were insignificant in comparison with the mass of muscles, fascia, and fibrous packing.

Sir Arthur Macan remarked that the importance of the pelvic connective tissue was shown years ago by Freund, and lately a band on each side of the cervix had been differentiated by Kocks as the *pars cardinalis lig. lati.* The effect of the loss of support below could often be seen when prolapse of the anterior vaginal wall followed rupture of the perineum. It dragged the cervix downwards and forwards, producing backward dislocation of the fundus and finally prolapse. Senile atrophy of the pelvic connective tissue would also produce prolapse by taking away the natural support. The strength of the support from below might also be seen in the resistance to the expulsion of the head in labor.

In the Therapeutical Section the action of digitalis in cardiac cases has been considered in an able paper by Dr. James Mackenzie detailing clinical observations illustrated by a series of tracings. He also showed a heart dissected so as to display clearly the auriculo-ventricular bundle. The results of experiment on animals, he thought, should only be cautiously accepted. In man, he said, the effect of the drug was altogether dependent on the lesion involved. If dilatation was absent and the tonicity of the heart preserved, digitalis would do no good. If the heart was of normal size, dropsy was not of cardiac origin. The irregular pulse of mitral disease he held to be due to a ventricular inception of the heart-beat.

In reply to a question, Dr. Mackenzie said he found as a rule that the changes in tracings due to the drug did not become noticeable for about ten days.

Professor Cushny testified to the great value of these careful bedside observations and the difficulty of experimental research. With the same dose of digitalis given to the same animal, in just the same way there were great diversities in the results.

The Society for the Study of Disease in Children (sometimes jocosely alluded to as the "childish society," more often briefly as the Children's Society) has been engaged in an important discussion on inherited syphilis. The subject is so extensive that only one point can be considered at a time. Mr. Sydney Stephenson contributed a paper on interstitial keratitis, based upon 101 cases. In them he found signs of inherited syphilis in 69.3 per cent., of tubercle in 9.9 per cent., and four cases were due to acquired syphilis. Four-fifths of the patients were aged from five to fifteen, showing how essentially it is a disease of childhood, although cases had been reported as late as thirty-eight years. Of the 101 cases 61 were in females. The symptoms were less typical in the very young. In one of Mr. Stephenson's cases there was an interval of seven years before the second eye was attacked. Ulceration of the cornea had occurred in four of his cases. The term interstitial keratitis is inexact, as the ailment is primarily an inflammation of the tissues of the ciliary body. From this it spreads forward to the iris and deeper layers of the cornea, and backward to the anterior parts of the choroid. Mr. Stephenson insisted on the necessity of grasping this view in order to understand some of the clinical features, *e.g.* the hypopyon often present, and which of course represents exudation from the inflamed ciliary body which has passed through the pupil and so gained the anterior chamber.

The discovery of the *Treponema pallidum* as the specific cause of syphilis and the production of the disease experimentally go far to establish that interstitial keratitis is due to the lodgment and multiplication of the organism in the cornea, where it is dormant until some exciting cause lowers the resistance of the part and so precipitates the attack.

Plastic roentgenography is the pretty term proposed for producing the plastic effects described by Bela of Késmark and which Dr. David Morgan explained with photographs and lantern slides at the Liverpool Institute on the 12th ultimo. Dr. Morgan further demonstrated the plan of inflating the bladder with oxygen for diagnosis with *x*-rays. He showed a photograph of a stone obtained by this plan. The structure of the stone and the outlines of the bladder were well displayed. The transparency of oxygen, he said, rendered any irregularity of the vesical mucosa readily discernible, so that the method should prove useful in the diagnosis of various vesical troubles.

Dr. Davies, Municipal Officer of Health for Bristol, has been for some time engaged in conjunction with a Home Office Inspector in endeavoring to discover the source of a continuous series of typhoid cases in the Brentry Home. From September, 1906, to last November there were 28 cases—two fatal—which could not be accounted for. Dr. Davies now reports that the facts seem to show that a "carrier case" of chronic typhoid intermittently infecting food or milk has been the source of the trouble. A woman who had the disease six years ago seems to have been a "typhoid carrier." She was isolated on November 13 and the last case at the institution was on the 24th, quite within the incubation period, and no case has occurred since. Some German cases, one in New York and one in Scotland, are quoted by Dr. Davies as the only other successful investigations known on this line of research.

The Beninden Sanatorium for Workmen, supported by trades unions and others, opened in March, as I informed you at the time, claims some success. The association which established it has issued its first report. From this I find that 67 cases were admitted up to October 1. Of these, 36 were completed and 31 remained in the sanatorium. Of the 36, there were 29 of pulmonary consumption, 3 doubtful and 4 were cases of other diseases. The 29 are divided into three classes—(a) early cases, eleven in number, all gained weight and returned to work; (b) five moderately advanced cases, whose stay averaged eleven and a half weeks, and four gaining in weight; (c) thirteen advanced, whose stay averaged nine weeks each; of these, five improved, seven did not, and one died. It is remarked of these that, though too far advanced for the disease to be arrested, the patients had learned the best way to live to alleviate their sufferings and to avoid being a source of danger to others.

Dr. John Roberts of Chester died last night at the age of 66. He was a magistrate and alderman, had served the office of mayor and was widely esteemed. He had practised for some forty years in Chester and had been identified with most of its medical charities. He founded the Skin Dispensary. He was also the leading spirit of the Welsh community, which is large in Chester.

OUR PARIS LETTER.

(From Our Special Correspondent.)

RADIOTHERAPY OF VASCULAR NEVI—MORTALITY DUE TO ALCOHOLISM—PLASTIC RADIOGRAPHS—GUNSHOT WOUNDS OF THE EAR—POSTOPERATIVE PAROTITIS—LIGATION OF THE COMMON CAROTID—ELECTION OF PROF. LANDOUZY.

PARIS, December 15, 1907.

An interesting paper on the treatment of vascular nevi with radium by Wickam and Degrais was read before the Académie de Médecine. A series of water color drawings was shown illustrating different types of vascular nevi which had been whitened and cured by this means. They used for the purpose applicators covered with a varnish containing the radium and permitting the action to be regulated by the duration and frequency of the applications. In some instances a cure could be effected by means of mild treatments frequently repeated without causing the least reaction; in other cases, however, it was preferable or necessary to produce a more or less active reaction. In this way the tissues became soft, flexible, lost their color, and presented an excellent cosmetic effect. The easiest to cure were the lesions that were very deeply colored and those which projected some-

what. The method did not cause any pain, so that large areas could be treated and it could be applied even to young infants during their sleep.

Fernet presented an interesting report on mortality due to alcoholism in which he considered the statistics collected from 1,500 deaths. He found that alcohol was an important factor in one-third of these, the principal cause in one-tenth of the cases, and a contributing cause in more than a fifth. Among the insane it was found as a cause of death in one-half of the cases. The speaker concluded by saying that alcoholism represented a real danger to society and that it was the duty of all persons interested in public health to combat it. The following speaker, Reynier, also dealt with this question, discussing alcoholism as a factor in pulmonary tuberculosis and tuberculosis in other situations, such as the joints, Pott's disease, ostitis, and fungous synovitis. In investigating the alcoholic history of a family, it was terrifying to see the number of instances of infantile tuberculosis due to this cause. He expressed the hope that the resolutions on the alcohol question that had on several occasions been adopted by the Académie would receive more consideration from the authorities.

In the Société de Chirurgie Tuffier showed some examples of radiographs with plastic effect made by Aubourg. In preparing these a second picture, giving an image with the appearance of relief, was obtained from the ordinary radiograph, and in this way it was possible to study details of the structure of the bones and soft parts that were not ordinarily discernible.

Picqué described an interesting case of successful operation for a gunshot wound of the ear. While the older surgeons always advised against intervention in dealing with bullets in the internal ear, at present the indication was to operate in every case. The injured petrous bone was exposed to infection which might involve not only the cavities of the ear itself, but also the meninges and the brain. He discussed the various operative measures that came in question, and expressed the opinion that the posterior route was preferable to the anterior one in removing projectiles imbedded in the petrous bone. This paper was followed by an animated discussion, in the course of which Prof. Berger spoke of the value of the Trouvé electric probe in locating small projectiles. With this instrument it was possible to determine the depth from the surface, the direction, the size, etc., of the foreign body and its removal was greatly simplified. Sieur considered that the extraction of the bullet itself was not a sufficient reason for forcing the hand of the surgeon, for its discovery was frequently difficult and involved danger to the facial nerve and carotid artery. He was of the opinion that the retroauricular operation was the only permissible one. Sebileau believed that there were important reasons for immediate operation in such injuries. It was advisable to act at once in order to diminish the risk of later complications through disease of the labyrinth, etc., and also to avoid suppuration from the injured district. He preferred the retroauricular operation. The antrum should be opened widely in such a manner as to transform all the cells of the ear into a single cavity and afford room for searching for the projectile no matter where situated and also to secure subsequent drainage without danger of retention. Loison thought that the best method of determining the position of the projectile in the bony structures of the ear was to search for it with a metallic needle under radioscopic control. Reynier was in favor of prompt intervention in injuries of this type and thought that it was preferable to follow the track of the bullet in attempting its extraction. Schwartz also was of the opinion that the route of access to the projectile would vary in every case. In one instance he had been able to remove through a simple preauricular incision, involving only the skin and the temporal muscles, a ball that had entered the squamous portion of the temporal bone.

In connection with this discussion the subject of postoperative parotitis came up. Morestin described a case of this complication following a vaginal section performed on the preceding day for a pelvic abscess. The parotitis was treated by pressure on the gland by means of which the pus was evacuated through Steno's duct. This procedure carried out two or three times a day effected complete cure in about ten days. Legueu discussed the conditions under which the complication occurred; he thought that the parotitis was always of canalicular origin and that its principal cause was obstruction to the flow of secretion. This might be due to the action of the chloroform, the liquid diet, or the loss of water of the body as a whole. The conclusion to be drawn was that in order to prevent and treat the condition, the mouth should be disinfected, the gland should be massaged, and a sufficient amount of water should be supplied by infusion. The parotid secretion should be encouraged by mastication, if necessary of a sterilized bit of rubber, and solid food should be given as early as possible. Picqué had found that the postoperative parotitis usually occurred in infected or cachectic patients, and was due both to increased virulence of the buccal bacteria and to chemical changes in the saliva. In mild cases simple expression of the gland might effect a cure, but if suppuration or gangrene occurred early incision was indicated. Reynier held that the best treatment was massage with rigid buccal antisepsis. Loison had seen several severe cases in which multiple incision was required for the evacuation of the suppurating foci. Some of the patients died and the autopsy showed that the entire gland was infiltrated. Potherat said that such cases of parotitis were due to the general condition of the body. Concerning the treatment local applications and massage of the gland might be tried early, but as soon as there were signs of pus formation the only surgical method was to open the suppurating area.

The immediate results of ligation of the common carotid artery were also discussed. Lejars, who reported a case in which this artery was ligated for the removal of an aneurysm and in which death occurred, thought that the operation was a very serious one; it subjected the patient to certain possibilities, such as sudden death, or cerebral softening, that should be emphasized. Guinard thought that the dangers attending ligation of the common carotid artery were largely due to inadequacy of the anastomoses uniting the carotid systems of the two sides. At the moment of tightening the ligature about the artery there was a sudden interruption of the blood flow to the corresponding hemisphere of the brain. The operation should, therefore, never be done when the anastomotic branches had been damaged through traumatism or a previous surgical operation. Faure had ligated the common carotid ten times, and three of the patients had succumbed to prompt cerebral lesions. Accordingly, he now never performed the operation without apprehension. Quite recently a patient whose external and internal carotids he was about to tie had become hemiplegic on the operating table while the choloroform was being administered.

The term of Prof. Debove as dean of the Faculté de Médecine de Paris having expired and as he was unwilling to serve again the members of the faculty at a meeting held on November 21 nominated Prof. Landouzy for the office and he was almost unanimously elected.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 16, 1908.

The Clinical Importance of the Uneven Distribution of Hydrochloric Acid in the Gastric Contents.—A. E. Taussig and W. H. Rush comment on the lack of homogeneity of the gastric contents and have made a series of investigations on a group of patients, comprising cases of gastroptosis, neurasthenia, hyperacidity, pyloric spasm, achylia, mucous colitis, and chronic gastritis. They note the following conclusions: (1) When the stomach contents are expressed and aspirated in the usual manner as completely as possible, the patient sitting erect, only a comparatively small portion of the gastric contents can be obtained. (2) After any of the usual test-meals the acidity of the portion so obtained cannot be assumed to represent the acidity of the stomach contents as a whole. (3) If, after this portion of the stomach contents has been removed, the patient is made to lie down, it is usually possible, by means of aspiration, inflation, and the like, to obtain a further considerable quantity of stomach contents. This second portion often differs considerably in its acidity from the first portion. (4) Even after this second portion has been removed, the stomach still contains considerable unobtainable residue. The amount of this is apparently independent of the total quantity of gastric contents, and probably varies from one to three ounces. (5) The quantitative determination of the acidity of the gastric contents is thus seen to be subject to a grave source of error. This will be diminished if the contents obtainable in the prone position are also examined. It will be further lessened if the acidity of the two portions does not differ very widely, since then we may assume that the acidity of the unobtainable residue will itself not be very different. (6) It follows that, in practice, trustworthy results can be obtained only if the following precautions are observed: the stomach contents must be obtained separately in the erect and in the prone posture; the acidity of each portion must be determined and diagnostic conclusions, based upon the

degree of acidity, can be drawn only if the two acidities correspond fairly well, or if the total quantity of gastric contents obtained is so great that the unknown acidity of the unobtainable residue may be neglected. (7) Indeed, the entire concept of degree of acidity of the stomach contents seems not to correspond to anything real. Different portions of the stomach contents have different degrees of acidity. We may speak of the acidity of the contents at the fundus or near the pylorus, or, at most, of the average acidity of the total contents. It is this last that clinicians have attempted to determine, with what scanty success it has been the object of this paper to show.

New York Medical Journal, January 18, 1908.

Rhythmical Alterations in the Width of the Palpebral Fissure of Both Eyes Probably Produced by Spasm of the Levator Palpebræ Muscles.—C. A. Veasey refers to a similar case recently reputed by Posey and reports the personal case of a boy seven and a half years old who had always been nervous and very quick in his movements. For some months there had been observed an upward movement of each upper lid, occurring about twenty times in a minute and sufficiently great in extent to uncover the cornea and expose the sclera above. The movements were much more marked at times than at others, but were especially bad when something occurred to make the child nervous. The movements were rhythmical in character and were in all probability due to contraction of the levator muscles. The frontalis was not involved nor were there any changes in the pupils. Occasionally there were slight contractions of the alæ of the nose. Adenoids had been removed some months before, and the patient had also been circumcised. Glasses gave considerable relief, but the movements did not entirely cease until the patient was brought under the influence of arsenic. The author thinks that in his case the conditions were largely due to the eye conditions, being a manifestation of habit chorea.

The Psychic Treatment of Nervous Diseases from a Practical Standpoint.—C. A. Penrose notes the recent efforts made in some cities to introduce the methods of psychical treatment on a rational basis and to do away with the claptrap of so-called Christian Science. Contrary to the general belief of the laity, psychic treatment has not been neglected by the profession, but under modern conditions of living there is an increase of a certain degenerate type of mind fast spreading over the country. There is a large group of persons who are "mind weary," a condition which is a sort of reaction against the strain and turmoil, the ambition and excessive nerve restlessness of the present day. This class of persons are easily imposed upon. They do not care to think or investigate. They will accept almost any statement rather than take the trouble to deny it or argue it down. They thus become the prey of the imposter. It seems to the author a dangerous procedure to turn even the purely functional neuroses over to untrained men for treatment, even if they can give efficient mental treatment, owing to the impossibility to determine, often, what is organic and what is functional, or how dependent the mental state is on the badly developed or poorly nourished body. The paper is a plea for scientific study along the lines of physical needs and physical development and the scientific treatment of the same.

Prevention of the Nervous and Mental Disorders Incident to School Life.—The main points of the paper by J. H. Pleasants are thus summarized: (1) Children under eight, or, better, ten, should not attend school if country life and parental attention are possible. (2) City children between five and eight should be placed in kindergartens situated in parks or suburbs, where nature study and systematized play and light ungraded objective work in the open air can be carried out. (3) Schools for older children should be gradually removed to the parks or suburbs and equipped with playgrounds and physical directors. (4) Overstudy and competition among the more ambitious pupils should be prevented, and the leveling of the child to the grade avoided. (5) The hygienic condition of the schools should be maintained at the highest efficiency, both for the effect upon the child's health and as educational object lessons. (6) Physical defects (usually remediable) at the basis of many mental and nervous disorders are principally: (a) Malnutrition, to be combated at present largely by the educational influence of the school nurse; (b) eyestrain, if of advanced grade, or if productive of symptoms, to be corrected, and the wearing of glasses made compulsory; (c) adenoids and enlarged tonsils to be removed; in neglected cases the health department should have power to enforce removal; (d) deafness to be prevented by the better control of epidemics and removal of adenoids. (7) Epileptics to be placed in separate schools, or, better, in rural colonies. (8) The condition of many so-called mental deficients improved or cured by correction of physical defects. (9) Truancy and incorrigibility in many cases due to the handicap upon mental work of physical defects. (10) Education of idiots, imbeciles, and the feeble minded, as far as they are capable, in special institutions maintained by the State. (11) The education of children slightly below par mentally in small ungraded classes in the public schools. (12) Substitution of a broad medical supervision over education by a board of physicians and educators rather than mere medical inspection.

Varicose Veins; Their Treatment by Multiple Short Incisions.—C. F. Kivlin discusses the occurrence of varicose veins, their complications, symptoms, diagnosis and the usual methods of mechanical and surgical treatment. He then makes a plea for the method of multiple short incisions, claiming that it does not take so long to do the operation as it does with other operations where the vein is removed, that it is not so apt to become infected, and that if one incision becomes infected it can be dealt with more readily and without infecting the others. There is no scar tissue at the knee joint, thereby causing no pain nor limping while walking. There is practically no blood lost, especially none from the main vein; what little blood is lost is from the skin. Convalescence is much shorter, a week to ten days' time being sufficient for the patients to stay in bed; they should be up to work by the end of two weeks. But if it is a case where it was urgent for them to be back to business, three to five days would be sufficient to stay in the hospital before returning to light work. The convalescence is painless and uneventful. The style of closure is either interrupted or continuous. He believes, however, that the continuous silk suture is the best closure.

Journal of the American Medical Association, January 18, 1908.

Arteriosclerosis.—G. L. Walton and W. E. Paul conclude as follows: While arteriosclerosis is productive of apoplectiform attacks and vertigo, and plays a part in the causation of loss of memory as well as other failures of power in involution, it does not produce headache except as the immediate result of apoplectiform attacks. A number of the patients stated that the headaches from which they had formerly suffered had lessened or disappeared of late years. The comparative immunity from headache was the more notable in view of the fact that signs of renal degeneration were present in thirty-six per cent. of the cases and the blood pressure averaged high. The apoplectiform or claudication attacks are, moreover, not necessarily indicative of serious organic disease, as a case which they report shows, and they are inclined to credit them to cerebral fatigue with temporary suspension of function rather than to actual changes in the vessels. Arteriosclerosis naturally appears in a certain proportion of elderly neurasthenics, but their observations fail to establish its causative influence, and they feel that further investigation of this point is desirable. Renal degeneration is a prominent factor in the cardiac enlargement often present in cases of arteriosclerosis. Arteriosclerosis without cardiac enlargement or renal degeneration is only exceptionally accompanied with a very high blood pressure. If either cardiac enlargement or renal degeneration exists, moderately high blood pressure is the rule; if both are present, very high blood pressure.

Upper Respiratory Obstruction and Oral Deformity.—F. A. Faught reviews the dental literature of the subject, in which he finds a tone of uncertainty and some surprising contradictions of opinion which have led him to formulate a series of questions which were submitted by him to a number of authorities whose replies are analyzed and commented on. The answers bearing on the question of the lateral expansion operation and its effects on upper respiratory obstruction are particularly discussed. The author's general conclusions are that the data are still lacking to put the question of the interrelationships of dental and maxillary deformities and respiratory disturbances on a definite basis, but he believes that in the vast majority of cases dental irregularity is associated with, if not dependent on, upper respiratory obstruction—hence the need of dentists, and particularly orthodontists, being familiar with the forms of respiratory obstruction, their symptoms, diagnosis, and treatment. There should be a careful study of the changes caused by corrective procedures and more accurate methods of observing and recording them. The treatment of dental irregu-

larity should be preceded by examination and treatment of conditions in the nasal chambers and pharynx. The result of the ordinary expansion operation as regards nasal conditions is more dependent on vital tissue in the nasal region than on mere mechanical movement. Operations designed mechanically to increase the respiratory capacity of the nasal passage are practically valueless unless the intermaxillary suture is separated, as shown by the increase of space between the central incisors. It is impossible to relieve stenosis due to adenoids or septal irregularities by expansion methods; these should be attended to by the rhinologist before attempt is made to correct the dental defect. The stimulation of the vitality and renewed growth in the nasal chambers, together with the restoration of normal conditions in adjoining parts are the chief causes of improvement following expansion operations.

Subacute Polymyositis.—B. T. Burley reports three cases, two of them fatal. The infectious nature of the disease is suggested by some of the symptoms, the onset with malaise, the fever, and the often recurring splenic enlargement, and some reported cases even suggest contagion as well as infection. There is, however, no definite proof of either of these elements in its etiology. The pathological findings vary according to the stage of the disorder; the signs of inflammation, swelling, infiltration, transudation, and hemorrhage are seen early, and it is characteristic of the disease that certain muscular bundles and certain fibers of a bundle are unaffected by the process. Later there is a general tendency to degeneration of the muscular fibers and their change into connective tissue. The nerves have been found to be involved in some cases, but this does not appear to be a primary change. The amount of hemorrhage between the muscular bundles is variable; it may be very great, giving rise to the designation, polymyositis hæmorrhagica. The two affections likely to give trouble in the diagnosis are trichinosis and polyneuritis, though phlebitis, periostitis, rheumatism, and pyemic abscess sometimes resemble this condition. From trichinosis it is distinguishable by microscopical examination and by the characteristic eosinophilia of the latter disease. Leucocytosis is also more common in trichinosis and primary gastric and intestinal symptoms and involvement of the muscles of the eye and diaphragm are more characteristic of trichinosis. In polyneuritis there is tenderness along the nerves instead of over the muscles and anesthesias and parasthesias that are absent in polymyositis. The inflammatory edema involving both muscle and subcutaneous tissue and the muscular swelling followed by atrophy point to polymyositis. The reflexes and electric reactions may be mechanically affected in polymyositis, and polyneuritis may coexist. Syphilitic myositis is a rare affection that may be confused with polymyositis, but it is accompanied by evidences of specific infection, usually affects but a few muscles, and has not the splenic tumor nor the exanthem of polymyositis. The prognosis is not regarded as so unfavorable as formerly, since the recognition of the milder cases. General involvement of the muscles and cutaneous tissue with persistent fever make the prognosis graver. Myocardial involvement adds to the danger. The most serious single symptom is involvement of muscles of deglutition. Atrophy of some muscles is common after recovery from long-continued cases. There is no specific treatment. The cases reported, following the classification of Lorenz, would fall under the head of dermatomyositis, but on account of their characteristic insidious onset and slow course, and the general involvement of the muscular system, he prefers for them the title "subacute polymyositis."

Dementia Præcox.—S. E. Jelliffe defines the conception of dementia præcox, which he considers a fairly reasonable entity, as based on the following principal features: 1. The occurrence of the condition, for the most part, in the years about puberty, adolescence, and early manhood, *i.e.* between the ages of 18 and 28. 2. The gradual development of a psychasthenic state deepening into a sense of incapacity which is the beginning of a general process of mental deterioration. 3. Thus a gradual emotional deterioration becomes apparent. This may be an indifference, or emotional stupidity, or may be characterized, as Stransky has so well shown, as an incongruity between the content of ideas and their natural emotional sequence. This incongruity has been compared to an ataxia by Stransky, and there may be more complete dissociation between ideas and their usual emotional association. This emotional adjustment is one of the marked features. 4. Modifications in the so-called intellectual sphere are apparent, involving lucidity of consciousness and leading sometimes to complete confusion; variation in power of attention; some modification of the faculty of orientation, often not marked; delusion development, often on an hallucinatory basis; loss of perceptive power and the development of the sense of unreality, of inadequacy, ideas of influence, of reference, and compulsory ideation. 5. As a consequence of these and other reactions, there results a fairly constant and perhaps distinctive alteration in the character of the individual. Jelliffe believes that the structural defects that later permit the crumbling of the intellectual structure are detectable in many cases before the breaking down has begun. Among the more constant of the characteristic anomalies are affectations or eccentricities of manner; a tendency to seek out striking combinations, neologisms in speech, bizarreness in writing, in artistic production and inapproachability. The finally developed childish, foolish manner so frequently seen as an end product is also perhaps best considered here. 6. Finally, these patients show marked modifications in their general muscular reactions, both in the striped and unstriped muscles. Physical negativisms, stereotypies, affectations of posture and bearing, catalepsies, automatisms, and a host of sympathetic phenomena are here included. Jelliffe points out briefly the different characteristics of the different types, the cases of simple dementia or hebephrenic form, the catatonic and the paranoid groups, and goes at some detail into the psychology of the condition. Most of these patients, he says, are not hopeful cases, but some are worth working for, particularly in the predementia stage. When the diagnosis is patent the opportunities for repair have usually been neglected. He believes in training the eccentric and ego-centric children, who recruit this class of the insane, with special reference to their capacities, combining outdoor pursuits with education and utilizing the petty social conventions that lessen the opportunities for unregulated affective action.

Münchener medizinische Wochenschrift, January 7, 1908.

The Cutaneous Tuberculin Test.—Feer reports the results of the application of von Pirquet's tuberculin inoculation test in 344 children below the age of fifteen years. Of the number 19 per cent. gave a positive reaction, none of them being less than six months old, and only 7 per cent. of the positive cases occurring in children less than twelve months old. Fifty-seven per cent. of the number were between the ages of ten and fifteen years, the increasing proportion of positive results as the subjects increased in age being very strikingly shown. Of 25 cases clinically certain as tuberculosis, 24 gave a positive reaction, the exception being a thirteen month old infant with tuberculous peritonitis, the diagnosis being confirmed at autopsy. He considers that the cutaneous method has the same value as the hypodermic injection of tuberculin, while it possesses many evident advantages over the latter. In dealing with older children and adults many positive results are obtained from individuals ostensibly healthy, that is, having small inactive foci, and the reaction is therefore of little value with them and a negative outcome is of more importance. In young infants, however, the method increases in value the younger the child. The cutaneous inoculation is greatly to be preferred to the conjunctival application of the tuberculin owing to the serious risk of producing corneal ulceration and other complications.

Typhoid Bacilli Carriers in Insane Asylums.—Grimme says that the discovery of the fact that typhoid bacilli carriers are common among the inmates of asylums for the insane has added a new problem to the management of these institutions. It is not true, however, that the insane as such are more likely to be permanent hosts of typhoid organisms than other persons, but the apparent preponderance of this class is to be explained by the fact that it is only in insane asylums that systematic observations with this end in view have so far been carried out. The treatment of the bacilli-carrying inmates is difficult since their isolation, which is desirable from the standpoint of the institution, is entirely at variance with modern ideas on the treatment of the insane, and is likely to result to their serious detriment. Medical treatment directed to the condition has been found of little or no avail and the most promising outlook is that offered by the results obtained in several cases in which the gall bladder has been opened and cleansed. The author reports one more instance of this sort in which a cholecystectomy was done apparently with the result of effecting a complete cessation of the discharge of bacilli, and he commends the operative measures for consideration in cases of this type which are not unsuited for surgical intervention.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Second Annual Meeting, Held in Albany, January 27, 28, 29, and 30, 1908.

(Special Report to the MEDICAL RECORD)

Monday, January 27—First Day.

HOUSE OF DELEGATES.

THE PRESIDENT, DR. FREDERIC C. CURTIS, OF ALBANY, IN THE CHAIR.

AT the meeting of the House of Delegates, which was held in the Common Council Chamber, City Hall, at 8.30 P. M., the following reports were presented:

Report of the Secretary.—Dr. WISNER R. TOWNSEND presented this report. The membership January 21, 1907, was 5,857; during this year there were 102 deaths, 50 resignations, 7 removals, and 1 expulsion, leaving a membership of 5,697. The new and reinstated members January 21, 1907, to December 31, 1907, were 626, giving a membership at the latter date of 6,323. There were dropped for non-payment of dues, December 31, 1907, 343. The percentage of paid-up membership December 31, 1907, was 94.5 per cent. The membership January 15, 1908, was 6,154. No State society could show better results. The full benefit of the district branch organization to the profession had not yet been reached, because the system was new in this State and not thoroughly understood. There were but fifty-six unregistered physicians in the State, some retired and some in the employ of insurance companies. It would seem desirable that this society should be represented by delegates at the annual meetings of the societies adjoining it. The present plan of issuing credentials to those who apply did not always produce this result, and it was suggested that the President be requested to name delegates to such societies and also permit members who attend the meetings and desire credentials, to have them, as at present was the custom.

Report of the Committee of Legislation.—Dr. ARTHUR G. ROOT presented a brief summary of the legislation affecting medical interests introduced during the session of 1907. Sixty-four bills were introduced, of which number eighteen had become laws. Of these sixty-four, twenty-one were general medical bills; of these, fifteen died in committee, four became laws, and two did not receive the Governor's signature. Three of the sixty-four were bills referring to the gathering and sale of ice from polluted sources. All these died in committee. Eight of the sixty-four bills had to do with the health of factory children and working women and the general hygienic care of the working classes. Two died in committee, and six became laws. Of the seven having reference to tenement house legislation, five died in committee and two were signed by the Governor. Twenty-five related to pharmacy, the sale of drugs, poisons, etc.; of these eighteen died in committee and seven became laws.

Report of the Committee on Public Health.—Dr. JOHN L. HEFFRON said that the State Laboratory at Albany was now making the antitoxin for tetanus and a certain quantity of antitoxin for diphtheria, and said that the committee recommended that these laboratories be extended. The condition in the northern part of the State to-day, where an epidemic of smallpox was raging, was clearly due to a careless vaccination, which had been bred by a general, though mild, opposition of the people to the State law requiring general vaccination. Many useful lives and millions of dollars would be saved if a pure virus was procured and rigid enforcement of the law compelling the vaccination of every child entering school, etc. Tuberculosis still continued to head the list of causes of death. It had been estimated that seven-eighths of the deaths in this State were due to respiratory diseases, together with the diarrheal diseases of children. This awful record was certainly not necessary. They were now ready for a law making it a duty to report all cases of tuberculosis for the successful protection of the victims themselves and of their friends. The committee recommended that the society cooperate with the State Department of Health in the passing and administration of a law for the reporting and registration of all cases of tuberculosis in the State. The State Hospital for Incipient Tuberculosis at Ray Brook had done such good work that the extension of the plan was urged. They recommended the careful study of the plan of campaign carried out in Yonkers. Next to tuberculosis the most prevalent cause of death was pneumonia. The necessity of securing for the people pure water, pure ice, and pure food was emphasized.

Other Reports.—The Committee on Prize Essays reported that no essays had been presented during the past year. The Treasurer, Dr. Alexander Lambert, reported a surplus of $13,849.03 on December 31, 1907. The Counsel reported that there had never been a single dollar by way of verdict secured against any member of the State Society who had asked of the society and received malpractice defense. He reported that there had come to his knowledge two cases in the State, neither of which was defended by the Counsel; one resulted in a verdict of $25,000 against the physician and the other resulted in a verdict of $2,000. The special committee on meetings recommended semi-annual meetings to continue two days each.

Tuesday, January 28—Second Day.

SCIENTIFIC MEETING.

The meeting was called to order by the president in the Common Council Chamber, City Hall. The Rev. J. V. Moldenhower gave the invocation. The reception of delegates from other societies followed.

President's Address.—Dr. FREDERICK C. CURTIS of Albany delivered this address. He said that each annual meeting reflected the manifestation of thought and estimates of value in the varied phases of professional life. Every page in the world's history taught the value of organization. This Medical Society of the State of New York had one definite purpose in its organization over a century ago, viz., the association of all reputable physicians, and the exclusion of the unworthy. It had little use for trades union methods. The history of all the learned professions imperiously proved that no one profession ever became reputable or of extensive use to mankind unless under proper restraint, restraint of the body and its members. This year on the statute books was the medical practice law, the culmination of what the society had endeavored to effect for twenty-five years. The organization was wide open for the young men, and he hoped that all reputable practitioners in the State would be induced to come in. He would simply draw a line against the unworthy. His purpose was chiefly to indicate how admirably the society fitted the work by an ideal organization and composition. This involved upon it an obligation of service. He thought, however, that most medical men were inclined to forget their obligation to the public. People, as a rule, were apt to obstruct work for their safety rather than to help it. In many instances the Department of Health had been pushed aside for what might bring money into service. History bore witness of the material worth of sanitation. Diphtheria had been reduced to one-half in its mortality, and diarrhea and summer complaint of infants had been equally diminished. The infection in consumption had been recognized. The value of pure water and milk had been told. But all this had been a labor of love.

The average physician who was not directly connected with the work failed to give support to the work that he should, and Dr. Curtis told how he could give help in many ways. A subject peculiarly fitted for discussion by the organization was the alcohol question. There was a tremendous use of alcohol which filled hospitals, asylums, epileptic colonies, and prisons, telling of its destructiveness. In many States alcohol was now excluded, and he believed that the Medical Society of the State of New York should find some definite way to leadership against it. The importance of the educational life of the growing child was emphasized. The widespread existence of ophthalmia neonatorum showed the responsibility there was in the care of infants, and so long as it continued to be the leading cause of blindness, the society should take such steps as were necessary to see that this dire evil might be lessened. The society should know the obligations that lay upon it, and there should be shown a faithfulness in its attitude toward them.

Nihilism and Drugs.—Dr. Abraham Jacobi of New York delivered an address on this subject, and in a very facetious manner, causing much laughter and applause. A physician should be judged, he said, by the extent of his knowledge and not so much by his cures. So long as medicine was an art, it would never become a science. So long as the physician was successful, he would not be scientific. So long ago as 1860 Oliver Wendell Holmes said that if one threw out opium and a few other specifics, and threw the rest of the agents making up the pharmacopeia into the sea, it would be better for the people, but bad for the fishes. More harm than good had been done by medication, was what Sir Astley Cooper said. After all it was not of the slightest interest whether one-half or three-quarters of the lungs was hepatized; what the people really wanted was something to make them better. The year 1907 was disquieting because of tidings from Dr. Osler; the telegraph had reported that he had said to his students in London: "Be skeptical of the pharmacopeia; he was the best doctor who knew the worthlessness of medicines; study the man and the woman" This message, or a similar one, was sent out over the world. He was the *enfant terrible*, was what the *Evening Post* of New York said of Dr. Osler. What Dr. Osler probably and really meant was, first, be critical and frank; second, he was the best doctor who knew the worth of medicines; and third, study your fellow man and fellow women and learn how best you can serve them. Therapy meant service. Dr. Jacobi said he wished Dr. Osler had said that. We had been told that by combining medicines we might cloud observation; that that was what physicians had been doing so long, and that it was not right. It should be remembered, however, that they were treating disease and not men and women, and there were those who did not care to wait for the action of one drug given for the relief of one symptom to wear off before giving another for another symptom, when, by combining the two, the results wanted could be obtained in a shorter time than if they were administered separately. It was about as wise as restricting the physical treatment to one single method. Why prescribe one and proscribe the rest? Dr. Jacobi had much to say regarding the expectant treatment. In 1836 Dixon said that the tendency of all diseases was toward death Dr. Jacobi said that the expectant treatment had been the cause of many deaths; that often death resulted when proper treatment might have saved the patients. Typhoid fever, for instance, if left to itself, might prove fatal, and so might whooping cough, and many other diseases. The expectant treatment often was a compound of ignorance and indolence, often it was malpractice in cases which might have been saved by proper treatment. The expectant treatment was simply a sin of omission which frequently arose to the dignity of a crime. His meaning was illustrated by the citation of interesting cases. Expectancy meant loss of time and opportunity. In regard to drugs and their doses, the latter were dependent upon many factors, such as age, sex, locality of application, the amount of blood circulating in the vessels, the presence or absence of sepsis, etc. He spoke of a child with enteritis, one year old, who would take from 1/30 to 1/40 grain of opium. He said he had never seen a case of opium poisoning occur in his practice in such cases, and he believed the dangers accompanying the use of opium in young children had been much overestimated. He said that one grain a day of atropine given an adult would cause dilated pupils, dry throat, etc., while a child of four years could take as much as one-half a grain in enuresis with no such effect. He then referred to many agents and drugs which were of great value; many had been used for a long time, such as the poppy, mercury, quinine, male fern, etc. Seroorganotherapy had not come up to expectations. It was interesting to know that most of the bad and the good medicines came to us from Germany. In 1897 a South Carolina colleague had employed methylene blue in inoperable cancer, and Dr. Jacobi said he wished to acknowledge this doctor's claim of priority. With regard to the drug therapy of tuberculosis, for nearly twenty years he had used guaiacol in at least five thousand cases and he did not believe that any institution should leave out this agent in the treatment of this disease.

Clinical Observations on Vaccines.—Dr. Joshua M. Van Cott of Brooklyn reported ten cases in which opsonic therapy was employed, and said that in the majority of these cases the patients no doubt would have died had the vaccines not been administered. It was certainly worth while to pursue this further, and he hoped that the vaccines could be manufactured so that these patients could be carried through their diseases.

Report of Some Cases Treated by Vaccines.—Dr. Algernon T. Bristow of Brooklyn said that the organism had two ways of resistance; one, the specific action of the blood serum; second, phagocytosis. But it was more upon the latter that defense depended. Wright himself had confirmed the statement that vaccines were of no use when the organisms were found in the blood. At the same time it was our duty to conduct further investigations which might give more hopeful methods of treatment. He said that we should not be led astray by any failures or successes. What was wanted was evidence. He wished to report a few cases of interest. Among these was one case of streptococcic infection in which the organism was not found in the blood. In another a streptococcal form was found in the blood in a case of malignant endocarditis.

Case I.—This patient was a woman, fifty-eight years old, who, at intervals of one week, for three weeks, had rigors, chilliness, high temperature, and headaches. These symptoms would last one or two days and she would then apparently recover. Between her second and third attacks she went about her social duties. On March 11 tenderness was noted on the left side of the neck, and enlarged glands. This tenderness increased until she had positive pain. The temperature varied from 100° to 103°. Twenty-six days after the initial attack Dr. Bristow saw her. She then had a temperature of 102° and there was a circumscribed swelling in the submaxillary triangle, moderately painful on pressure. It was decided to wait awhile before

making an incision. There were 15,000 leucocytes and 78.8 per cent. polymorphonuclears. From March 17 to 21 the temperature was irregular, and ranged from 100° to 102°. The swelling became more diffused and extended towards the clavicle. The number of leucocytes diminished to 10,000 and the polymorphonuclears were 75 per cent. There was no fluctuation. The pain in the neck diminished. He again saw her on the 23d, when the tumefaction extended to the clavicle and operation was decided upon. Just before operation the blood count was 11,000 leucocytes and polymorphonuclears 83 per cent. Deep in the cervical fascia was an abscess cavity from which pus was evacuated and a tube introduced. At the time of operation the temperature was 100.4°. On the 26th the pulse became intermittent and cardiac stimulants were given. Pain appeared in the left leg, but there were no evidences of a phlebitis; there was tenderness over the left condyle. The second sound became accentuated, and there appeared a soft blowing murmur. On the 29th the patient seemed to be improving, but there was pain in the right knee, the right wrist, fingers of the right hand, and the right side of the shoulder joint. On the 28th she went into convulsions; after regaining consciousness she felt weak. Two organisms were found in the pus, one a streptococcus and another which resembled very closely the bacillus of diphtheria. Carbonate of guaiacol was administered. Dr. Potter was communicated with with the view of using the vaccines. The patient was very ill. They determined not to wait to obtain an organism from her, but to use a stock vaccine. On April 2 they gave five million. The next day the temperature was 104° and there occurred a second convulsive seizure. On April 10 ten million were given. The patient steadily improved from this time and soon regained her good health.

Case II.—This patient was twenty-one years old. The organism was found in the blood. She had rheumatic manifestation in childhood, and gave a history of rheumatism. With this diagnosis she came in. After three weeks treatment she became unconscious and her condition was very bad. Examination of the heart revealed a mitral murmur. She complained of intense headaches and contraction of the neck muscles. The joints were not swollen. There were no albumin, casts, or other abnormal ingredients in the urine. Antirheumatic remedies had been given. Six days after admission the left elbow became swollen. She did not improve. A blood culture revealed the presence of the *Streptococcus longus*. She received two or three doses of antistreptococcic serum, but without effect. They then determined to use the bacterial vaccines. On June 1 the patient again became unconscious and five million of the same culture as in the first case were injected into the thigh. On June 3 ten million more were injected and later five million more. The patient went on then to an uncomplicated recovery.

Case III.—This patient was a trained nurse who, from August, 1905, to June, 1907, was troubled by crops of furuncles. They were all over the body. The *Streptococcus pyogenes aureus* was isolated. The bacterial vaccines were administered in June, 1907. She remained free of furuncles until the following October, when she had a single boil which cleared up after the injection of more vaccines.

Case IV.—This was a boy, eighteen years old, who had an arthritis of the right knee of gonorrheal origin. A small incision had been made and the joint washed out with saline solution. The joint was much swollen and painful, and the case seemed very unpromising. A dose of seventy-five million was injected and one week later the case suddenly improved.

Dr. Bristow said that no definite conclusions could be drawn from such a small number of cases, but the results appeared to be encouraging.

Description of Wright's Methods.—Dr. William H. Woglom of Brooklyn told of the technique used to determine the opsonic index, illustrating his remarks by drawings. In order to make this estimation, three elements had to be considered: the serum, the washed leucocytes, and the organism against which they desired to obtain the index. The serum he divided into two classes: first, of the patient in question, and, second, the serum of a healthy individual or individuals to serve as a standard. He then told how one obtained the washed leucocytes, using a tube, a solution of sodium citrate, and blood, and centrifuging until the leucocytes were at the bottom of the tube. This was repeated and finally the fluid was pipetted off. The serum was collected in glass capsules. He told then of how the bacterial emulsion was made. The thickness of this emulsion must be judged of by experience. Having these three elements one then could go on with the estimation of the opsonic index.

The Value of the Opsonic Index in Controlling the Use of Vaccines.—Dr. William H. Park of New York said that Wright deserved credit for two things in particular in the opsonic work: first, he induced physicians to make more frequent use of opsonins and showed possibilities not before dreamed of. He thought it would take years before we knew of how much value the opsonic index was as an indication in the treatment of disease. Wright was an optimist. After Wright had left this country he left here one of his trained assistants to show his methods and to follow out cases that were treated. At that time they were beginning their laboratory experiments and knew but little about the technique. They found that when they made the indices with the aid of this assistant he would have a high and they a low index. But it should be remembered that this assistant was working in a strange country and in a strange laboratory. For a long time many of them worked along with different ideas as to accuracy. Dr. Park then spoke of a few of the difficulties encountered, such as individual peculiarities. Different individuals in good condition gave from 10 to 15 per cent. or more variations. Therefore, the same person must count the control blood as well as the blood to be tested. Another greater difficulty was the irregularity with which the leucocytes took up the bacilli. Another difficulty was the technique; one must have proper cultures to get the opsonic index. Different cultures would give wide variations. To get a culture from an individual was no easy matter. Another difficulty was in the measurement not being absolutely true. Eating, drinking, taking cold, etc., raised or lowered the index. There was great irregularity in disease, a very marked variation. In tuberculosis it might be one-half under or one over normal to-day, and one over to-morrow. One should not forget that there were other protective substances in the blood. To show the extent of variations in the opsonic index samples of blood were sent to ten of the best laboratories in the East, in Boston, Baltimore, Albany, and New York City. Reports from all these laboratories, ten in number, showed marked variations. Last summer Dr. Potter and Dr. Park visited Sir A. E. Wright in London and they were struck by his enthusiasm and the results obtained by him. Many of the patients no doubt did better than if they had not received the vaccines. Yet the opsonic index was not absolutely necessary in controlling the use of the vaccines.

Dr. Delancey Rochester of Buffalo and Dr. Boswell of Rochester discussed the papers.

Dr. Park and Dr. Van Cott closed the discussion.

The Importance of Examining Individuals Exposed to Tuberculosis.—Dr. JOHN H. PRYOR of Buffalo read this paper. He said there were 14,000 deaths each year from tuberculosis, one-tenth to one-eleventh of the total number of deaths, and that from year to year there were slight variations; although the death rate might diminish, the actual morbidity from this disease was but slightly decreased. The influence of special measures for limiting its spread was a point for controversy. He had asked 100 patients if they had ever received proper instruction as to what should be done in the way of prevention of the infection of others, etc., and they all had answered no. This did not apply to New York City. There were now about 50,000 on their march to the grave in order to keep up the annual death rate from tuberculosis at 14,000 deaths. Undoubtedly registration was the first step in the campaign. But the majority of the cases reported were the advanced ones and had been dangerous for a long time. The chances of infection, however, had been relatively reduced. The rooms or house might be disinfected after a death from this disease. The whole system, as it existed to-day, was a diplomatic game between the doctors and the health authorities. Dr. Pryor advised State control and more uniformity in execution and obedience. Also an adequate knowledge on the part of the health authorities before appointment; they should be specially trained. Again there should be the introduction of some scheme for the detection of tuberculosis at the earliest possible moment when lives might be saved. No consumptive should be allowed to reach a stage where he could communicate the disease to another without having been properly instructed. The class of cases they were looking for was the one that had been exposed to infection. The detection of the early cases made prevention possible. One consumptive should lead one to another. The principal places to search were the houses and the workshops. In examining suspected cases success depended upon recognizing the disease; a bare chest examination should always be inisted upon. Those exposed to infection should be kept under observation for a long time. The second victim in a home was not usually detected until nearly one year after a death had occurred there. An effort should be made to discern evidences of the disease before symptoms appeared. Very often it was the occurrence of hemoptysis that sent the patient to the physician. Exposed individuals should be instructed as to what symptoms might appear. Some families were very susceptible, and he had seen one family in which eleven of thirteen died of pulmonary tuberculosis, the father and mother having enjoyed good health. He called attention to the three groups that should be recognized in children, the glandular, the tracheobronchial, and the pulmonary. The instructions should include the question, have others in the house been examined? It was a strange but true thing that the average practitioner was not able to recognize the disease early; he had not been taught how to diagnose in the earliest stages that most fatal of diseases, tuberculosis. Truly incipient tuberculosis had been revealed by examining those known to have been exposed by contact with advanced cases, and physical signs presented before the patients complained of subjective symptoms. The invasion was slow and repeated examinations might be necessary. The physician's duty was not fulfilled if those exposed to tuberculosis were neglected. There was false dependence upon the appearance of the bacilli. He gave illustrative cases and reported an endemic outbreak of pulmonary tuberculosis showing remarkable evidences of communicability. There were nineteen nurses and of these nine were found to be the subjects of pulmonary tuberculosis. Months would probably elapse before fuller information would be known.

Dr. GOODALL and Dr. ROCHESTER of Buffalo discussed the paper.

Dr. PRYOR closed the discussion.

The Treatment and Prognosis of Suppurative Cystitis.—Dr. VICTOR C. PEDERSEN of New York read this paper. Because of the time allowed him, he said he would consider only chronic cystitis. Chronic inflammations depended upon the character of the cause and the degree of the effect. If the cause was removed a total recovery might take place if the membrane had not been deeply damaged. The cystoscope would reveal the extent of the impaired membrane. In chronic cystitis many of the causes might be removed by dividing strictures, or dilating them, calculi might be removed from the bladder, hypertrophy of the prostate reduced, or the gland removed, etc. Cases of chronic cystitis could not be cured when associated with disease of the spinal cord, or injuries there, which resulted in a trophic cystitis; neither could tuberculous or cancerous cystitis be cured. The measures adopted were local and constitutional. Good hygienic surroundings, exercise, sleep, diet, drinks, stimulants, hydrochloric acid and pepsin, or pancreatin, were all of value. The bowels required washing. Turkish baths were good. When there was any cachexia or diathesis, it should be corrected. All diseases, especially of the heart, should be managed. When the cystitis was practically well change of climate should not be forgotten. Digestive fatigue, nervous fatigue, physical fatigue, and other fatigues should be guarded against. The local effect of the constitutional treatment was the same for chronic as for acute cystitis. He favored diluting, acidifying and antisepticizing the urine with water and medication. If there were no casts in the urine urotopin could be used with benefit. Sandalwood, copaiba, and oil of gaultheria, alone or combined, was of value. All bladder stimulants were to be avoided. Irrigations, instillations, and drainage by catheter, or perineal or suprapubic section had their place. Irrigating the bladder aimed at aiding nature in eliminating the mucus, pus, and debris; it combated infection and stimulated and healed the inflamed mucosa. Forcible distention of the bladder should not be done. The use of a hand syringe was recommended by which the pressure could be more easily determined. Normal saline solution, sodium carbonate solutions, or even sterile water irrigations might be used until the fluid that appeared returned clear as inspected in the test glass. The posture of the patient should be such as to get a free outflow of urine. The temperature of the fluid used might be raised with advantage. The amount injected should be measured. No pain should be given the patient. A bladder with a large amount of residual urine might hold from eight to ten ounces of fluid without distention. One should always run in just enough to unfold the crevices in the bladder. The irrigation combated decomposition and fermentation. In chronic cystitis the strength of the solution should be increased gradually, and a small amount of the solution should be left in, about one-quarter or one-half the usual capacity. These irrigations also stimulated and healed the diseased mucosa. The repetition of the irrigations depended upon the return of the symptoms. One irrigation a day usually sufficed, and then the intervals should be increased to two a week or every third day. If the combined results of local and constitutional measures were of no avail, then the operative work was to be considered. He emphasized the importance of the cystoscopic examination in all cases before giving a prognosis.

The Consequences of the Pathological Changes in Appendical Peritonitis.—Dr. E. MACD. STANTON of

Schenectady said that in appendical peritonitis one had to do with a complex sequence of changes in which the essential characteristics of the pathological picture varied from day to day. The essential features of this sequence of pathological findings were described as observed in a large series of operative cases studied with special reference to the duration of the disease. The sequence of changes was shown under certain conditions to be uniform and to have important bearing upon formulation of proper plans of treatment. One hundred and sixty-two acute cases and 131 interval and chronic cases were observed in Chicago, 41 cases were observed in Schenectady, while 485 cases were observed in the Albany Hospital, making 819 in all which were studied with reference to the pathological changes. He closed his paper by stating that the claim of those who advocated conservative treatment in appendicitis was founded upon a more definite pathological basis than was generally recognized by the profession at large.

Dr. Ochsner of Chicago said that the observations of Dr. Stanton were so accurate and complete that he was sure that from now on his paper would stand as a basis for professional opinion in regard to the pathology of acute appendicitis. He said that it was known to most of those present that eight years ago he brought this out and was looked upon as a heretic, the proposition being that the distribution of the infection and consequent mortality in acute appendicitis depended not so much upon the disease itself as they did upon the disturbance caused by the peristaltic action of the small intestines. He had made the observation that in acute appendicitis in which the infection had already extended beyond the appendix itself, it was possible to limit the distribution and cause it to become localized and circumscribed provided the peristaltic action was inhibited. He advised removing from the stomach anything which might cause peristalsis and keeping the stomach absolutely empty. If regurgitation occurred from the intestines, wash out the stomach. He found too that when patients were examined once a day they had one exacerbation; if twice a day, two, etc. If no examination, no exacerbation. He believed that the claim to superiority of this form of treatment in cases of acute perforating or gangrenous appendicitis in which the infection had already extended beyond the appendix, had been conclusively demonstrated.

Dr. Willis G. Macdonald of Albany said he did not agree with the conclusions of the two gentlemen.

Dr. John C. Monro of Boston commended the paper read very highly and in support of the claims, said that similar pathological changes had been identified in other parts of the body; for instance, in osteomyelitis. The work of Dr. Stanton was placed on a solid and scientific basis. The treatment as advocated by Dr. Oschner he had used.

Dr. Skinner of Geneva said that the non-operative treatment of appendicitis was in accordance with his own views.

Dr. Lake of Towanda recalled his own experience of thirty years ago when he began to follow the teachings of Dr. Alonzo Clark. In those days appendicitis was unknown and yet the mortality was low.

Dr. L. Duncan Bulkley of New York said that fifty years ago he had what was known as typhlitis, but which he later knew to be appendicitis. He was treated by Dr. Alonzo Clark and was kept on opium for six weeks, taking as high as two drams of laudanum every two hours. Under that treatment the infection was localized and at last there occurred a sudden gush of pus and detritus from the bladder, the abscess having ruptured into it.

Dr. Vander Veer of Albany said that just forty-two years ago Dr. Alonzo Clark had stood in a building that occupied the same spot as the present one and told of his treatment. To-day Dr. Ochsner told what was practically the same.

Dr. Stranahan of Rome bore testimony to the good effects of following out the treatment advised by Dr. Ochsner. He had treated 120 cases and with no mortality.

Dr. Stanton closed the discussion.

Diffuse Peritonitis in Women.—Dr. Ellice McDonald of New York City reported fifty cases, with autopsies, of diffuse peritonitis in women. Forty-one cases were studied bacteriologically. The various bacterial causes of diffuse peritonitis were discussed, and the peculiar phases of diffuse peritonitis from pelvic causes and from association with pregnancy, as essential to women, were considered. Suggestions as to treatment were made. Of these fifty cases infection was the result of extension from an ulcer of the bowel in 42 per cent.; from appendicitis in 4 per cent.; following a perforated gastric ulcer in 2 per cent.; following appendicitis in 16 per cent. Apart from pregnancy, pelvic conditions gave rise to 26 per cent. The causes associated with pregnancy caused 30 per cent. of the cases of diffuse peritonitis. Among the infections were the following: The streptococci in 18 cases; the colon in 13; the *Staphylococcus aureus* in 6; the pyocyaneus in 2; the gonococcus in 3; the pneumococcus in 3; encapsulatus aërogenes in 1; tuberculosis in 4 cases. This showed that there was a small proportion of cases in women of diffuse peritonitis due to appendicitis as compared with the high percentage in men.

Exhibition of Bier's Congestive Hyperemia Apparatus.—Dr. James N. Vander Veer of Albany showed the various appliances used in this method of treatment, including Dr. Rudolf Klapp's orthopedic treatment for the relief of ankylosis of the extremities. He also presented a patient with an extensive phlegmon of the neck.

SECTION ON PUBLIC HEALTH.

Tuberculosis in Children.—Dr. Charles G. Kerley of New York read this paper. He said that two features relating to tuberculosis in children had impressed him strongly in out-patient, hospital, and private work. First, the marked resistance which children showed to tuberculous infection, particularly after the fourth year; and, second, the readily traceable source of the infection in a great many cases. He referred to the two chief avenues of entrance into the body, namely, the respiratory and the digestive tracts. In a review of the literature which had appeared during the past few years, one was impressed most by the contradictory opinions expressed as to these avenues of infection. Clinicians, as a rule, favored the respiratory tract as the most important avenue of infection, while many bacteriological and laboratory workers believed that infection through the digestive system, particularly by means of infected milk, was the most frequent one. In the records of a great many cases of tuberculosis in children which had come under his observation, he had been able to trace apparent direct infection by means of inspiration; and the intimate association of the tuberculous child with a tuberculous adult was the rule and not the exception. Dr. Harlow Brooks had recently made some very instructive observations relating to tuberculous infection in monkeys at the New York Zoological Gardens. In these experiments he believed he had shown beyond question by respiratory inoculations that the infection among these animals is transmitted by the respiratory tract, and when measures obviating this means were taken no new cases arose. Not one case had appeared in which it seemed possible that the infection had taken place through the digestive tract. These experiments and observations bore very directly on the question of the route of infection in children, since the type of disease seen in the monkeys and even the organism present were apparently identical with those in children. With these monkeys we knew that the food could not have been infected,

since animals not subjected to respiratory infection in no case developed the disease. Dr. Kerley said that the fact that inspiration of tubercle bacilli was by far the most frequent cause of tuberculosis was further shown by the location and character of the lesion, as proven by autopsy records. In his own cases bronchial gland and lung involvement were present, showing signs that here was the original site of the infection in 34 out of 35 autopsies; and according to Northrup, the intestine was primarily involved in less than two per cent. Northrup was further quoted as authority for the statement that among thirteen children dying from different acute diseases, such as scarlet fever, pneumonia, etc., tuberculous nodules were found in the bronchial glands without tuberculosis elsewhere. Dr. Kerley believed that while infection from milk was possible, it was certainly very infrequent. In regard to infection by means of milk, Vallée, Ravenell, and others introducing the bacillus into the stomach through a tube claimed to have proved that in animals the tubercle bacillus could pass through the intestinal mucosa to the bronchial lymph nodes, and then produce the first macroscopical evidence of the infection. That this might occur in the human remained unproven. He quoted Behring as authority for the claim that practically all tuberculosis infections in man had a bovine origin, and Behring had even gone so far as to announce that not a single case of human infection had been proved. Behring held that the bovine tubercle bacillus was more virulent for man than the human tubercle bacillus. The speaker held, however, that in spite of views to the contrary, up to the present time there was less than thirty proven cases of bovine tuberculosis in man, although a recent case had been reported by Albert Hess in the January *Archives of Pediatrics*. In refutation of Behring's statement the doctor quoted Speck in the *Zeitschrift für Hygiene*, in which he stated that in an investigation of the cases in sanatoria for the tuberculous 73 per cent. of the patients had been breast-fed and 27 per cent. had received cow's milk. Carter had stated in the MEDICAL RECORD that the mortality from tuberculosis in Havana was 21 per cent., and that raw cow's milk was never used there. Heyman had asserted in the *Zeitschrift für Hygiene* that in Greenland infants were almost exclusively breast fed, yet tuberculosis was so prevalent that it was easier to name those who were free from than those who had it. Shiga claimed that bovine tuberculosis was unknown until thirty years ago, but that the human disease had been widely disseminated in Japan for centuries in spite of the fact that up to a few decades ago children, for religious reasons, had been nursed or wet-nursed only. The speaker's opinion was that the use of milk added but little to the mortality from tuberculosis.

What the Rigid Inspection of Milk Is Doing for New York City.—WILLIAM E. BURTON of New York, in charge of Dairy Inspection, Department of Health, read this paper. He said the milk supply of New York City was obtained from portions of Vermont, Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania, it being brought into the city over ten different railroads. The nearest point from which milk was shipped was 48 miles, and the farthest point 415 miles distant. Trains arrived in New York between 9:30 P.M. and midnight. Milk intended for sale in grocery and dairy stores was removed from the station in the early morning and delivered immediately throughout the city; bottled milk was hauled to distributing stations in large wagons. New York City, with its population of 4 1-2 millions, used about 1 3-4 million quarts daily. One-third was shipped in bottles and an additional 15 per cent. to 20 per cent. was bottled in the city, which made the total delivered to customers in bottles about 50 per cent. Prior to 1904 the efforts of the milk inspectors had been directed almost entirely towards procuring a supply of milk which was chemically pure. Inspections had been made at times of local producers, but no systematic method was followed. In the fall of 1904 two inspectors were detailed to inspect all places where milk was handled and to report all abuses found. On June 1, 1906, the systematic work of dairy inspection had been commenced, and a corps of inspectors for country work had been created. Regulations were adopted by the Board of Health covering care of cows, care of stable, water supply, milkers, and utensils. Cattle must be kept clean, long hairs likely to shed or drop dirt during milking process must be clipped; all cattle must be examined by a veterinarian and the report filed with the department. Stables must be well lighted and cleaned; floors tight and properly drained; manure to be removed daily; walls constructed so as to prevent dust and dirt falling to the floor or into the milk; whitewashing once a year was required; pure water for washing utensils was insisted upon; the milk house was to be separated from the stable and dwelling house. Regulations requiring straining and protection from dust and dirt were insisted upon. No farmer was allowed in any manner to adulterate milk or to furnish the New York market any milk which had been drawn from diseased cows. If conditions were unsatisfactory the dairyman was given reasonable time to make necessary improvements; if bad, the time was shortened. If no improvement was made the product of that dairy was refused entrance to the New York market. On March 13, 1907, resolutions had been adopted by the Board of Health requiring creameries to furnish to the department a report stating the existence or non-existence of typhoid fever, tuberculosis, scarlet fever, diphtheria, dysentery, or any other infectious disease in the households of persons employed in collecting or handling its milk. Considerable opposition had been met and it was questionable whether it could be thoroughly enforced without a corps of medical inspectors to control this branch of the work.

Can Tuberculosis Be Eliminated from Cattle?—Dr. VERANUS A. MOORE of Cornell University read this paper. Bovine tuberculosis was a widespread disease. Its extent and rapid increase in various countries had during recent years caused some alarm, both because of its effect in reducing the general food supply and its menace to human life. Its increase in swine and cattle had caused much concern among the large packers and already there were districts from which pork and beef animals were not, because of its prevalence, willingly purchased. As bovine tuberculosis was a specific infectious disease, Professor Moore said the methods for its elimination were based on the recognized principles of segregating the diseased individuals and the protection of the uninfected. The question of what use could be made of the infected animals was an important economic one in itself, but the first problem was their detection and removal from the herds. The speaker mentioned three ways of utilizing the infected animals, namely: (1) Total destruction, except for fertilizer purposes; (2) slaughter for beef under proper inspection; and (3) the separation of infected individuals that appeared to be well and keeping them for breeding purposes.

The following were the speaker's conclusions: (1) Protect the healthy herds by keeping all infected animals from entering them. (2) Properly eliminate all animals exhibiting tuberculous udders or evidence of generalized tuberculosis. (3) As quickly as possible test with tuberculin all animals in the suspicious herds

and segregate the reacting cows. Retest, at frequent intervals, until every infected animal is found and removed. (4) Dispose of the reacting animals by one of the following methods: (a) Destruction, (b) slaughter for beef under proper inspection, (c) isolation for breeding purposes after the Bang method. (5) Never return to the sound herd animals that have reacted to tuberculin, although they cease to react and appear to be perfectly well. (6) Change the practice of maintaining a milking herd by buying in fresh cows and selling the dry ones, to keeping more of the cows during the dry period and raising more calves. (7) Cattle should not be purchased for dairy purposes unless they pass the tuberculin test. All new animals should be watched and tested.

Dr. Rochester asked whether any experiments had been made as to the possibility of the hay bacillus, which resembled in some respects the tuberculous bacillus, being a possible source of tuberculosis.

Dr. Topman of Syracuse cited an instance which had come to his knowledge which showed clearly the unprofitableness to the farmer in keeping tuberculous cattle. It was accidentally discovered that tuberculosis existed in one of the herds supplying the city of Syracuse, and out of a total of 28 there were 25 tuberculin-reacting animals. After the 25 had been disposed of the farmer went into a neighboring county and bought ten cows, and from the ten cows he actually produced more milk than he had formerly from the 28. Dr. Topman thought that if this truth could be properly impressed upon the farmers of the State, and if they could be made to realize that it was actually a losing game for them to harbor tuberculous cattle, it would carry great weight in securing the farmers' cooperation.

Dr. Schoonmaker of Clifton Springs desired to know how frequently a herd of, say, 100 cattle ought to be examined so as to be reasonably sure that the herd is safe.

Dr. Peck of Utica asked what disposition of the milk the reader of the paper proposed to make from the segregated cattle which had reacted to the tuberculin test. He had been informed that about 40 per cent. of the cattle of the State had bovine tuberculosis, and if that was true there was an important commercial question involved, for if we did away with that percentage of the cattle in the State we should immediately be confronted with a milk famine. He did not wish to be understood as arguing for the use of milk from infected herds, but he thought that a very serious economic question was involved.

Dr. Moak was of opinion that infection often took place through the intestinal tract, and recited personal experiences which confirmed that belief.

Dr. Moore responded to the questions asked very briefly. He said that there was opened a great field for research, that we were in a state of evolution, and that he did not think it worth while to discuss the questions at length at the present time.

Milk Production, Old and New.—Dr. L. Emmett Holt of New York City delivered a lantern slide lecture with this title. In 1829, he said, when the city had a population of only 300,000, there were no less than 1,100 whiskey distilleries in New York City. In order to utilize the by-products of the distilleries vast dairy herds as well as piggeries were assembled near them to consume the "slop." The cows were kept huddled together in close, insufficiently lighted, badly ventilated quarters, and were given about one barrel of the "slop" each day per cow, and this was the only food they were supplied with. The men who were employed to milk these cows were described as tramps and vagabonds who worked in payment for a night's lodging. It was from this source that the city of New York in those days received 6-7 of its milk supply. At the present day the milk which was shipped to New York from long distances was of the best quality, for the reason that that produced nearer by was frequently insufficiently iced. In 1893 the first campaign was organized, and from that time there had been a constantly increasing interest taken in the number of bacteria that milk contained, as that was considered the best criterion of cleanliness. The question of whether or not we should have pure milk was merely a question of whether we were willing to pay the price. Milk could be produced just as pure as it was profitable to make it. At the present time the most reliable figures showed that the cleanest milk cost 14 cents per quart to produce. Of course, it was possible to have a milk which was practically sterile, but whether that was really desirable at the present time was a question. In regard to the question of whether milk should be pasteurized, the speaker did not think it desirable to make it a requirement, for the reason that pasteurized milk would not sour, and yet at the same time might be exceedingly fond. It certainly would afford an opportunity to dealers to dispose of milk which otherwise would be unsalable.

(To be continued.)

AMERICAN ACADEMY OF MEDICINE.

Special Conversational Meeting Held at Pittsburg, January 2 and 3, 1908.

The President, Dr. Thomas D. Davis of Pittsburg, in the Chair.

The Purpose of the Conference.—Dr. Charles McIntire of Easton said that the Academy was not on a quest for a course of minimum requirements, nor for a concession course to reduce eight years to seven, but to determine the educational process most likely to produce at once an educated man and a student prepared to become a skilled physician; and to adjust the baccalaureate course and that leading to the doctorate, so that everything would tell and no time be lost. It was realized that the problem was a difficult one and not to be solved at the present meeting. It was thought that commendable progress would be made should it be possible to frame a series of conclusions to be published as tentative conclusions to be at some future time remolded into workable shape. A committee for this purpose was subsequently appointed.

Criticisms of the Present Medical Curriculum.—Dr. Henry Beates, Jr., of Philadelphia, said that the present medical curriculum was a complex made up of courses of study for the medical degree no two of which were alike, either in value or merit. This criticism referred directly to the demonstrated variation in the number of sciences and branches controlling the curriculum of each institution; to the extent of the study demanded for the respective subjects; to the time required for work in each; to the relation and importance given to branch with branch, and, contemplated from the viewpoint of degrees of intrinsic value; also to equipment and duration of the sessions, as well as to the educational qualifications of the students. Excerpts were taken from the report of the Committee on Curriculum of the National Confederation of State Medical Examining and Licensing Boards showing a wide variation in time devoted to the study of the various branches in the medical school. For example, the time devoted to the study of orthopedic surgery varied from 780 hours in one medical school to 13 in another; obstetrics from 460 to 52; general surgery from 2,221 to 78; pathology, from 646 to 48. The time devoted to physiology and chemistry ranged respectively from 750 hours to 56, and from 756 to 78. Dr. Beates believed

that the present medical curriculum should not permit of divided examinations, whereby, at the end of two years, the fundamentals might be eliminated. He urgently insisted that the fundamentals should be perpetuated throughout the full four years, not in the manner of the first two years, but as applied fundamental principles. Another criticism was the disregard of the necessity for co-ordination in the teaching of the respective sciences.

The Essentials of a Medical Education.—Dr. Murray Galt Motter, of Washington, Secretary of the National Confederation of State Medical Examining and Licensing Boards, outlined the essentials of a medical education as:

1. An adequate preliminary training.

2. A medical curriculum based upon sound pedagogic principles, well balanced and closely correlated throughout; a simplified course in which the quality of the work should have more weight than mere quantity.

3. The more careful selection and training of medical teachers and a greater degree of co-operation between them.

4. The subordination of the specialties to the major branches with which they are logically connected, the refinements of special practice being relegated to the post-graduate course.

5. The substitution, in so far as possible, of practical for oral and written examinations, with the preparation and defense of a thesis as a requirement for graduation.

6. Quoting from the chairman of the Judicial Council to the Association of American Medical Colleges, he said: "Make your examinations at the end of the second year *honestly*, and require those men who cannot pass their examinations to go back or get out."

The American Medical School and Its Entrance Requirements.—Dr. David Starr Jordan, President of Leland Stanford Junior University contributed a paper of the above title, which was read by Dr. McIntire. It was stated that of the medical colleges of America, only those could live which became integral parts of universities. This applied as well to those which, without real university standards maintain a nominal connection, for purposes of advertising, with some university or college. The essentials of medical instruction were outlined as well equipped laboratories and hospitals, competent teachers, a standard of admittance which should exclude the ignorant and those incapable of scientific conceptions and a high standard of graduation, which should exclude unworthy men from the professional degree. The four years of a college course spent primarily on physiology, biology, and chemistry, and, secondarily, upon languages, literature, and history, gave a training to which the university could set its seal of approval. It was the opinion of the writer that the university should not be satisfied with less than seven years from the high school to the university degree of M.D. The writer further believed that the universities of America should begin with the junior year, leaving the freshmen and sophomore years to the colleges and the larger high schools and preparatory schools. By this arrangement all work of the university should be regarded as professional, confined to such subjects as were needed for professional training, and the profession of teaching among the rest, with such other subjects as might give breadth of vision or personal satisfaction, but not counting as constituents of a degree. In this case the course of medicine should be lengthened to five years by the inclusion of courses in science. The plan which seemed to Dr. Jordan most nearly in line with the development of the American university system was to begin all professional work with the third or junior year of the present American college. In this case the medical course might be strengthened with another year of further scientific requirements and further clinical experience at the end.

A Plea for the Impecunious Medical Student.—Dr. Roland G. Curtin of Philadelphia presented this paper, which was read by Dr. William L. Estes. It was observed that the length of time required for study had been gradually increased until at the present time the man was 28 or 29 when he commenced to practise. Considering that it might be five years before he made a living, he would be 33 or 35 years of age, when his most active period of life was almost over. Four suggestions were made for the assistance of the impecunious student and for the prevention of the medical profession being entirely in the hands of rich men's sons:

1. By commencing earlier the elementary studies necessary in his life work.

2. By having in each State at least one medical department of a university in which the man can obtain a medical education tuition free. It was suggested that in Pennsylvania one or more of the medical schools should unite with the State College and obtain the support of the State for this purpose.

3. By requesting the State to endow scholarships in the medical schools for those unable to pay.

4. The endowment of scholarships by rich men.

The Danger of Attempting Too Much.—Dr. Frederick H. Gerrish of Portland said that medical schools were designed primarily to make general practitioners, but that there was a marked tendency in the schools to give much valuable time to topics about which the practitioner had little occasion to know and to ignore or slight other things which he constantly or often needed. In the department of materia medica, for example, there was often presented an array of facts which was a burden to the mind. The teacher needed to have a keen sense of proportion and to know how to arrange a course of study which should be perfectly balanced. Specialties should be taught by experts. In short, the curriculum of the medical school should be arranged with particular reference to the needs of the general practitioner. There should be excluded all branches which were designed for mental discipline and those which did not have direct bearing upon the practice of medicine. The branches taught should be presented, not in their entirety, but only in such part as had the most practical reference to the needs of medical men. One danger of attempting too much was said to be that of setting up standards of an unreasonable height. However valuable might be the results of scientific methods in the medical school, they were of small moment if they failed to equip the student for encountering the practical part of his life work. Dr. Gerrish recognized that the studies of a medical curriculum must have a disciplinary influence upon the student's mind. The benefit, however, was incidental and not the principal issue. The real disciplinary work he believed should antedate the entrance of the man to the medical or other professional school

Dr. Clara Marshall of Philadelphia, Dean of the Woman's Medical College of Pennsylvania, in opening the discussion, claimed that the college curriculum could not be arbitrarily arranged, or if so arranged, it would not so remain; that a medical college curriculum was, unless some fortunate circumstance should determine otherwise, developed along the lines of the least resistance. In large cities, where it was easier to secure clinical material than to build extensive laboratories, the clinical side of the curriculum had usually been developed first and out of proportion to the first two years of the medical course; whereas, in the sparsely settled States of the West, patients being scarce, the tendency was to compensate for the lack of clinical material by erecting laboratories. This was especially true where an appropriation by the State was made for this purpose. In some States, in fact, only half a curriculum was possible, that is to say, the preclinical course only was provided for. An ideal curricu-

lum should be striven for, but there must be expected the modifications of environment.

Dr. Seneca Egbert of Philadelphia would advise young men to secure as liberal an education as possible before entering the medical school. While the medical school might not be highly cultural, he believed it to be developmental in the highest sense of the word. The tests of the State Board, while not what they should be, were, he believed, the best that could be obtained at present. While there should be a unification of curriculum, the question was regarded as largely one of environment.

Dr. William L. Estes of Bethlehem spoke of the great deficiency in the knowledge of anatomy exhibited by the students of all colleges of Eastern Pennsylvania. He believed that this fundamental branch should be continued in a practical way through the whole curriculum. The innovation in this country of a non-medical training in physics, anatomy, chemistry, and biology, he thought, might be detrimental to the general all-round medical trend which the student's education should assume.

Dr. J. W. Holland of Philadelphia thought that while training in universities at home and abroad made a very fine type of medical man it did not always make the very best doctor. He emphasized the fact, for which biological reasons had been given, that a man ought to be engaged at the business of life before he was 25 years of age.

Professor Schurmann, President of Cornell University, remarked that he represented a university which, beginning with the year 1908, would admit to its medical college only college graduates or persons of equivalent training. The question of such action, however, was not one to be settled by universal rule, but was dependent upon circumstances. He believed that while the elective principle in colleges was inevitable, it had been carried too far. In the years following the first two of the college course the student should study predominantly the sciences before entering upon the medical curriculum. Admitting that medical subjects and the pure sciences like physiology and anatomy should be taught by medical men, he asserted that the sciences like chemistry, physics, and biology which were not so closely intertwined with the medical sciences, could be taught by faculties other than medical. He would, therefore, eliminate chemistry, physics, and biology from the medical course, and the specialties he would put into the post-graduate course. There would then be room in between the two extremes for a good medical course.

Dr. Edward B. Heckel of Pittsburg deprecated the lack of unanimity in medical faculties and of concerted action among the heads of departments. The subject of psychology, he thought a neglected one in the medical schools.

What Are the Principles Underlying and What Provisions Should Be Included in a Medical Practice Act?—Dr. Alex. R. Craig of Philadelphia thought that as a matter of protection to the public, the law should determine the very lowest qualification a man might have and still be a safe practitioner of medicine. The matter of reciprocity should be one for each State to determine. In the event of a physician desiring to practise in another State, and since State Board examinations had been found faulty in determining the amount of knowledge a man had, it semed to him that some value should attach to resolutions passed by the man's own confrères as to his fitness to practise medicine.

Dr. Charles McIntire said that the provisions of a medical practice act should give no preponderance of power to the "dominant school." Other points emphasized by him were the necessity of a definition of what the practice of medicine really is, and that upon the medical examining board should be laid the responsibility of bringing to justice illegal practitioners of medicine.

Professor Raymond of Brooklyn favored the divided examinations, whereby at the end of the second year the student might undergo examinations in the so-called elementary or fundamental branches. Personally he objected to the elimination in the New York one board bill of the practice of medicine, therapeutics, and materia medica from the licensing examinations.

Dr. J. W. Holland of Philadelphia, in opposition to Professor Raymond, believed that any man who had qualified himself to a high standard in physiology, anatomy, chemistry, hygiene, pathology, surgery, diagnosis, etc., would know what to do in disease according to a certain school of medicine. He thought that such power as the determination of reputability of a college which it had been suggested should be given to the examining board, ought to be awarded with very great care.

Dr. Seneca Egbert of Philadelphia felt that legislators should be convinced of the fact that medical law was not for the benefit of the profession, but of the public. This idea should also be borne in mind by the profession.

Dr. J. B. McAlister of Harrisburg thought it possible to pass any medical bill in Pennsylvania could there but be a united profession back of it. No one school of medicine, he believed, should dominate the board.

Dr. Lee Smith of New York said that the New York Medical Practice Act, while having made a compromise in the elimination of the practice of medicine, materia medica, and therapeutics, was found to be working well. The examination of students in anatomy, physiology, and chemistry at the close of the second year was of great advantage. The essentials of these sciences, he believed, would remain in the students' minds.

Dr. Murray Galt Motter of Washington, D. C., believed that a medical law should eliminate politics from the State Board of Medical Examiners, and should provide that such examiners should have special qualifications for their duties. The ideal condition would be that the law should require the State Board to satisfy itself that the candidate was a safe man to practise medicine, and leave out all consideration of what subjects he should be examined in, and of the length of time devoted to his preparation, saying that, "If he is prepared, he is prepared." If a law like that were framed, he thought there would be no difficulty about licensing a man who had qualified by his practice in another State.

What Can the College and Fitting School Do to Aid in the Study of Medicine?—Dr. W. F. Mercer, professor of biology and geology in the Ohio University, read this paper, saying that he believed the place to save time was in the high school, also that to take some scientific work along with the other work of the college course was an advantage. He thought the medical man was making a mistake in considering that the graduates of literary colleges to-day were the same product as the graduates of twenty-five or fifty years ago. He thought it was not generally realized that the literary colleges of the present time were doing better and more work in literary science than the average medical college could possibly do. It seemed to him unfair that credit should not be given in the medical school for work done in the college.

What Are the Essential Subjects of General Information to Be Possessed by the Physician?—Rev. Dr. James D. Moffatt, President of Washington and Jefferson College, believed that as far as possible the traditional college course of study should be pursued before entering upon a medical education. He did not advise that all medical colleges should follow at once the example of Johns Hopkins and Harvard regarding the admission requirement. He conceded that there were some high school graduates who, going at once into the medical schools, would prove to be more successful physicians than some college graduates would ever become. It was his belief, however, that the college graduate who had made use of his opportunities would find himself better equipped to get the most out of his medical school op-

portunities than by saving those four years of time for his practice. In advocating generally the pursuit of a college course as preparatory to the study of medicine, he believed that that course would offer chemistry, physics, botany, and zoology, with abundant laboratory practice, taught without special reference to medicine, but more broadly, as perhaps, furnishing a better basis for special applications to the human body. The course should also include Latin and one or two modern languages, some higher mathematics, practice in English composition, some knowledge of English literature, history, a good course in psychology, anthropology, and sociology, and some knowledge of political science and ethics. Such a course would give an introduction to all the principal divisions of human knowledge and open the way for such further study as individual taste might induce.

Dr. M. J. Lewi, Secretary Board of Medical Examiners of New York, New York City, gave a résumé of the legal acts regulating the practice of medicine in New York.

Rev. A. B. Church, President of Buchtel College, believed that four years of college work was of value, if it did nothing more than change the ideals of young people. He did not favor the "short cuts," and felt that the time of development could not be ignored. He claimed that the best educated man, not the best instructed, was the man who possessed the greatest number of points of contact with the world of force.

Professor Blake of Lehigh University would like to see put in operation an arrangement by which the medical colleges would certify to the character of the work done in literary colleges and thereby make it possible for a man to get a medical degree in three years. Speaking for Lehigh, he felt that they were there prepared to give work in chemistry, physics, biology, and comparative anatomy, which was the equivalent of similar work given in any medical college in the country.

The Rev. G. L. Collie, President of Beloit College, who was unable to be present, communicated by letter his special interest in the Medical Practice Acts and the injustice done to independent colleges by these new laws. It was observed that such enactments were practically forcing many of the colleges to consider incorporating as two-year medical schools. A solution of the problem was said to reside in the amendment of the Medical Practice Acts so that the medical schools could give credit for pre-medical work done in the colleges.

Rev. William M. Crawford, D.D., President of Allegheny College, was represented in this discussion by a letter from Dr. Robert S. Breed of the Department of Biology and Geology of the Allegheny College. In the opinion of the writer the ideal preliminary training for medical students should include at least four year courses in biology, including, first, a course in general biology, which should deal not only with the general anatomy and physiology of a selected series of type animals and plants, but also a history of the development of the science, a study of the interrelation of species as included under the heading of ecology, a study of the distribution of living things in time and space, and, finally and most important, a study of the great laws and principles of biology with a discussion of the most important theories. This should be followed by courses in the comparative anatomy, histology, and embryology of vertebrates, with frequent references to the invertebrates. Additional training in botany, especially in general bacteriology, was highly desirable, together with training in laboratory technique. Dr. Breed asserted that it was possible to give this preliminary training in the ordinary college, and he believed it an advantage to have these subjects taught there rather than in the medical school because they were there taught from the standpoint of their general cultural value rather than from the standpoint of their practical application.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

University of the State of New York.

October 1, 2, and 3, 1907.

(Answer any 10 of the questions on each paper, but no more.)

ANATOMY.

1. Give the general characteristics of a vertebra. Describe the atlas.
2. Describe the ligaments of the hip joint.
3. Describe the varieties of muscular fiber and state where each variety is found.
4. Describe the branches of the arch of the aorta.
5. In what part of the body are the azygos veins? What purpose do they serve?
6. Give the anatomical name, the location, the average size, and the average number of the lymphatic glands of the ileum.
7. Describe the course of the fibers in the optic commissure.
8. Give the minute anatomy of the skin.
9. State the position, structure, length, and relations of the esophagus.
10. Give the gross anatomy of the eye.
11. Write a description of the thyroid gland.
12. What organs are wholly or partially retroperitoneal?
13. Give the relations of the stomach. What glands are found in the mucous membrane of the stomach?
14. Describe and locate the appendix vermiformis.
15. Give the course, caliber, relations, and structure of the ureter.

PHYSIOLOGY.

1. Define protoplasm and give the characteristic properties of living protoplasm.
2. Describe the heart sounds and state to what they are due.
3. Give the average normal temperature and the rate of pulse and of respiration in (*a*) the infant, (*b*) the adult, (*c*) the aged.
4. What digestive changes take place under the influence of saliva and of gastric juice?
5. State the origin and the functions of bile. What is the average quantity of bile secreted in twenty-four hours?
6. Describe the process by which digested food is absorbed.
7. Describe the physical properties of blood and name its constituents.
8. Describe the manner in which the vibrations of the air are transmitted through the auditory apparatus to be interpreted as sound.
9. State the origin of urea in the body. Mention the average amount of urea excreted in twenty-four hours.
10. Describe the physiological mechanism of perspiration.
11. Give the functions of (*a*) the medulla oblongata, (*b*) the cerebellum.
12. Give the mechanism of focal accommodation.
13. Describe (*a*) tonic muscular contraction, (*b*) clonic muscular contraction.
14. State in detail how the placenta performs its function.
15. Describe the physiological action of the kidney.

HYGIENE AND SANITATION.

1. Define (*a*) drainage, (*b*) sewage, (*c*) sewerage, (*d*) humidity, (*e*) ptomain.
2. In what part of an occupied room is the air most impure? Explain.
3. Explain the difference between hard water and soft water. State how a milk supply may be contaminated by impure water.
4. In what ways do forests benefit public health?
5. Diphtheria and variola are more prevalent in cold weather than in warm weather; explain why this is so. Give hygienic procedure in a case of diphtheria.
6. What methods should be employed for the prevention of yellow fever in the tropics?
7. Describe a procedure of disinfecting and of disposing of typhoid fever stools.
8. Mention some pathogenic bacilli found in drinking water and state what means should be employed to render such water potable.
9. What hygienic measures are advisable for the prevention and eradication of scorbutus?
10. What evil consequences may arise from the excessive use of tobacco?

11. What means should be employed under public health administration to prevent the spread of tuberculosis?
12. Mention *three* diseases induced by industrial pursuits. Explain how these diseases are caused.
13. Discuss the immunizing power of vaccination. State the possible dangers of vaccination.
14. What influences or conditions probably tend to make cerebrospinal meningitis epidemic? Mention prophylactic measures and describe the supposed causative germ.
15. Mention the various kinds of baths employed in health and in disease, and state the general hygienic rules to be observed in their use.

CHEMISTRY.

1. Define element, ion, specific gravity, reaction, an hydrid.
2. Give the chemical reaction of (*a*) saliva, (*b*) gastric juice, (*c*) urine, (*d*) mother's milk, (*e*) synovial fluid.
3. Give the laboratory preparation of O, of CO_2, and of H_2S. Give the properties of *one* of the products mentioned.
4. What is the chemical name of (*a*) common table salt, (*b*) soot, (*c*) vinegar, (*d*) blue vitriol, (*e*) Rochelle salt?
5. Give the formula, method of preparation, and principal uses of chloride of lime.
6. Describe a test for biliary acids and their salts.
7. State the changes occurring in the air and in the blood in respiration.
8. Give the formula, uses, and properties of hydrogen dioxide.
9. Give a test for the detection of alum in baking powder.
10. State the source of *each* of the following acids: (*a*) hydrochloric, (*b*) sulphuric, (*c*) lactic, (*d*) tannic, (*e*) tartaric.
11. How may carbolic acid be prepared? Mention a chemical antidote for carbolic acid poisoning.
12. Describe (*a*) a qualitative test for sugar in the urine, (*b*) a quantitative test for sugar in the urine.
13. What is the action of a solution of permanganate of potassium used as a disinfectant?
14. Give the names and state the formulas of the different compounds used to produce general anesthesia.
15. Complete the following equation:

$$2KI + MnO_2 + 2H_2SO_4 =$$

SURGERY.

1. Mention the indications for draining a wound, and describe the methods of securing drainage.
2. Define (*a*) lipoma, (*b*) angioma, (*c*) osteoma, (*d*) myxoma, (*e*) carcinoma. Give the symptoms of scirrhous carcinoma of the breast.
3. Describe in detail amputation of the forearm.
4. Give the treatment of a compound fracture of the shaft of the tibia.
5. Give the symptoms and the treatment of a forward dislocation of the head of the humerus.
6. Describe the injury received by the various tissues in a severe sprain of the ankle and outline the treatment.
7. What should be the immediate procedure and the subsequent surgical dressing in a case of talipes equinovarus in a newborn infant?
8. Give the surgical treatment of hemorrhage. Describe (*a*) intravenous saline infusion, (*b*) hypodermoclysis.
9. Give the symptoms of vesical calculus. Describe a method of proving the presence of a vesical calculus.
10. Describe the preparation necessary for an aseptic laparotomy as regards (*a*) the patient, (*b*) the surgeon, (*c*) the assistants, (*d*) the instruments, (*e*) the operating room.
11. Differentiate between fistula and sinus. Describe the surgical treatment of fistula in ano.
12. Mention the most common causes of iritis. Give the symptoms and the surgical treatment of iritis.
13. What conditions render tonsillotomy advisable and how is the operation performed?
14. When should skin grafting be employed? Describe an approved method of skin grafting.
15. Describe in detail the treatment of a scalp wound when a fractured skull is suspected.

OBSTETRICS AND GYNECOLOGY.

1. State the indications for the use of the intrauterine douche and mention the objections to its use.
2. Give the physiological explanation of fecundation.
3. Describe the permanent changes in the female sexual organs following parturition.
4. What are the causes of toxemia of pregnancy? Give the prophylactic management of such a condition.
5. What are the varieties of placenta previa and how should each variety be managed?
6. Under what conditions does version become imperative? How should version be performed?
7. How is external palpation applied to the diagnosis of the position of the fetus?
8. In the after-coming head, what principles should be applied to secure a living child? How may a dead fetus influence labor?
9. What conditions demand the induction of abortion prior to quickening and what is the technique of the procedure?
10. Give the prognosis and the treatment of a uterine fibroid complicating pregnancy.
11. State the pathology, symptoms, and surgical treatment of endometritis.
12. Differentiate between menorrhagia and metrorrhagia. Give the surgical management of each.
13. Define atresia of the vagina and state the method of relief.
14. Give the etiology and the surgical treatment of erosions of the cervix uteri.
15. Give the causes and the dangers of ophthalmia neonatorum and state the preventive management.

PATHOLOGY AND BACTERIOLOGY.

(Of the ten questions to be answered, select at least four from each group.)

GROUP I.—1. Describe (*a*) the syphilitic lesions of the skin, (*b*) the lesions in lupus.
2. What pathological changes in lung tissue occur in the various stages of lobar pneumonitis?
3. Describe the changes that occur in the structure of the crystalline lens in cataract.
4. What is leucocytosis and to what conditions may it be due?
5. Describe and illustrate by a drawing or otherwise, the microscopical appearance of an adenoid.
6. Describe the macroscopical and the microscopical appearance of carcinoma of the breast.
7. What pathological conditions are productive of icterus?
8. Describe the changes that occur in degeneration of muscle.

GROUP II.—9. What are the three basic forms of bacteria? Describe each form by drawing or otherwise.
10. Name and describe the microorganism of typhoid fever.
11. Describe the tubercle bacillus. Give a method of microscopical demonstration of the tubercle bacillus.
12. What is a pure culture? Mention *three* of the most useful culture media.
13. Describe the specific organism of tetanus and state its peculiar culture characteristics.
14. Name and describe a malarial parasite.
15. What is a diplococcus? Give the names of *two* pathogenical diplococci.

DIAGNOSIS.

1. What vertebræ are directly back of the following points: (*a*) xiphoid appendix, (*b*) Ludwig's angle (angulus Ludovici), (*c*) suprasternal notch?
2. What is the significance of (*a*) albumin in the urine, (*b*) casts in the urine?
3. Make a differential diagnosis of the sore throat of diphtheria, scarlatina, and acute tonsillitis.
4. What are the symptoms of incipient tuberculosis? With what other conditions may incipient tuberculosis be confounded?
5. Give the normal boundaries of cardiac dullness. What conditions may increase the area of cardiac dullness?
6. Describe the stools in (*a*) enteritis, (*b*) dysentery.
7. What is the significance of (*a*) bronchial breathing, (*b*) crepitant râles, (*c*) vesicular breathing?
8. Make a differential diagnosis of gastric ulcer, cancer of the stomach, and stenosis of the pyloric end of the stomach.
9. What is the incubation period of (*a*) rubeola, (*b*) parotitis, (*c*) variola, (*d*) varicella, (*e*) scarlatina?
10. Describe an attack of hepatic colic due to biliary calculi.
11. Give the topography of the valves of the heart on the chest wall. Where is a mitral obstructive murmur heard loudest?
12. Give the clinical signs of pus formation and retention.
13. What are the diagnostic features of tabes dorsalis?
14. Give an estimate of the value of the *x*-ray as an aid to diagnosis.
15. State the diagnostic value of a blood examination in (*a*) chlorosis, (*b*) appendicitis, (*c*) trichinosis.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

UNIVERSITY OF THE STATE OF NEW YORK.

October 1, 2, and 3, 1907.

ANATOMY.

5. The azygos veins are found in the abdominal and thoracic cavities. They serve as a connecting link between the superior and inferior venæ cavæ, and also collect blood from the intercostal spaces.

PHYSIOLOGY.

1. Protoplasm is a jelly-like substance which is the physical basis of life.

The characteristic *properties* of living protoplasm are: (1) irritability, or power of responding to a stimulus; (2) power of movement; (3) power of assimilation; (4) power of growth; (5) power of excretion, and (6) power of reproduction.

2. The *causes* producing the *first* sound of the heart are not definitely ascertained. The following are supposed to be causatory factors: (1) The vibration and closure of the auriculo-ventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall.

The *second* sound is caused by the vibration due to the closure of the semilunar valves.

3.—

Average normal:	In Infant	In Adult	In Aged
Temperature.....	About 37.1° C.	About 37.1° C.	About 37.4° C.
Rate of Pulse.....	" 120 a min	" 72 a min	" 80 a min
Rate of Respiration..	" 40 "	" 16 "	" 18 "

4. The *saliva*, by means of the ptyalin, converts starches into dextrin and maltose.

The gastric juice, by means of the pepsin, converts proteids into proteoses and peptones; the casein of milk is also curdled.

5. Bile is a secretion product of the liver.

The functions of the bile are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time it tends to keep the feces moist (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

The average quantity of bile secreted in twenty-four hours varies from about 500 c.c. to 900 c.c.

7. *The physical properties of blood*: Fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100 degrees F.).

The *constituents of the blood* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

8. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain."—(Brubaker's *Physiology.*)

9. *Urea* is derived from the nitrogenous food ingested: it is manufactured by the cells of the liver. The average amount of urea excreted in twenty-four hours is about five hundred grains.

11. (*a*) *The functions of the medulla* are: (1) It is a conductor of nervous impulses or impressions from the cord to the cerebrum, from the brain to the spinal cord, also of co-ordinating impulses from the cerebellum to the cord; (2) it contains collections of gray matter which serve as special nerve centers for the following functions or actions: Respiration, salivary secretion, mastication, sucking, deglutition, speech production, facial expression; it also contains the cardiac and vasomotor centers.

(*b*) *The functions of the cerebellum* are: (1) co-ordination, (2) equilibrium.

12. "*Mechanism of Accommodation.*—The lens is an elastic structure, and when released from the flattening influence of its suspensory ligament tends to assume a spherical shape. During accommodation the ciliary muscle (especially the circular fibers) contracts, drawing forward the chorioid and relaxing the suspensory ligament; this diminishes the tension of the lens capsule and allows the inherent elasticity of the lens to increase its convexity. The change in curvature affects chiefly the anterior surface of the lens. This is Helmholtz's theory and the one usually accepted. Lately Tscherning has advanced a different theory; he maintains that the ciliary muscle increases the tension of the suspensory ligament during contraction and that this causes peripheral flattening of the lens with bulging anteriorly at its center. The act of accommodation is accompanied by contraction of the pupil, and (in binocular vision) by convergence of the visual lines." (May's *Diseases of the Eye.*)

13. In *tonic* muscular contraction the muscle remains for some time in a state of rigid contraction. In *clonic* contraction the muscle alternately contracts and relaxes.

14. "For the purposes of understanding its general functions it is sufficient to recall that the placenta consists essentially of vascular chorionic papillæ from the fetus bathed in large blood-spaces in the decidual membrane of the mother. The fetal and the maternal blood do not come into actual contact; they are separated from each other by the walls of the fetal blood-vessels and the epithelial layers of the chorionic villi, but an active diffusion relation is set up between them. Nutritive material, proteid, fat, and carbohydrate and oxygen pass from the maternal to the fetal blood, and the waste products of fetal metabolism—carbon dioxide, nitrogenous wastes, etc.—pass from the fetal to the maternal blood. . . . . We are far from having data that would justify us in supposing that the exchange between the two bloods is effected by the known physical processes of osmosis, diffusion, and filtration. . . . . It is generally assumed that the chorionic villi play an active part in the process." (Howell's *Text-book of Physiology.*)

HYGIENE AND SANITATION.

1. (*a*) *Drainage* is the removal of the surface water and soil water

(*b*) *Sewage* is the matter found in sewers, and consists chiefly of excreta and the waste matter from kitchens.

(*c*) *Sewerage* is the process of systematically collecting and removing sewage from houses or other buildings; also the system of pipes, etc., arranged for the carrying off of sewage.

(*d*) *Humidity* is the degree of water vapor in the air.

(*e*) *Ptomain* is a basic compound, containing nitrogen, and produced by bacteria during the putrefaction of animal or vegetable matter.

2. The foulest air will be found nearest the ceiling; there is a tendency for the used air to rise.

3. *Hard* water forms a curdy deposit with soap and contains an excess of calcium and magnesium salts; *soft* water allows soap to dissolve in it without precipitation.

A milk supply may be contaminated by impure water, by being adulterated with it; by the cans, containers, or cows' udders being washed with it.

5. Ventilation is less satisfactory and the changes in temperature are greater and more frequent in the cold weather; hence vitality is lowered and there is a greater liability to take diseases.

6. To prevent yellow fever in the tropics: All cases of the disease should be isolated; houses should be protected by mosquito netting; mosquitos should be killed; swamps should be drained.

8. *Some pathogenic bacteria found in drinking water* are: Eberth's bacillus of typhoid, Koch's comma bacillus of cholera, *Bacillus anthracis, Staphylococcus pyogenes aureus, Streptococcus pyogenes.*

To render such water potable: Boil the water and filter it. The best safeguard by the latter method is to use the Pasteur-Chamberland filter or some other porcelain filter.

9. "Abundant fresh air and sunlight and a diet of fresh vegetables, especially potatoes, spinach, and fruits, with meat, eggs, fish, etc. If the stomach is irritable fresh milk, eggs, and lime, orange or lemon juice may almost always be tolerated. * * * A mouth wash of saturated boric acid, alternating with a 2 per cent. solution of potassium permanganate, should be used every

hour or two until the gums are healed." (From Thompson's *Practical Medicine.*)

10. "The continued use of tobacco, by smoking or chewing it to excess, produces granular inflammation of the fauces and pharynx, atrophy of the retina, dyspepsia, lowered sexual power, sudden faints, nervous depression, cardiac irritability, and occasionally angina pectoris. Used by the young, it hinders the development of the higher nerve centers and impairs the nutrition of the body by interfering with processes of digestion and assimilation. It has been credited with causing cancer of the lips and tongue, blunting the moral sense, mental aberration and even insanity." (Potter's *Materia Medica, etc.*)

11. "The preventive measures which may be taken to reduce tuberculosis may be summarized as follows: (1) The compulsory notification of phthisis. (2) The removal of those conditions of domicile and of occupation which are known to promote the incidence of the disease, including the regulation of certain dusty trades. (3) The diffusion of knowledge (by medical men, leaflets, etc.) regarding the nature and modes of spread of the disease, and the precautions which should be taken in order to prevent its extension. (4) The testing of sputum and other suspected discharges, and of milk, meat, etc., supposed to be tuberculous—reports to be furnished free of charge. (5) Local authorities to undertake, without charge, the disinfection of houses recently occupied by phthisical persons. (6) The establishment of sanatoria and isolation accommodation for the cure of phthisical patients, and the isolation of those who are a distinct source of danger to fellow lodgers or workers. (7) The enforcement of measures against spitting in public conveyances and in places of public resort. (8) The efficient sanitary supervision of dairy farms, dairies, and milkshops. The periodical veterinary inspection and testing (by tuberculin) of milch cows, and the slaughter of tuberculous animals. The prohibition of the sale of milk of cows affected with tuberculosis. (9) The proper inspection of meat in public abattoirs, and the adoption of due precautions for the control of imported meat and milk." (Parkes' *Practical Hygiene.*)

CHEMISTRY.

1. An *element* is a substance which cannot, by any known means, be split up into dissimilar substances.

An *ion* is the primary product of electrolysis.

Specific gravity of a substance is the weight of a given volume of that substance as compared with the weight of an equal volume of some other substance taken as a standard of comparison, under like conditions of temperature and pressure.

Reaction has two meanings: (1) It is the mutual chemical action of two substances upon each other. (2) It is the action of substances upon certain organic pigments.

An *anhydrid* is an oxide capable of combining with water to form an acid.

2. The chemical reaction of (*a*) saliva, is alkaline; (*b*) gastric juice, is acid; (*c*) urine, is acid: (*d*) mother's milk, is alkaline; (*e*) synovial fluid, is alkaline.

3. O is prepared by heating a mixture of equal parts of potassium chlorate and manganese dioxide. The potassium chlorate gives up all of its O:

$$2KClO_3=2KCl+3O_2.$$

CO_2 is prepared by acting on calcium carbonate with hydrochloric acid:

$$CaCO_3+2HCl=CaCl_2+H_2O+CO_2$$

H_2S is prepared by acting on ferrous sulphide with dilute sulphuric acid:

$$FeS+H_2SO_4=FeSO_4+H_2S.$$

The *properties of oxygen*: It is a colorless, odorless, tasteless gas; it is sparingly soluble in water; it has a strong tendency to enter into combination with other elements; it is necessary for respiration, and is both combustible and a supporter of combustion.

4. The chemical name of (*a*) common table salt, is sodium chloride; (*b*) soot, is carbon; (*c*) vinegar, is acetic acid; (*d*) blue vitriol, is cupric sulphate; (*e*) Rochelle salt, is potassium sodium tartrate.

5. CHLORIDE OF LIME. *Formula*: $Ca(OCl)_2+CaCl_2$. *Preparation*: It is made by treating slaked lime with chlorine:

$$2Ca(OH)_2+2Cl_2=2H_2O+Ca(OCl)_2+CaCl_2.$$

Principal uses: As a disinfectant and for bleaching.

6. *The Pettenkofer test*: Dissolve one or two drops of a solution of cane sugar 1:4 in the liquid to be examined; shake the mixture and float it carefully upon concentrated H_2SO_4. In the presence of bile acids the solution becomes turbid at the zone of junction of the two layers; this is soon replaced by a deep reddish purple zone, which extends upward and downward.

7. Changes occurring in the *air* is respiration:

	Expired Air.	Inspired Air.
Oxygen	16.6 per cent.	21 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	4.4 per cent.	0.04 per cent.
Other gases	Often present.	Rare.
Watery vapor	Saturated.	Variable.
Temperature	That of body.	Variable.
Volume	Diminished.	Varies.
Bacteria	None.	Always present.
Dust	None.	Always present.

Changes occurring in the *blood* in respiration: Respiration renders the blood red in color, warmer, adds oxygen and takes away carbon dioxide, makes it more coagulable and of more uniform composition.

8. HYDROGEN DIOXIDE. *Formula*: H_2O_2.

Uses: It is used as a disinfectant, as an oxidizing agent, as an antiseptic, for bleaching, and for renovating old oil paintings.

Properties: It is a colorless, syrupy liquid, heavier than water, and having a metallic taste.

9. "Alum is tested for (in baking powder) by burning a small quantity of the sample to an ash, which is then treated with boiling water and filtered. If on the addition of ammonium chloride to the filtrate a flocculent precipitate is formed, this will indicate the presence of alum in the sample." (*Reference Handbook of the Medical Sciences.*)

10. The *source* of (*a*) *hydrochloric acid*: The fumes produced by the action of H_2SO_4 on NaCl are dissolved in H_2O.

(*b*) *Sulphuric acid*: It is produced by the combustion of S and the oxidation and hydration of the resulting SO_2 by means of HNO_3.

(*c*) *Lactic acid*: It is produced by the lactic fermentation of milk-sugar.

(*d*) *Tannic acid*: From nutgalls.

(*e*) *Tartaric acid*: From the juice of the grape.

11. *Carbolic acid* may be prepared by heating phenyl iodide with potassium hydroxide:

$$C_6H_5I+KOH=KI+C_6H_5OH.$$

Chemical antidotes for carbolic acid poisoning are the soluble sulphates, such as sodium sulphate or magnesium sulphate.

12. "(*a*) *Qualitative test for sugar in the urine*: Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color." (Witthaus' *Essentials of Chemistry.*)

(*b*) Method for the *quantitative estimation of sugar in urine*: *Fehling's method*: The solution is made as follows:

I. Dissolve cupric sulphate	51.98 gm.
in water to	500.00 c.c.
II. Dissolve Rochelle salt	259.9 gm.
in sodium hydroxide soln. sp. gr. 1.12 to	1,000 c.c.

(Piffard).

When required for use, one volume of I. is to be mixed with two volumes of II. The copper contained in 10 c.c. of this mixture is precipitated completely, as cuprous oxide, by 0.05 gm. of glucose.

"To determine the quantity of sugar, place 10 c.c. of the mixed soln. in a flask of about 250 c.c. capacity, dilute with H_2O to about 30 c.c., and heat to boiling. On the other hand, the urine to be tested is diluted and thoroughly mixed with four volumes of H_2O if it be poor in sugar, or with nine volumes of H_2O if highly saccharine, and a burette filled with the mixture. When the Fehling soln. boils, add a few gtt. NH_4HO and then 5 c.c. of the urine from the burette, boil again, and continue the alternate addition of diluted urine and boiling of the mixture until the blue color is quite faint. Now add the diluted urine in quantities of 1 c.c. at a time, boiling after each addition until the blue color just disappears. Have ready a small filter, and, having filtered through it a few gtt. of the hot mixture, acidulate the filtrate with acetic acid, and add to it 1 gtt. soln. of potassium ferrocyanide. If a brownish tinge be produced, add another ½ c.c. of dil. urine to the flask, boil, and test with ferrocyanide as before. Continue this proceeding until no brown tinge is produced. The burette reading, taken at this point, gives the number of c.c. of dilute urine containing 0.05 gm. glucose, and this divided by 5 or 10, according as the urine was diluted with 4 or 9

volumes of H_2O, gives the number of c.c. of urine containing 0.05 gm. sugar. The number of c.c. urine passed in twenty-four hours divided by 20 times the number of c.c. containing 0.05 gm. glucose, gives the elimination of glucose in twenty-four hours in grams.

Example: Urine in 24 hours =2,436 c.c.
Fehling's soln. used = 10 c.c.
Urine diluted with 4 vols. H_2O
Burette reading = 18.5 c.c.

$$\frac{18.5}{5} = 3.7 = \text{c.c. urine containing 0.05 gm. glucose.}$$

$$\frac{2{,}436}{3.7 \times 20} = 32.92 = \text{grams glucose eliminated in 24 hours."}$$

(Witthaus' *Urinalysis.*)

13. Potassium permanganate acts as a disinfectant by oxidizing the organic matter with which it comes in contact.

14. The chief general anesthetics, with their formulæ, are: Chloroform, $CHCl_3$; ether $(C_2H_5)_2O$; nitrous oxide, N_2O; ethyl chloride, C_2H_5Cl.

15. $2KI + MnO_2 + 2H_2SO_4 = K_2SO_4 + MnSO_4 + 2H_2O + I_2$.

PATHOLOGY AND BACTERIOLOGY.

3. "*Senile cataract* results from shrinkage of the nucleus, together with the lens fibers, and presence of fluid in the spaces thus created. The lens fibers then swell, become cloudy, and disintegrate. The nucleus usually remains unchanged." (May's *Diseases of the Eye.*)

4. *Leucocytosis* is an increase in the number of leucocytes in the peripheral blood.

It may be due to inflammations, hemorrhage, various infections, certain toxic conditions. It is also found physiologically or normally: During digestion, during pregnancy, after parturition, after violent exercise, massage, and in the new-born child.

7. *Icterus* may be caused by: Certain poisons, infections, pernicious anemia, pronounced degeneration of the liver cells, obstruction of the bile duct, catarrh of the bile ducts, parasites or other foreign bodies in the bile ducts, and the pressure of tumors in adjacent parts.

9. The three basic forms of bacteria are: (1) The *coccus*, which is round or oval, and may appear singly, in pairs, in groups of four, in chains, or in bunches. (2) The *bacillus*, which is rod shaped, with the longer sides parallel, and the short ends either straight, rounded, or concave. (3) The *spirillum*, which is spiral.

10. Typhoid fever is caused by the *Bacillus typhosus* of Eberth. This organism is rod shaped, with rounded ends, is from 2 to 4 mikrons in length, and about three-fourths of a mikron in breadth; it does not stain by Gram's method, but stains with all the anilin dyes; it has flagella, no spores, is aërobic and facultative anaërobic, and is motile.

11. The tubercle bacillus is rod shaped, is from 1½ to 3½ mikrons in length and about one-third to one-half a mikron in breadth, is a strict parasite, is not motile and has no flagella.

To demonstrate the existence of tubercle bacilli in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

12. A pure culture is a culture in which only one microorganism is present.

Three-culture media: Bouillon made from beef extract, gelatin, and agar.

13. The bacillus of tetanus is characterized by its peculiar spore, formed at one end of the bacillus, and giving it the appearance of a pin; it is purely anaërobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil, and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium, and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon, it grows near the bottom of the tube, and produces gases.

15. A *diplococcus* is a form of bacteria made up of two cocci attached to each other (in pairs).

Two pathogenic diplococci: *Diplococcus pneumoniæ* and *Diplococcus intracellularis meningitidis.*

DIAGNOSIS.

1. The vertebra directly back (*a*) of *xiphoid appendix*, is the tenth dorsal; (*b*) of *Ludwig's angle*, is the third dorsal; (*c*) of *suprasternal notch*, is second dorsal.

2. (*a*) *Albumin* is found in the urine: "(1) In fevers, as typhoid and pneumonia. (2) In valvular heart lesions, degeneration of the heart muscles, diseases of the coronary arteries, impeded pulmonary circulation, in pregnancy by pressure upon the renal veins, in intestinal catarrh, and in Asiatic cholera. (3) In purpura, scurvy, leukemia, pernicious anemia, jaundice, diabetes, and syphilis. (4) After taking lead, mercury, iodine, phosphorus, arsenic, antimony, chloroform, cantharides, oxalic, carbolic, salicylic or the mineral acids, turpentine and nitrates. (5) In large amounts in acute nephritis and chronic parenchymatous nephritis; in small amounts in chronic interstitial nephritis and amyloid kidney." (Witthaus' *Essentials of Chemistry.*)

(*b*) "*Casts* in the urine occur in nephritis; and different varieties are found in the different forms of that disease. *Hyaline* casts occur in all forms of nephritis, in congestion of the kidneys, in jaundice, and even in health. *Waxy* casts occur especially in chronic parenchymatous nephritis. *Epithelial* casts occur especially in acute parenchymatous nephritis. *Granular* casts are especially common in chronic nephritis, but they may occur in acute nephritis. *Fatty* casts occur chiefly in chronic parenchymatous nephritis. *Blood* casts occur in acute and chronic hemorrhagic nephritis. *Pus* and *bacterial* casts are occasionally met with in suppurative nephritis." (From Stevens' *Practice of Medicine.*)

3. "In *diphtheria* the palate, fauces, or pharynx are of a vivid red color, coated in parts with a thick grayish white exudation, which, when peeled off, leaves the subajacent membrane red and bleeding, and is soon renewed. In *scarlatina* the throat may be inflamed, but not ulcerated, or both inflamed and ulcerated, or with both these conditions and accompanied with sloughing. In *acute tonsilitis* the pain is augmented by swallowing, the affected tonsil is swollen, and projects towards the middle line, the mucous membrane is red and covered with mucus." (From Fenwick's *Medical Diagnosis.*)

4. The early manifestations of pulmonary tuberculosis are: (1) *Physical signs*: Deficient chest expansion, the phthisical chest, slight dullness or impaired resonance over one apex, fine moist râles at end of inspiration, expiration prolonged or high pitched, breathing interrupted. (2) *Symptoms*: General weakness, lassitude, dyspnea on exertion, pallor, anorexia, loss of weight, hemoptysis, slight fever, and night sweats.

Incipient tuberculosis may be confounded with typhoid, malaria, and capillary bronchitis.

5. The normal boundaries of absolute cardiac dullness are: (1) A line drawn from the center of the sternum, on a level with the fourth costal cartilages, to the apex of the heart; (2) a line from the same point down the left edge of the sternum; (3) a line joining the ends of (1) and (2).

The area of cardiac dullness is *increased* in: Hypertrophy of the heart, dilatation of the heart, pericardial effusion.

6. (*a*) In *enteritis* the stools are generally thin and watery, but may be pultaceous; the color varies according to the quantity of bile present; undigested food, mucus, epithelium, and microorganisms of various sorts are present.

(*b*) In *dysentery* the stools contain mucus and blood, are accompanied with much tenesmus and pain; are very small and frequent, sometimes being passed every few minutes; contain little fecal matter; contain the *Ameba dysenteriæ* or Shiga's bacillus.

7. (*a*) *Bronchial breathing* may indicate consolidation of the lung, or a large cavity communicating with a bronchus; it is heard in phthisis, lobar pneumonia, and hemorrhagic infarction; it is also heard normally over the trachea and large bronchi.

(*b*) *Crepitant râles* may indicate the first stage of lobar pneumonia, or pulmonary edema and atelectasis.

(*c*) *Vesicular breathing* may be "compensatory" when the other lung is out of use; it may indicate emphysema, bronchitis, phthisis, defective lung expansion, pleuritic effusion; it is also heard normally over a large portion of the chest.

8. *Gastric ulcer* is generally caused by injury or bacteria; is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating; hematemesis is common, there is localized tenderness over the stomach,

and examination shows an excess of free HCl.

Cancer of the stomach does not usually occur before forty years of age, is more common in males, the pain is localized and constant, vomiting is copious and occurs some time after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; severe anemia and cachexia are also present.

In *stenosis of the pyloric end of the stomach* there will be found a distended stomach; there is vomiting at long intervals, the vomitus being copious and consisting of stagnant fluid with undigested particles of food; the *Sarcina ventriculi* and many bacteria may be present.

11. *Topography of the valves of the heart on the chest wall*: "The *right auriculo-ventricular valves* are situated behind the sternum above the level of the fourth costal cartilage; the *left auriculo-ventricular valves* are opposite the third intercostal space, about one inch to the left of the sternum; the cusps of these valves extend as low as the fifth costal cartilage. The *pulmonary valves* lie immediately behind the junction of the third left costal cartilage with the sternum; the *aortic valves* are behind the upper border of the third intercostal space just at the left side of the sternum." (Holden.)

A mitral obstructive murmur is loudest at the apex.

15. (*a*) In *chlorosis* a blood examination shows marked diminution of hemoglobin, slight diminution of red cells, poikilocytosis, and in severe cases nucleated red cells. The diagnosis is certain.

(*b*) In *appendicitis* leucocytosis is fairly constant, except in the mildest and most severe cases. The blood examination will differentiate this condition from typhoid. It is a help in diagnosis, but not absolutely certain.

(*c*) In *trichinosis* there is a leucocytosis with a very pronounced eosinophilia. It is of great diagnostic value.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	April	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April	7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	10
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia.	W. C. Woodward, Washington	Washington	April	14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April	13
Georgia	E. R. Anthony, Griffin	Atlanta	May	—
Idaho	J. L. Conant, Jr., Genessee	Boise	April	7
Illinois	J. A. Egan, Springfield	Chicago	April	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March	—
Kansas	T. E. Raines, Concordia	Topeka	Feb.	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm. J. Maybury, Saco	Portland	March	17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	10
Michigan	B. D Harison, 205 Whitney Building, Detroit	Detroit	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City / St. Louis	April	
Montana*	Wm. C. Riddell, Helena	Helena	April	7
Nebraska	E. J. C. Sward, Oakland	Lincoln	Feb.	5
Nevada	S. L. Lee, Carson City	Carson City	Feb.	3
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	B. D. Black, East Las Vegas	Santa Fe	June	1
New York	C.F.Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Feb.	4
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Guthrie		
Oregon	B. E. Miller, Portland	Portland	May	—
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June	—
Rhode Island	G. T. Swartz, Providence	Providence	April	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Mitchell	July	8
Tennessee*	T. J. Happel, Trenton	Memphis / Nashville / Knoxville	May	—
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	April	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Laramie	Feb.	12

* No Reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Treatment of Perianal and Perirectal Abscesses.—E. H. Thrailkill says that the physician should never take a patient's diagnosis for a disease of the rectum, but examine him thoroughly before treatment is instituted. As much antiseptic precaution should be employed here as in surgery of other parts of the body. A straight bistoury is preferable to a curved one, because the surgeon can be more certain as to the exact location of its point. The incison should be wider than the widest portion of the induration or abscess. A curette should never be used in cleaning out these abscess cavities owing to the danger of opening up a new field for bacterial invasion. The abscess cavity should be packed firmly at the first dressing to prevent subsequent hemorrhage. The patient should be well nourished and allowed the freedom of his room as early as possible.—*The Journal of the Kansas City Medical Society.*

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending January 24, 1908:

			CASES.	DEATHS.
SMALLPOX—UNITED STATES.				
Alabama, Mobile	Jan.	4–11	2	..
"	Jan.	1–14	10	..
Mobile County	Jan.	1–14	9	..
California, Oakland	Dec.	1–31	24	..
Los Angeles	Dec.	23–Jan. 4	11	..
Connecticut, New Britain	Dec.	1–30	1	..
District of Columbia, Washington	Jan.	4–11	2	..
Illinois, Jacksonville	Jan.	4–11	3	..
Indiana, Elkhart	Jan.	4–11	2	..
Indianapolis	Jan.	5–12	2	..
La Fayette	Jan.	6–13	1	..
Kansas, Wichita	Jan.	4–11	12	..
Louisiana, New Orleans	Jan.	4–11	6	..
Michigan, Grand Rapids	Jan.	4–11	1	..
Saginaw	Dec.	29–Jan. 11	23	..
Missouri, St. Louis	Jan.	4–11	3	..
New York, Niagara Falls	Jan.	4–11	1	..
New York	Jan.	4–11	2	..
North Carolina, Greensboro	Jan.	4–11	9	..
Ohio, Cincinnati	Dec.	27–Jan. 10	7	..
Dayton	Jan.	4–11	3	..
South Dakota, Sioux Falls	Jan.	3–10	9	..
Tennessee, Knoxville	Dec.	28–Jan. 11	7	..
Nashville	Jan.	4–11	14	..
Texas, Houston	Jan.	1–11	3	..
San Antonio	Jan.	4–11	2	..
Utah, 27 Counties	Dec.	1–30	48	1
Washington, Spokane	Dec.	28–Jan. 4	1	..
Wisconsin, La Crosse	Jan	4–11	2	..
Milwaukee	Dec.	21–Jan. 11	4	..
SMALLPOX—FOREIGN.				
Brazil, Para	Dec.	21–28	10	4
Rio de Janeiro	Dec.	8–15	33	9
China, Hongkong	Nov.	16–23	1	1
Shanghai	Dec.	1–15	5 cases among Europeans and 17 deaths among natives.	
Ecuador, Guayaquil	Dec.	15–21	..	2
France, Marseille	Dec.	1–31	..	9
Great Britain, Leith	Dec.	22–28	1	..
India, Bombay	Dec.	10–17	..	5
Calcutta	Nov.	30–17	..	3
Italy, General	Dec.	19–26	52	..
Java, Batavia	Nov.	30–Dec. 7	3	1
Russia, Moscow	Dec.	14–21	7	3
Odessa	Dec.	14–21	2	..
Spain, Denia	Dec.	21–28	4	..
Vigo	Dec.	21–28	..	2
Venezuela, *Caracas	To Jan. 3		3,000	Estimated
La Guaira	To Jan. 3		25	"

* 275 cases and 5 deaths reported Dec. 13 as yellow fever should have been included under smallpox.

YELLOW FEVER.				
Brazil, Para	Dec.	21–28	16	8
Cuba, Habana Prov., Guanamon	Jan.	16–19	2	1
Santa Clara Prince, Cienfuegos	Jan.	17–20	3	2
Palmira	Dec	31–Jan. 19	3	1
Ecuador, Guayaquil	Dec.	14–21	..	1
CHOLERA—INSULAR.				
Philippine Islands, Manila	Nov.	21–28	8	8
"	Nov.	28–Dec. 7	3	2
CHOLERA—FOREIGN.				
India, Bombay	Dec.	10–17	..	2
Calcutta	Nov.	28–Dec. 7	..	262
Madras	Dec.	7–13	..	4
Rangoon	Nov.	28–Dec. 7	..	15
PLAGUE.				
Brazil, Rio de Janeiro	Dec.	8–15	6	1
Egypt, Alexandria	Dec.	13–25	4	3
Diametta	Dec.	22–28	1	..
Provinces, Assiout	Dec.	19–30	21	15
Minieh	Dec.	17–30	1	..
India, Bombay	Dec.	10–17	..	11
Calcutta	Nov.	23–Dec. 7	..	39
Rangoon	Nov.	28–Dec. 7	..	5

Kanak plague erroneously reported January 17.

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Original Articles.

BLOOD REACTIONS OF INFLAMMATION; AND THE DIAGNOSTIC PREVENTION OF THE TERMINAL STAGES OF INFECTIONS OF THE APPENDIX AND GALL-BLADDER.

BY W. A. BARTLETT, M.D., AND E. E. SMITH, M.D.

NEW YORK.

PART I. BLOOD REACTIONS OF INFLAMMATION;* BY E. E. SMITH, M.D.

DURING active inflammatory processes a considerable number and variety of changes occur in the circulating blood. Of these, I wish at this time to consider the following: (*a*) The absolute number of leucocytes. (*b*) The relative number of polymorphonuclear leucocytes. (c) The degree of fibrin formation.

It is an established fact that many times during the active period of inflammation there is an increase in the absolute number of leucocytes in the circulating blood. This increase is known to be a reaction resulting from the production at the site of the process of positive chemotaxic substances—substances that, to employ purely physical terms, decrease the surface tension of the leucocytes, thereby bringing about their movement in the blood stream towards the source of the chemotaxic substances, namely, in the cases under consideration, towards the site of the inflammation.

Substances capable of producing positive chemotaxis may be derived, under the conditions we are considering, from at least two sources: First, from the tissue cells, where the production is a result of the defensive reaction to injury on the part of the cells; and, second, from infecting bacterial organisms, the exciting cause in many instances of the injury which is the occasion of the inflammatory process. The influence of the chemotaxic substances thus produced extends, in any considerable process, throughout the entire blood stream, being greater nearer the point of injury, the source of the substances in question, and becoming less as the distance from the point increases, establishing thereby a migration of the leucocytes from their more or less remote repositories and seats of origin, bringing an increased number of them into the blood stream on their way to the diseased tissue; that is to say, producing an absolute leucocytosis.

With reference to the source of the chemotaxic substances, we may distinguish two classes of inflammation: (1) Where the substances are largely produced by the defending tissue cells. (2) Where the cells and invading bacteria both contribute materially to their production.

As an example of the first class, I will mention the exudative stage of inflammation in an active appendicitis. Here we have a rudimentary organ many times suffering a maximum of injury from a minimum of bacterial invasion, in which the tissue reaction is out of proportion to the extent of bacterial growth and production. It is fair to believe that in this case the chemical substances calling forth the leucocytes are almost wholly the product of the defending tissue cells. If, however, in the example cited, the tissue cells had been so wanting in vitality as to be incapable of defense the bacterial invasion would have predominated and a degree of injury to the tissue cells resulted such as would produce death of tissue instead of calling forth the process of defense. The same result might follow an unusually virulent bacterial invasion, even though the initial vigor of the tissue cells be not impaired. In either case, if the tissue cells be overcome, gangrene instead of defensive inflammatory changes results and the production of chemotaxic substances and accordingly the calling forth of an absolute leucocytosis by the tissue cells is proportionately wanting. Such leucocytosis as is produced is to be attributed largely to the production of chemotaxic substances by the bacteria and by the active process in the zone of slight exudative inflammation at the border of the gangrenous area. Under these conditions the calling forth of an absolute leucocytosis is less marked than in an active inflammation.

This pathological picture and the expected findings as to the existence of an absolute leucocytosis in the class of cases cited are in entire agreement with clinical experience. In an active process there is a high leucocyte count in proportion to the degree of activity; in the less active gangrene the leucocytes are increased to a lesser degree. While in these cases the bacterial growth is inconsiderable, and hence their production of chemotaxic substances is probably much less than that of the tissue cells, in some processes, as for example a lobar pneumonia, we may believe that the part played by the bacteria is more considerable, proportional to the greater growth of bacteria. This, as well as the extent of tissue involvement, appears to explain the high absolute leucocytosis in such conditions.

In considering the increase in the number of leucocytes in the blood, it must not be overlooked that generally there is an accompanying increase of leucocyte formation by the blood-producing organs. Moderate temporary changes in the number of leucocytes may at times be regarded as merely a redistribution of the leucocytes of the body, but any considerable numerical increase, especially if continuing for some time, is certainly accompanied by an increased formation of these blood elements. As to the factors operative in bringing about this increased formation we have no certain knowledge. Doubtless the forces normally operative are stimulated to increased

*Read before the Medical Association of the Greater City of New York, December 16, 1907.

activity by the rapid withdrawal of the morphological products from the blood-forming organs and it is reasonable to suppose that additional stimulating action is exerted by the chemotaxic substances we have been considering.

The view here put forward, that leucocytosis is proportional to the active production of positive chemotaxic substance by the tissue cells and that it is not produced altogether or in most cases largely by the bacteria, explains some supposed failures of the absolute leucocyte count in diagnosis. It is occasionally noted that pus fails of recognition by this means. The reason is clear, when we consider that it is not the presence of pus that calls forth the leucocytes, nor is it the absorption of toxins with the accompanying fever. It is largely the formation of chemotaxic substances by the defending tissue cells, a process that is no longer operative when the active reaction of the tissues has ceased. Doubtless in these cases there was a leucocytosis during the formation of the pus; but the formation having ceased, the active defense with the formation of chemotaxic substances no longer continues and, accordingly, a leucocytosis is not produced. It will always be found that in such cases the pus is more or less of the stagnant variety. The failure of leucocytosis is not directly due to the walling in of the pus, but to the absence of active defense which the walled off product no longer arouses.

In the leucocytosis of inflammation there is not only an increase in the absolute number of leucocytes in the blood, but usually a change in the proportion of the different kinds of leucocytes, a change that ordinarily consists of a relative increase in the proportion of the polymorphonuclear variety. The existence of this relative increase may be regarded as of even greater diagnostic import than the absolute leuocytosis, particularly as its entire absence is much less frequent in cases presenting conditions which would be expected to call forth a blood reaction. It is evident, from the occurrence of the change, that the influence producing the absolute leucocytosis is exerted especially upon the polymorphonuclear variety, thus bringing about the relative increase in the circulation.

It has been suggested that the reason of the action upon these particular cells is because, since the chemotaxic substances act by diminishing the surface tension of the protoplasm of the cells, the relatively larger amount of protoplasm of the polymorphonuclear variety affords opportunity for a more marked effect. It is probable that this is a partial explanation only, and that the rapidity of formation is also a factor, though, as we have seen, this latter may result in part at least from the more rapid withdrawal of the polynuclear cells from the blood-forming organs because of the operation of the chemotaxic factor.

In considering the possible explanations of the relative leucocytosis without corresponding absolute increase, it has seemed to me that it is to be attributed to two causes. First, to a diminished rate of formation of the chemotaxic substance. The less activity of the diseased tissues in those inflammatory processes where the leucocytosis is more relative and less absolute is consistent with this view. Because of this and, probably, as well, because of a diminished physiological capacity of the blood-forming organs in the individual whose tissue reaction to injury is less responsive, there is less active leucocyte formation aroused by the condition. Hence, the rate of leucocyte formation is a second probable factor operating to determine the degree of absolute leucocytosis. Whatever the cause, the relative polymorphonuclear increase is a certain indication that there is a factor operative in bringing forth the leucocytes that is not physiological. Moreover, the greater the relative increase the more urgent the call of the diseased tissue; while, again, the less response by an absolute increase, the less is the injured tissue able to declare its needs.

Again, we find confirmation of this point of view in practice. If, for example, we are dealing with a diseased appendix and the blood shows a high relative polynuclear leucocytosis, say an increase above the high normal 72 per cent. to 82 per cent. or over, while the absolute number of leucocytes fails to show a corresponding increase, remaining, let us say below 15,000, then we may conclude that the injury to the tissue is severe and that we have tissue destruction rather than the active operation of defense which leads to the inflammatory tissue changes which culminate in the formation of pus. In other words, with these findings we would rightly diagnosticate a gangreous process rather than an active inflammatory defense.

A third change which the blood may undergo in inflammation is an increase in the amount of fibrin formed when the blood is removed from the body. This character is so marked, in certain cases, its detection so simple, and its indications so definite, that it is surprising that it is not more frequently considered. Indeed, it should form a part of every blood examination where inflamed tissue is to be given consideration.

We shall best appreciate its production and significance by considering the mode of formation of fibrin in the process of inflammation. Examination of tissues undergoing slight degrees of inflammation reveals little formation of fibrin. As the process reaches a more advanced stage fibrin formation is observed, but the maximum of the formation is reached only when we have inflamed serous surfaces, in which case the formation becomes relatively large and proportional to the extent of surface involved. In interstitial suppurative inflammation we have a process in which the exudate produced is rich in cells, but in which there is strong inhibition to the formation of fibrin.

Fibrin formation is due to the action of fibrin ferment on the fibrinogen of the blood. The fibrin ferment in turn is formed from its inactive precursor prothrombin or thrombogen by the activating action of thrombokinase which is liberated from the leucoctyes. The throwing into the circulation of thrombokinase, as a result of the dissolution of leucocytes, not only tends to produce fibrin in increased quantity at the site of the inflammatory process, but gives to the systemic blood in general the property of forming fibrin in increased amount. This fact affords the valuable diagnostic feature of the blood to which reference has been made. It is an index to the extent and degree of the formation of fibrinous exudate in the body.

This being the case, we should expect to find no increase of fibrin in slight localized inflammation or in suppuration, and much fibrin increase in inflammatory processes in which there is much formation of fibrinous exudate. As a matter of fact, this is precisely what we do find. In the early stage of inflammation and in uncomplicated suppuration the blood shows little or no fibrin increase. In acute peritonitis, acute articular rheumatism, acute meningitis, and in pneumonia during the formation of exudate the fibrin increase is most

marked and clearly indicates that the leucocytosis of these diseased conditions is not due to suppuration, unless, indeed, two processes be simultaneously occurring.

The value of this observation is not only to determine the character of the process in a given case, but also to diagnosticate changes that occur at different stages of a disease. Thus, when a localized inflammatory or suppurative process in the abdominal organs gives rise to a peritonitis, valuable indication of this fact is found in the developing hyperinosis, *i.e.* increased fibrin formation. By this observation we may oftentimes diagnosticate a developing peritonitis, thus obtaining the information that a relief of symptoms is due to the bursting of an abscess and not to the subsidence of the inflammatory process.

PART II. THE DIAGNOSTIC PREVENTION OF THE TERMINAL STAGES OF INFECTIONS OF THE APPENDIX AND GALL-BLADDER, BY

W. A. BARTLETT, M.D.

THE infections here to be considered are for convenience limited to the appendix and gall-bladder, although the conclusions drawn are in the main as well applicable to similar conditions in other organs. By the term terminal is meant the establishment of an empyematous or the extension of a gangrenous stage.

Upon observing the post-operative findings revealed in a ruptured empyematous appendix or a gall-bladder infection that has progressed to the general septic stage, we have all indulged in the useless regret that surgical aid was not invoked in time to avert this disaster. Such a regret, however, is not without purpose if it will but serve to remind the clinician that in the earlier stages of these infections there is a moment or a day in which a definite line of demarcation exists between the safe ground of a protected infection and the unsafe one of an unprotected one. This is the psychological moment for action; and that it is not taken advantage of by those in charge, implies that either terminal conditions were already established before the case came under observation, or, if the reverse, an incorrect interpretation of the associated symptoms is accountable for the urgency of the moment being unsuspected. This incorrect interpretation is due, as a rule, to the pitfall into which so many are led, through basing their diagnosis on the clinical findings alone; for while there are many instances, as we all know, where they are obviously indicative of an active infection, in as many they are not. The mildness of a symptom onset or, on the contrary, one that is severe, but exhibits a rapid decline, proving an unreliable test, on the one hand, even of the existence of an infection, or on the other, of the stage to which a recognized infection has progressed. Under such a policy, we constantly see a gall-bladder or appendix infection progressing to its terminals before the attendant is aware of the process with which he has been dealing, a confusing symptomatology and diagnostic indifference or ineptitude being the responsible controlling factors.

The first and most important essential to the successful conduct of these perplexing cases, then, is that the clinician should promptly determine whether the presenting symptoms are due to an active infection in either of these structures, and, if so, to differentiate its probable stage and progressiveness. With the atypical and variable characteristics of the symptoms in mind, he would indeed be reduced to the dangerous expedient of awaiting developments, if the decision of this point depended on the clinical findings solely. Fortunately it does not, as the experience of the past few years, in which the blood reactions of inflammation have been studied, justifies the clinician in looking to them for the aid he is seeking.

As an essential factor in the diagnosis of these cases, then, an hematological examination should be made immediately, coincidently with the routine physical examination of the crucial regions in the vault and floor of the abdomen. Upon these findings, respectively, with the pulse and temperature verifications, the expediency or the inexpediency of immediate operation can as a rule be safely arbitrated. With these essentials at the clinician's command, the ultimate outcome will depend upon his readiness to employ them in time, and with such frequency as the exigencies of the situation demand; which brings us to the second factor essential to the prevention of terminal conditions. This is, that the utmost promptitude should be observed in applying the diagnostic technique above stated, when confronted by any symptom group that might be associated with an abdominal infection, no manifestation being too trivial, but it deserves the full battery of the diagnostician's technique, as, until proven otherwise, this may be the danger signal, indicating an impending terminal stage. The involved structures having been so impaired by previous infections that they are no longer able to resist an additional bacterial invasion, and a destruction of tissue integrity being then imminent, the psychological moment for surgical intervention previously referred to is at hand, as it may just precede or be associated with this breakdown.

Coming now to the practical application of this technique in the diagnosis of these infections, the citation of a few experiences will, it is believed, best serve this purpose. Only those fairly typical of the infections in question have been selected, and in these, as well, the diagnostic availability of the blood reactions will be defined. Before proceeding to these considerations, however, it will be necessary to state that from the clinician's standpoint, and for working purposes, the writer's experience justifies the grouping of cases in which the blood analysis is a diagnostic factor, into the following arbitrary classification:

1. As a confirmatory diagnostic factor, to be viewed only in a corroborative sense, where the diagnosis of a terminal condition is made on the clinical findings alone.

2. As a diagnostic factor of decisive import in aiding the clinician to correctly interpret symptoms, otherwise of doubtful meaning, or to strengthen a diagnosis already made.

3. As the determining factor, enabling the clinician to diagnose an infection in its initial stages which the presenting symptoms fail to indicate.

Under the first heading are grouped only the obvious terminal stages of infections, diagnosed by the findings of a physical examination with the pulse and temperature verifications. The blood, then, is usually not relied upon as a diagnostic factor other than in a confirmatory sense. The conditions with which such analyses are associated are typically illustrative of how not to prevent such conditions. These are the botched cases, the victims of their own indifference, or of diagnostic ineptitude; and in the first can be seen how an active appendix infection advances to its terminal stage unrecognized, by the simple method of omitting any examination, blood, physical, or otherwise, the con-

ventionality of a presenting symptomatology being regarded as a test of its insignificance, and the case then being left to take care of itself.

The symptom which prompted the patient to seek medical aid comprised a middle of the night attack of vomiting and diarrhea accompanied by some pain. His illness was attributed to biliousness. Satisfied with a cursory examination, the patient was dismissed, so far as medical supervision was concerned, with the advice for him to report if necessary. He did not, for besides feeling a trifle done up, there seemed to be no reason to consult his medical adviser again. Several days later he attributed a general muscular soreness, more noticeable in the right lumbar region, to gout and proceeded, as had been his custom under such circumstances, to knock it out by rowing, sometimes covering ten miles in one spin. This failed of its purpose, as the soreness in the right lumbar region steadily increased in severity, accompanied at times by belly pain. Two weeks from the date of his bilious attack he consulted the writer.

It was found that he had a temperature of 103° and a well-defined tender mass in the right hypochondriac region. The condition was perfectly obvious, a diagnosis of a thus far walled-in appendix empyema being made on the clinical findings and an almost negative blood reaction. Appendectomy was accepted and the condition found to be as above described.

The second obvious terminal condition unrecognized in its early stages is illustrated in a gall-bladder infection, in which the operative findings revealed numerous calculi in the gall-bladder, a chronic pericholecystitis and adhesive bands embedding the gall-bladder and extending to the stomach and adjacent colon. Behind and to the right there was a small pocket of pus. The early symptoms of the infection were some gastric distress and abdominal distention. These were regarded as of trivial import at the time, and the case was dismissed without blood, physical, or other examination. The symptoms of the subsequently slowly progressing infection comprised during a period of several months two attacks of colic and vomiting, and in the interval vague gastric distress. For five weeks previous to observation there was languor, without any acute episodes. Upon a recurrence of the gastric discomfort, accompanied by a slight afternoon temperature, the patient came under observation. The physical examination revealed the presence of calculi, and an apparently thickened and tender gall-bladder. There were no additional manifestations during the ten days intervening before operation. Repeated blood examinations revealed only a moderate hyperinosis without either absolute or relative leucocytosis.

The absence of leucocytosis is consistent with the quiescent condition of the pocketed pus, there being no evidence of inflammatory defense. The increased fibrin formation indicated the formation of some fibrinous exudate, and it is fair to presume that this was a continuation of the process around the gall-bladder.

In both of these cases, the blood findings were strikingly negative, an indication that terminal conditions were already established, and that the inflammatory processes were relatively inactive. They emphasize that the blood findings are diagnostic of a process and not of an established condition.

Under the second classification, in which we find the blood findings of decisive import, two illustrations have been selected, of rapidly advancing appendix infections that were seen at the moment of a symptom declaration. This is the psychological moment above referred to. In the first instance, severe paroxysmal pain in the abdomen and vomiting were the presenting symptoms. This began in the epigastrium and transcribed the classic angle to the right, then down to the appendix region. He "knows what it is," as this is one of many attacks. Pulse and temperature being normal, and the abdomen only moderately sensitive over gall-bladder and appendix regions, the colon was flushed and developments awaited. He grew more comfortable as the day passed, and there was no further vomiting or pain, the pulse and temperature remaining normal. On the second day, although comfortable, there was some rigidity of the right rectus muscle and increased appendix sensitiveness, the pulse being 90 and the temperature 100.2°. Surgical intervention was then tentatively considered, pending further developments. A third day of comparative comfort with no vomiting spell, pulse and temperature record unchanged, and the appendix region less sensitive, seemed again to justify deferring operation. An endorsement of this attitude was found on the fourth day's record, for, although there was still a slight afternoon fever, other symptoms were absent and the patient was hungry and out of bed. The surgical possibilities were then brought to a square issue, as he announced his intention of going to business the following day. On his past record and the acute onset, however, the writer stood firm in condemnation of such a course of action, and for the purpose of still further strengthening his position a blood specimen was taken—three days too late. The findings revealed a far more urgent situation than was suspected, as the marked fibrin formation and the pathological leucocytosis of 19,000 whites and 79.4 per cent. polynuclears justified a hematological diagnosis of an active process with the involvement of the peritoneal surface. Operation was then insisted upon immediately, but it took twenty-four more valuable hours for diagnostic conviction to have its way.

A comparative transcript of his hospital entrance examination and his operative record will possibly justify the antithetical position occupied by doctor and patient in regard to the subject matter of dispute. The former states that the patient's pulse and temperature are normal, that there is no abdominal rigidity, no tenderness other than slight sensitiveness over McBurney's point. No pain. Diagnosis, acute catarrhal appendicitis. The operative findings were as follows: Advancing peritonitis, the appendix being gangrenous at its proximal end; on section abundant purulent exudate is found, the mucous membrane being entirely destroyed, and much of the wall being gangrenous. Recurrent wound infections, prolonged convalescence and subsequent hernia probably were, as is often the case, the consequences of delay.

In the second illustration, however, diagnostic perspicacity was more in evidence, with, in consequence, better results, as will be seen. The blood in this instance was taken immediately on presentation of the case, and was the first finding to confirm a mere suspicion of an active process in a man who had had a night of nausea, diarrhea, and colic. Of indulgent habits, these symptoms seemed conventional resulting episodes, but he looked ill, so he was put through the usual routine examination. Deep appendix pressure elicited complaint only at the crest of the ilium. He had no pain, and the pulse and temperature being normal, he was permitted to go

down town, but it was insisted that he be seen at his home at 5 P.M. In the meantime the blood established the significant diagnosis of "reactions of inflammation, quite likely suppurative," based on an absolute count of 15,000 leucocytes and a relative polynuclear increase of 89.4 per cent., with a slight increase in fibrin foundation. In view of this, reflex abdominal symptoms signalized something more definite than indulgent habits. At 5 P.M. he was again examined. There being no abdominal distention the appendix region could be easily manipulated. There was little actual appendix sensitiveness. Deep pressure, however, aroused the not infrequent epigastric reflex pain. The only symptoms he had noticed during the day were some indisposition to stand straight, some pain in the back and right abdomen, and anorexia. With a normal pulse and temperature of only 100°, clinically speaking, there seemed to be no cause for urgency, except for the blood findings. Further action was postponed until the following morning. When seen at 7 A.M. it was found that though he had had a restless night, he now felt better, was hungry, and could now stand straight without discomfort and no pain. The not infrequent clinical picture now presented was that, although there was an improvement in the subjective symptoms, the symptomatic essentials of an advancing infection prevailed, to wit: A slightly increased cecal tenderness, a marked abdominal reflex, when the abdomen is tapped over the appendix, and a blood reaction which, while not differing in its polynuclear proportions from the previous one, showed now a more marked fibrin increase. These findings were deemed sufficient, although the pulse and temperature remained as before, to justify immediate operation. The usual struggle between diagnostic conviction and antioperative prejudice had to be fought out, and it took three hours to finish it, as the elusive improvement in the patient's feelings were not to be swept aside by the asserted revelations of a drop of blood and the, to him, unintelligible manipulation of his abdomen. Meanwhile, time, that was of vital import in securing an uninfected wound, was passing. How important this is, the operative findings will show, as, upon reaching the appendix, a small amount of bloody serum exudes from around its base, where there is a small area of gangrene. The adjacent peritoneum has, however, thus far escaped infection. On section the lumen shows an abundant purulent exudate. Primary union was secured.

In both of these illustrations the absolute and relative leucocytosis showed an active process; a condition in accord with the clinical and abundantly confirmed by the operative findings. In both cases the degree of hyperinosis was of material import, indicating, in the first instance, the inflammatory involvement of the peritoneum, and in the second, a process extending in the same direction and which prompt operative interference enabled us to prevent.

Under the third classification is demonstrated the availability of the blood reaction in the diagnosis of the initial stages of an appendix infection.

These are the cases referred to in the foregoing remarks, where the necessity of a routine blood count is especially emphasized, as without these reactions the symptoms could easily be misinterpreted and the case in consequence be dismissed as of trivial import. A number of these manifestations can in this way occur without arousing a suspicion of the underlying cause. The prevention of the possible terminal outcome of such cases, perhaps months later, is in the clinician's hands, if the infection is thus early diagnosed, and the patient is willing to accept an operation solely as a preventive of what to him is only a possibility.

Of a number, the following has been selected, as an instance of an appendix affection where both of these conditions were complied with. The symptoms in this case were anorexia, gas eructation, and marked abdominal distention. There being no previous history of an appendix infection, and the clinical and physical findings being negative, this disturbance was attributed to a colon impaction, as he had been obstinately constipated. The routine blood count unexpectedly indicated a definite lesion, "reactions of inflammation, quite likely suppurative," being revealed by an absolute 16,000 and relative 89 per cent. leucocytosis and a moderate hyperinosis. In view of this, the gas attack assumed a different aspect. Although the gastric and intestinal reflexes ceased in forty-eight hours, for precautionary reasons the blood count was taken daily for the succeeding week. During this period there was not a symptom of the infection which the blood reactions continued to give evidence of. In the last count, however, as the hyperinosis had disappeared and the pathological leucocytosis was apparently less, the infection was not regarded at the moment as being of a progressive character. The patient's business obligations making it impossible for him to secure prompt attention in the event of an emergency, being a salesman, and appreciating the consequences of being caught en route, he readily submitted to an "interval" operation, the so-called quiescent characteristics of which are revealed in the findings as follows:

The appendix is much thickened and engorged and is surrounded by recent and old adhesions. Its lumen is filled with cheesy material. Microscopically, the effects of the recent acute process are disclosed in the thickened blood-vessels, the marked increase in submucous connective tissue, and the periglandular infiltration in which eosinophilic pus cells predominate.

The outcome of such conditions is of course problematical, whether of a terminal or involution character, but in view of the probability of its being in favor of the former it was fortunate that the symptoms were correctly interpreted, as otherwise this case might easily have been added to the number of sudden terminal emergencies which it is our duty to prevent. From the writer's standpoint, the necessity for an early operation in such cases as the above is not open to question.

STRICTURE OF THE EUSTACHIAN TUBE WITH ITS BANEFUL CONSEQUENCES TRACED TO ADHESIONS IN THE FOSSA OF ROSENMULLER.

By W. SOHIER BRYANT, A.M., M.D.

NEW YORK

While Assistant in Anatomy and Otology in the Harvard Medical School during the ten years from 1887 to 1897, I had the privilege of examining all the anatomical material there, and noted that in almost all adult subjects the fossæ of Rosenmüller were more or less obstructed. This obstruction was due sometimes to lymphoid and at other times to fibrous tissue. Of the former, the younger subjects had the greatest amount. The elder ones had less, and the aged had none at all. With increasing

age, then, it appears that the lymphoid tissue atrophies and leaves only fibrous tissue adhesions. Most of the fossæ examined were lined with a layer of lymphoid tissue, which was thickest on the posterior wall. The lymphoid obstructions in the fossæ were seen to originate from hypertrophy of the

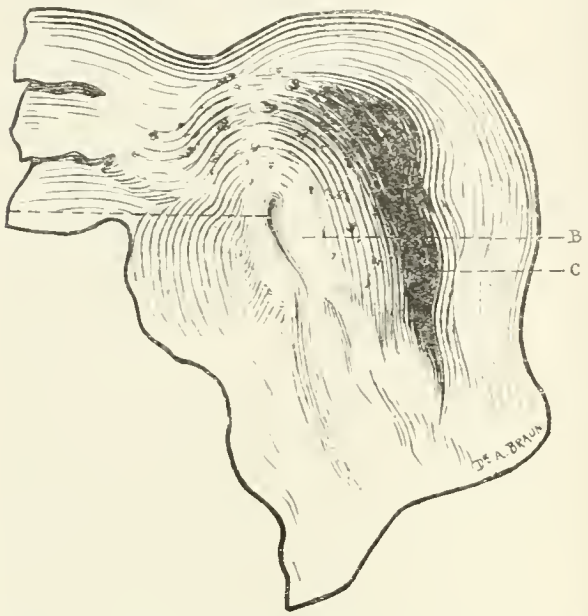

FIG. 1.—A normal right Eustachian tube and fossa of Rosenmuller.

lymphoid lining which either obliterated the fossæ to a greater or lesses degree or bridged them over. The obliteration, whether partial or total, was caused either by filling the fossa from the fundus or by adhesions between the anterior and posterior surfaces across an abnormally narrow fossa. These adhesions varied greatly in friability; some could be broken down easily with the fingers; others resisted all efforts at rupture. Their location also varied, but, on the whole, they were most abundant either at the fundus of the fossa or at the superior commissure. As before stated, at a more advanced age, with the disappearance of the lymphoid adhesions, the fibrous tissue connections alone are left. These may vary in density from a very fragile thread to a thick band of almost tendinous rigidity. They may occur anywhere, but are most abundant at the upper commissure. The fibrous tissue adhesions may form a cribriform network or they may exist as distinct bands which are apt to run from the tubal side upward and backward, less often downward and backward. Syphilitic, diphtheritic, or other ulcerations rarely cause obliterating cicatrices in these fossæ.

Though the presence of these adherent bands in the fossa of Rosenmüller had been noted by me for the last twenty years, their clinical significance did not become known to me until three years ago. At that time the use of the salpingoscope made clear to my mind the relationship which these obstructions bear to the function of the Eustachian tube. The presence of a large quantity of lymphoid tissue in the fossa is often associated with changes in the middle ear similar to those occurring in extensive lymphoid hypertrophy of the nasopharnyx. They are due to manumetric and drainage disturbances resulting in congestion, infection, and later atrophy. The pathological condition found in the middle ear when fibrous bands form in the fossa of Rosenmüller is usually of the kind classified under otitis media catarrhalis chronica.

The mass of lymphoid tissue in the fossa tends to imperfect patency of the Eustachian tube, thus preventing normal drainage and ventilation of the middle ear. This is due to the impossibility of properly opening the tube when the fossa is filled, since the mass interferes with the backward motion of the cartilage necessary for physiological opening of the tube.* The result is the same as if a mass of adenoids in the nasopharynx caused obstruction of the tube. There is always a slight amount of opening as a result of the stiffening and retraction of the anterior and membranous wall of the tube due to contractions of the tensor palati muscle; but this is not sufficient to produce a free tube in these cases, especially when there is much swelling of the lining membrane of the tube.

The fibrous tissue connections also lead to closure of the tube, but only indirectly. In this case, contraction of the fibrous bands pulls the cartilage from its normal position backward toward the posterior wall of the fossa, thus preventing the normal closure of the tube. This position of extension is necessarily constant, because there is not a sufficiently strong muscular apparatus for closing the tube. Since the tube is held open in this way, the normal apposition of its anterior and posterior inner surfaces does not occur, as it naturally would during rest. Consequently the lining of the tube becomes engorged by venous and lymphatic congestion, which results in the closure of the tube, not at the pharyngeal orifice, but at a slight distance from it. The salpingoscope shows us the obstruction in the fossa and the tubal cartilage approaching abnormally near the posterior pharyngeal wall. The pharyngeal mouth of the tube appears to have the triangular conformation of the normal open tube instead of the slit-like form characteristic of the normal orifice when at rest. However, there is this difference: The lumen of the normal open tube appears to extend well beyond the range of vision;

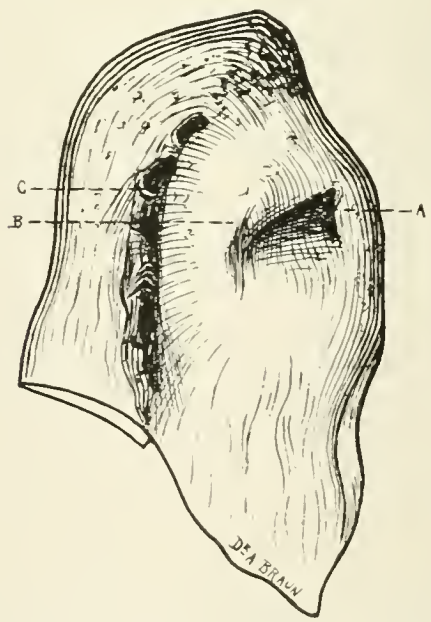

FIG. 2.—The left Eustachian tube held open at its mouth by the bands of adhesions in the fossa of Rosenmuller. The tube is closed by collapse of its walls at a short distance from the pharyngeal orifice.

while in this abnormal condition the lumen extends but a short distance inwards, and is obstructed by the apposition of the mucous membrane lining.

This closure of the tube, which has for a number

*Sohier Bryant: "The Eustachian Tube, Its Anatomy and Its Movements," etc. MEDICAL RECORD, Vol. 71, No. 23, p. 931, June, 1907.

of years been called stricture of the Eustachian tube, is followed by all of the evils, both pneumatic, trophic, and infectious which occur in a middle ear shut off by a chronically closed tube. The results of tubal stricture are well recognized. They comprise the most obstinate forms of middle-ear catarrh with tinnitus, deafness, and the multitude of disagreeable symptoms dependent upon the changes in the middle ear. The tubal stricture, moreover, is one of the most, if not the most important factor in determining middle-ear infections and the severity of their course. Middle-ear infections rarely go on to suppuration when the tube is patent, and they do not cause mastoiditis or any of the dangerous complications following osteitis of the mastoid process.

Diagnosis.—Either the finger or the salpingoscope can be used to make the diagnosis. The latter, however, is preferable, since it will show how much the movement of the tube or its normal lumen are interfered with. The tube should be watched while the patient swallows, and the movements of

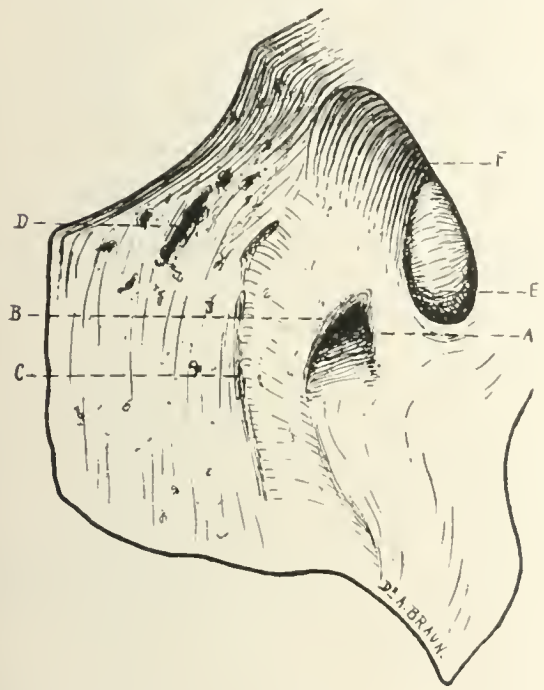

FIG. 3.—The pharyngeal mouth of the left tube held open by the obliteration of the fossa of Rosenmüller; A, pharyngeal ostium of Eustachian tube; B, torus tubæ Eustachii; C, fossa of Rosenmüller; D, pharyngeal bursa; E, posterior end of lower turbinal; F, nasal septum.

the cartilage scrutinized to see if there is any impediment in the fossa of Rosenmüller.

Treatment.—Early treatment of the obstruction of the fossæ is indicated as soon as the diagnosis is made. The disturbances in the middle ear, which are caused by the pathological conditions in the fossæ will then yield more readily to appropriate treatment. The results are infinitely more satisfactory than when the fossa is neglected altogether, since an amelioration of the aural condition invariably follows restoration of the function of the tubal mouth and fossa of Rosenmüller. The preliminary treatment of the middle ear condition consists in removing with the curette any lymphoid tissue present. The adhesions which obstruct the fossa must be broken down. The more delicate fibers readily give way to the fingers; the more resistant ones can sometimes be torn with the finger, but occasionally they are so dense that cutting is necessary. Often this process of rupturing adhesions whether done with the finger or with the knife, must be repeated a number of times, and silver nitrate applied until the mucous membrane has healed and is free from adhesions.

Conclusions.—(1) The fossæ of Rosenmüller are subject to obstructions and adhesions which interfere with the physiological action of the Eustachian tube through imperfect movements of the tubal cartilage, resulting in stricture of the Eustachian tube.

(2) This can de demonstrated by the use of a salpingoscope.

(3) Relief from this impediment allows of more effective treatment of the middle-ear condition.

THE ORGANIC FACTOR IN HIGH BLOOD PRESSURE.

BY ALEXANDER HAIG, M.A., M.D., OXON.

LONDON.

IN Volume 89 of the Transactions of the Royal Medical and Chirurgical Society there is a paper of mine on "Capillary Circulation and Blood Pressure and the Conditions that Control Them." In my reply on the discussion of this paper I point out, as I had already done in previous writings, that nothing which I claim for the influence of uric acid on capillary circulation and blood pressure is to be taken as excluding the undoubted power of the nerves to contract the arterioles and thus aid in raising blood pressure.

My position has always been this: Uric acid has a great effect on capillary circulation and blood pressure* and it is a factor which it is comparatively easy to control either by diet or by drugs. Let us do what we can to control it and see what is left. I also pointed out that to some extent it is possible to distinguish between the blood pressure which is due to obstruction of capillaries by uric acid and that caused by irritation of a sensory nerve.

My attention was directed to this point some years ago by observing that a patient, who had a gastric ulcer, which had produced a slight hematemesis and a rise of temperature, had a blood pressure out of its normal relation to the capillary reflux.† The capillary reflux was somewhat quick, owing to the rise of temperature, so that looking to the reflux alone I should have expected a normal or subnormal blood pressure. But the pressure was raised to 140, and rose a little above this with an increase of abdominal pain. Here we had clearly to deal with the result of irritation of a visceral nerve, and the blood pressure did not bear its usual relation to the rate of the capillary reflux. I have seen the same thing in other conditions of local pain, *e. g.* that met with in connection with the nerves of the teeth.

I believe then that local lesions, especially those of the abdominal viscera, do produce a rise of blood pressure by contraction of the arterioles, and that a further rise of blood pressure is produced over and above this by excess of uric acid obstructing the capillaries.

In lead colic, for instance, we may have both these causes in action, visceral pain and excess of uric acid in the blood as a result of the dyspepsia. And

*I have suggested that it blocks the capillaries, others suggest that it contracts the arterioles; this does not at present concern us.

†The rule is capillary reflex × 20 = corresponding blood pressure: *e.g.* C. R. 5-6 (half seconds) = B. P. 100-120 mm. of Hg. (C. R. calculated in ½ seconds of time and B. P. in mm. of mercury.)

the same may hold in quite a number of other troubles, the part due to uric acid being removable, the organic factor being sometimes removable as in lead colic, in other cases (*e. g.* chronic irritation, ulceration, or adhesions between abdominal viscera) not removable.

If the organic factor is due to the local irritation of uric acid then it is removable, at least in part, but if it is an old scar in joints, heart, or abdominal viscera then it may not be removable and a complete reduction of blood pressure may not be possible.

Even here, however, uric acid removal may cause much improvement, as every old scar is irritated by it, if complete cure is impossible.

I am in the habit of telling patients that they must not expect miracles, that diet will not remove a lamp post or a five-barred gate, but that it can be tried without danger if they can take proper quantities of food, and then the result will show how much was organic and how much functional.

The great characteristic of the headache and depression that are due to uric acid is that they are periodic, and between times blood pressure may be quite normal. When any of these troubles are chronic and continuous there is probably an important organic factor.

As to periodic headache, it is generally relieved by diet, and the blood pressure is reduced to a considerable extent, often to normal, except for one or two days in a year, and the same applies to periodic depression. Thus a patient in middle life suffering from mental depression has been several years on diet and considers himself cured, his blood pressure is lower than it was but is still often 10 to 20 above normal; possibly there is an organic factor still left in him (*e. g.* gastric or abdominal irritation of some kind such as an old ulcer adhesion or scar might produce).

Still uric acid and uric acid alone will apparently produce very high blood pressure, *e. g.* that of Bright's disease, which can often be reduced to nearly normal in a few weeks, with a corresponding quickening of the capillary reflux and a clearing of uric acid out of the blood and urine, and all these things go together; no one can be produced without the others. If the blood is not cleared of uric acid the reflux does not quicken and the pressure does not fall.

But, if it gets time to act, diet does the same thing, only more gradually, as one would expect; the quantity of uric acid in the blood is slowly reduced and all the other things altered in proportion.

Again there can hardly be any room for doubt that the diurnal fluctuations of blood pressure are due to uric acid, for they are to be met with both in physiology and pathology, and in both they are to a large extent controllable by measures affecting uric acid, so much so that they can often be made to vary in either direction at pleasure.

Even if we have to deal with a definite organic factor, *e. g.* a gastric ulcer or an abdominal adhesion, there is no reason why this should produce less effect in the evening and more in the morning when digestive function and activity are common to both times. If, say, the organic lesion accounts for a blood pressure of 130 this may be increased to 150 in the morning with more uric acid and diminished to 130 or 140 in the evening with less.

Again, as I have before said, if the phenomena of Raynaud's disease are due to contraction of arterioles it is difficult to believe that any arterioles can remain contracted until the part passes into gangrene. If, however, the stoppage of circulation is due to uric acid mechanically blocking the capillaries, there will of necessity be more and more colloid uric acid thrown out as the circulation slackens and the part becomes cold. This action of cold as a precipitant of uric acid will also account for the limitation of Raynaud's disease to surfaces and extremities.

It is quite common for those who suffer from chilblains to get free from them, even after twelve months on diet, and if they at any time take uric-acid-bearing foods again, the chilblains are among the first things to return.

It seems to me, then, that the organic factor cannot possibly account for all the phenomena, nor does it in any way account for the influence of drugs on the one hand or of diet on the other; for the only factor common to both these is their influence on the quantity of uric acid in the blood and tissues. Everything that clears the blood of uric acid produces one effect, everything that floods it with uric acid produces the other: *e. g.* a salicylate will at any time alter a reflux from 5 to 8. There is no doubt that diet has cured such periodic troubles in hundreds and hundreds of cases, yet this effect is more certain and the result more complete in the young before definite visceral lesions are produced; but even some of these lesions (*e. g.* in joints, heart, and abdominal viscera) may apparently be diminished, and the irritation in them reduced, as the diet is continued year after year.

The conclusion is, I think, that high blood pressure may be due to uric acid or to an organic factor or to both in varying proportions. In all cases (if there is time) the uric acid factor is removable; and the organic factor, if due to uric acid, is also to some extent removable.

The capillary reflux and the blood pressure alter from day to day and hour to hour with the amount of uric acid passing through the blood; but there are undoubtedly other factors which influence blood pressure, and these may or may not be altered by treating uric acid.

By acting on these indications we can in many cases get an answer to important problems affecting the causation of circulation diseases. I should never claim anything as the effect of uric acid which diet will neither prevent nor cure.

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INCIPIENCY IN TUBERCULOSIS FROM THE STANDPOINT OF SANATORIA.

THE SAFETY AND THE VALUE OF THE TUBERCULIN TEST WHEN SAFEGUARDED SOLELY BY THE CLINICAL METHOD.

By HENRY B. DUNHAM, M.D.,

GLEN GARDNER, N. J.

RECENTLY PHYSICIAN MASSACHUSETTS STATE SANATORIUM; ASSISTANT CHIEF PHYSICIAN NEW JERSEY SANATORIUM FOR TUBERCULOUS DISEASES.

The prevalence of tuberculosis and the Profession's ignorance of its commencement in almost all the cases that occur can be shown best by citing statistics from States having sanatoria. There are, presumably, as many as 15,000 cases of tuberculosis in Massachusetts. In the reports received by the investigating Commission,[1] 7,779 consumptives were positively accounted for within the State, but if these were all, then less than half of those afflicted would survive a year, as the latest death-rate is 4,702.[2] It would be impossible to determine how many more than 4,702 cases originate each year in

Massachusetts, but that many are required to supply the annual deaths at home. Those who may die in other States and climates and those who recover either at home or abroad, are not included in the above estimate of those who contract the disease in a single State. Among the 7,779 consumptives who were reported to the Commission, 2,792 were designated by physicians as "slightly ill" and "feeling able to work."

With conditions existing as stated, does it not seem strange that a State institution, accommodating 350 patients, upon which the people gladly expend vast sums to assist it in effecting recoveries should barely be able to fill one-third of its beds with slightly affected cases?

At the Massachusetts State Sanatorium 75 per cent. of the patients with incipient disease recover, and they rarely relapse. Is it not unfortunate that circumstances should cause 400 of those who develop the disease every month, to ignore absolutely, or invariably until too late, such an available means of treatment, especially as no other treatment is undertaken which suffices to prevent a fatal termination?

The reduction in the death-rate from tuberculosis since 1881 has been continuous, but thousands of lives are still lost yearly. If a special effort should be made by physicians, might not the disease be detected and receive treatment in its incipiency in perhaps one-sixth of the, at present fatal, cases? If this were done Massachusetts could care for its proportion of cases with its present equipment.

No State sanatorium has as yet been furnished with incipient tuberculosis to its full capacity, and the curable cases take precedence over all others seeking admission. Eighteen States will have sanatoria in 1908, and patients with incipient tuberculosis will be required that these institutions may accomplish their highest end.

At present every State sanatorium is in advance of the willingness or ability of both the people and the profession to supply it with incipient tuberculosis. The superintendent of the Rhode Island Sanatorium deplores this state of affairs as follows:[3] "If the number of curable cases which a sanatorium receives is small, its usefulness is correspondingly limited, and our professional pride should not allow the willingness of the State to finance the treatment of curable cases to surpass our ability to furnish the cases."

The willingness of the State has nevertheless surpassed the ability of the profession in Massachusetts, New York and Rhode Island since the erection of their respective sanatoria. The superintendent of the New York institution makes this statement in his official report:[4]

"As a result of two and one-half years' actual experience at this hospital, I find that incipient disease is practically unknown to the profession save to those actually engaged in special work along this line."

The number of new cases of Tuberculosis Pulmonalis reported December 7, 1907, to the Sanitary Bureau, Health Department, New York City, was over double that of the deaths occurring in the same week.

As in New York State 14,000 deaths occur annually from consumption, it may be assumed that twice 14,000 patients could be reported as contracting the disease in the same time; nevertheless, fifty beds (out of a total of only two hundred) remain empty at the State Hospital, Raybrook, because it is impossible to obtain that number of patients with incipient disease.

In the New Jersey Sanatorium, at the present writing, less than 13 per cent. of the patients have incipient disease, the average duration of symptoms is reckoned in years, many have marked febrility with advanced processes, and a few, in addition, ulcerated larynges.

These apparently were the best obtainable cases, with inability to pay constituting not the slightest bar to admission. Each applicant has to be certified by his examiner, as having "tuberculous disease of a curable nature." There are more official examiners in New Jersey than in other States having sanatoria, and 66 per cent. of all applicants so far have been accepted. About 45 per cent. are taken in Massachusetts, while in New York, at the Department of Health Clinic, 16 per cent. were accepted, and in Buffalo the examiner, Dr. Pryor, recommended only abut 7 per cent. of those applying for Raybrook.[4]

In Rhode Island,[3] 50.9 per cent. of about two hundred consecutive cases admitted to their institution had delayed an average of 7.9 months after the onset of symptoms before consulting a physician, most of the remainder, or 46 per cent., had consulted a physician some time after the symptoms had been in progress two months, received an incorrect diagnosis, and, as a result, waited an average of 11.3 months before the presence of tuberculosis was established and proper treatment prescribed. The results of treatment, as might be expected, were more unfavorable with the latter set. From these statistics of Dr. Barnes we can deduct the following charitable conclusions: A patient, suspected of having tuberculosis, who is put off until "another time" will probably have too well marked disease when the evidence, not at first eagerly sought, pronounces itself. A person with tuberculosis who thinks he has been passed upon as sound, will cling to that impression for months after the individual without that impression has become quite certain of the character of his symptoms.

The patient with tuberculosis is greatly to be blamed for not early seeking medical advice: but when physicians are actually confronted with the opportunity, they often fail to make an early diagnosis of tuberculosis. Why is this? The literature pointing out the way is voluminous, and I am not referring to some subtle "pre-tuberculous" state; nor do the reports of professional inadequacy quoted owe their existence to the specialists' too exalted viewpoint in regard to incipiency; on the contrary, ordinary sanatorium incipient cases can be diagnosed in the majority of instances merely by careful attention to the history and symptoms of the patients, as described by Otis.[5] *Anything abnormal* in the apex of a lung is of itself enough to warrant a tentative diagnosis which can be definitely settled by tuberculin, preferably after the patient has started treatment. The type of "incipient" tuberculosis which is received for treatment at Rutland can be diagnosed in 66 per cent. of the cases without recourse to other data than that derived from examinations of the sputum.

This statement is not intended to encourage too long delays for a positive report on sputum, but is made chiefly to show clearly that, in seeking patients in the "incipient" stage, sanatoria are not asking physicians to draw unduly upon their imagination, nor to decide recommendations offhand upon general principles.

At Rutland, the diagnostic use of tuberculin has been found to be a requisite in the establishment of a positive diagnosis in less than one-sixth of the cases there classified as incipient. That sanatoria

should receive a greater number of cases in which the resort to tuberculin becomes a more common necessity, is beyond refutation. Tuberculin as a diagnostic agent should also be more generally employed. Before coming out, however, too strongly on this aspect of remedial possibilities, let us not forget that nearly five thousand doomed to die yearly of tuberculosis in a model State, like Massachusetts, certainly receive no diagnosis which exerts a nullifying influence upon that ultimate result; when at this stage of medical progress it might be expected that without assistance from tuberculin a large number of these victims should have had their disease known by its symptoms and under treatment early enough to effect a material reduction in the quoted death rate. It is certainly true that our opportunities for successful treatment exceed our capacity for complying with the treatment's conditions of success.

If general practitioners and specialists of all branches of medicine everywhere, could only develop an alertness to tuberculosis which is the prime requisite for the intelligent use of tuberculin, then indeed the State and perhaps the National government might be taxed to its utmost in an endeavor to keep pace with the profession and its auxiliaries.

The sanatorium might then be succeeded by influential employment bureaus which could, for instance, among other things entailing no further expense, doubtless make the present Rural Free Delivery System add much to its sphere of usefulness.

Let us hasten the time when tuberculin will become a more commonly used agent in diagnosis. The diagnosis of tuberculosis by means of tuberculin is becoming more than ever available to the general practitioner. Calmette's method,[6] through application of the opthalmo-reaction, furnishes what has long been needed, a simple and readily available test which, even if not absolutely conclusive in every case, can prepare the way for more exhaustive measures when the results with it are negative.

One drop of a 1 per cent. solution, or less at first, of purified tuberculin (Tuberculin precipitatum) is instilled into the conjunctival sac of the patient's eye. If the patient is tuberculous, a decided congestion and a watery and serofibrinous exudate occurs between three and twenty-four hours later. The larger experience of others as well as a few tests of my own have given almost uniformly positive results in cases of definite tuberculosis, and without reactions occurring in the presumably well. The percentage of error is probably a little more than with tuberculin used hypodermically. Until the experience with it covers very many more cases than at present, it would be wise to use tuberculin in the usual manner after all negative instillations, when the symptoms still point to the possible existence of the disease. When this is done the initial dose injected need not be as small as would otherwise be deemed advisable. Opportunities for inaccuracy and carelessness in the hypodermic method of administration are plentiful, but not more so than with many, now familiar, painstaking medical accomplishments. When properly administered tuberculin is a thoroughly reliable means of obtaining evidence of tuberculosis and when cases are selected carefully it is perfectly harmless. A report of my experience with it at Rutland should serve to strengthen this statement and also be a step toward answering questions which have some bearing upon the practical use of this valuable diagnostic aid. During the past year the great impetus to tuberculin therapy given by Trudeau has been shared somewhat by the same agent applied diagnosticaliy. There is no doubt but that those who formerly opposed its use did so largely owing to the "difficulty of obtaining a reliable product,"[7] or because "unconvinced of its innocuousness."[8] An increasing demand and added experience have practically done away with the first objection, and its successful use in the therapeutic field has helped to do away with the second.

With many earlier writers[9] on the diagnostic use of tuberculin, there was a prevalent opinion that the tolerance produced by very small repeated injections interfered with its reacting qualities and that a reaction might be absent or not nearly as distinct and decisive as when only a few larger size doses were administered. The dosage which is at present recommended and satisfactorily employed by almost all observers[10] at the commencement is very small. A fraction of a milligram which is often cautiously repeated[11] before an increased dose is injected. That a tolerance to tuberculin is nevertheless easily established is a fact familiar to all, as it is upon this possibility that its therapeutic use depends.

It will now seem paradoxical to state that tuberculin has a marked cumulative property,[12] and that this sometimes even shows itself suddenly when it is being administered for the purpose of immunization, as in the hypersensitive cases described by Trudeau.[13] It is a well-known fact that the same dose of tuberculin which has been found insufficient at first to produce a reaction, when repeated may cause a marked reaction.

It would be well if we could always tell in the diagnostic administration just when and at what point the cumulative tendency ceases and tolerance begins. Theoretically it is the overlapping of negative phases which constitutes the cumulative effect and if it were always possible to obtain easily a correct opsonic index to tubercle bacilli, the border line between these opposite effects of tuberculin could doubtless be drawn in all cases. Opsonic work requires much time, and as there seems to be a doubt as to the possibility of complete accuracy[14] with this particular subdivision of opsonic work as at present developed, interest must still cling to the clinical method[15] in all tuberculin administration.

In order to give an idea of what can be accomplished by clinical methods in the selection of cases suitable for receiving large doses of tuberculin, the following experience with tuberculin in the earlier cases at the Massachusetts State Sanatorium is given. The incentive for painstaking care in the selection of these patients can be best understood by stating that each patient received but one dose of tuberculin and that dose was 10 milligrams.

The deviation from the accepted method (that of administering gradually ascending doses up from a fraction of a milligram) was not owing to the absence of a proper spirit of caution, but came as the result of our experience with the first patients to receive tuberculin at Rutland, who from hearsay evidence were filled with distrust of the agent, and usually refused their consent to more than one injection. At one time it was in many cases impossible to obtain consent to even an initial dose, some patients preferring discharge to submission to a single injection. Since the successful use in later years of tuberculin as a therapeutic agent, consent to the test has been easily obtained and the graduated increase of the injections up from small amounts has been a much more general procedure. Patients with plenty of evidence of the disease may show reactions to an initial therapeutic dose of 1-100 or even 1-500 mg.[12]

The circumstances stated, which induced the administration of a large single dose of this diagnostic agent, also induced the physician to exhaust with the greatest care every other means of diagnosis, and encouraged especial thoroughness with both the physical and microscopical examinations. Patients having evident and definite physical signs at the apex of a lung would seldom receive a dose of tuberculin, and never a dose of large size.

In a few cases not mentioned in this tabulation, trust was placed in the establishment of the diagnosis by a smaller single dose. This was on account of the presence of more pronounced symptoms demanding greater caution in the exhibition of the agent. From the opening of the sanatorium in October, 1898, to June, 1907, while the writer was resident assistant to Drs. Bowditch or Otis, tuberculin was given diagnostically in initial maximum (10 mg.) doses, to 167 patients; reactions followed in 100, no reactions in 67. The per cent. of positives was 69.9; of negatives, 40.1.

Two of the number above, who failed to react, gave a little sputum, just before the injection with tuberculin, in which a few tubercle bacilli were found. There was no sputum obtained after this from these two people. One other patient, giving a history of rather large hemoptysis, without cardiac murmur or other assignable cause than tuberculosis, gave no evidence of a reaction to this dose of 10 mg.

In measuring the doses of tuberculin the greatest care was exercised to insure accuracy. The tuberculin was weighed and then diluted with sterile water to make a solution of such strength that each minim contained one milligram of tuberculin. The solutions were always freshly made.* A particular dropper was kept purposely for measuring the pure tuberculin. With this dropper it was repeatedly found that five drops weighed 180 mg. and one drop 36 mg. Consequently one drop of tuberculin thus measured, when diluted to 36 minims with sterile water, gave a solution of which 1 minim contained 1 mg. of tuberculin. Ten minims of this solution (measured with a special dropper) was put into an aseptic glass hypodermic syringe with enough more sterile water to make about twenty minims to be injected.

Estimating that nearly one drop of this might have remained in the needle uninjected, then the patient received perhaps one-half a milligram less than was prepared. As the Saranac tuberculin was always reported as a little stronger or more concentrated than Koch's standard, this loss was considered to have been overcome. The tuberculin used during the first five years at the sanatorium was furnished through the kindness of the Saranac laboratory. Dr. Baldwin described it as being, if anything, a little stronger than Koch's standard. Latterly some imported Koch's tuberculin has been used.

In none of the cases which received this maximum initial dose can it be said that anything more than perhaps a temporarily deleterious effect resulted. If special care, however, had not been exercised in the selection of the cases, without doubt considerable injury might have been inflicted.

The temperature reactions of the 167 patients who received the maximum dose initially were as follows:

32.13	per cent. had	99° to 100°
24.99	"	100° to 101°
21.42	"	101° to 102°
14.28	"	102° to 103°
7.14	"	103° or slightly above.

The reactions took place most frequently during the evening following that on which the injection was given, but in quite a number of instances the reaction did not occur until nearly 48 hours had elapsed.

The temperature and pulse were taken every two hours during the day and three or four times during the night on two or three days following the injection. It will be seen from this table that the majority had comparatively little fever (under 101°).

The daily routine was continued the same with all until the occurrence of a sufficiently marked reaction to necessitate rest in bed. As the height of the reactions occurred usually about bedtime, there were but few that actually became bed patients during the day as a result of the test. Only about 15 per cent. were kept in bed an entire 24 hours or more. This percentage of reaction seems low when contrasted with the reported results upon the soldiers in a Prussian regiment, where the reactions occurred in 60 per cent. of an entire company. The sanatorium cases were selected because suspiciously tuberculous. The Swiss-German recruits had been selected because supposedly sound. I have always felt confident that if these same Rutland patients could have had the identical dose of tuberculin while in their environment prior to admission to the sanatorium, the reactions would have been much more marked than was actually the case afterward while under sanatorium régime.

The open-air, rest treatment has a powerful effect upon any elevation of temperature produced through autoabsorption of tubercle virus. Why, then, should it not influence the temperature elevating power of tuberculin when deliberately injected?

Madison's[17] series of 400 consecutive patients admitted at the Danvers Insane Hospital reacted in 40 per cent. of the cases, and he quotes Beck's[18] series of 2,137 unselected cases with 1,154 reactions, or 54 per cent., and Zahn's[19] 6,320 autopsies in which he found tuberculosis present in 32.5 per cent. of all cases. In the cases at the sanatorium, tuberculin was not administered unless the presence of tuberculosis was strongly suspected. The patient was always admitted because of definite symptoms and generally because referred by some physician.

*Those who do not bear in mind the necessity for using freshly prepared solutions might be misled by the directions commonly given for preparing the dilutions, such as for example were given in an article on The Opsonic Index and the Tuberculin Test, by Rotch and Floyd:[16] "The solution for using this test is prepared as follows: One cubic centimeter of Koch's old tuberculin is added to 999 c.c. of boiled distilled water—one c.c. of this solution equals one milligram, the dose of this," etc. Without being cautioned against it, and having made up this solution of 1,000 c.c. for a few tests, an economist might save the bulk of the remaining solution for subsequent use, not realizing that for careful testing the dilution in a few days at most would be worthless. In a personal communication on this subject to the writer, Dr. E. R. Baldwin of Saranac stated in 1904: "I believe that it is often true that the preparation is not freshly diluted for each dose, nor always carefully prepared in making the dilutions. I have known at least one instance where negative results were uniformly obtained from an active tuberculin because the dilutions were not freshly made." The original concentrated tuberculin also tends to deteriorate in time, as shown by Madison,[17] who compared the contents of freshly opened bottles with that of those opened months before, and found less marked activity with the latter. Besides keeping it in "a dark, cool place" it is sometimes well to transfer it to a sterile tight glass-stoppered bottle, after opening the original package, because the glycerin which enters so largely into the composition of tuberculin tends to absorb moisture from the air, thereby slightly diluting the preparation.

I think that the data on the frequency of latent tuberculosis, which runs up into even much higher percentages than those given, has served merely to confuse and befog the minds of practising physicians when confronted with the necessity for making a diagnosis of the clinical type of early tuberculosis, and it furnishes them with an apparent excuse for not becoming especially active in the establishment of a diagnosis with suspected cases. There is, however, a vast difference between the latent or non-symptomatic and the active or symptomatic types of this disease.

In the opinion of all experienced observers 10 mg. is an unusually large dose and seldom necessary. Few certainly have had the temerity to give an initial maximum dose in so many cases. The practice is not advocated, but the statistics are offered in order to show the possibilities of the "clinical method" for the tuberculin test, and to estimate the degree of influence ascribable to a cumulative effect when tuberculin is given diagnostically in rapidly ascending or repeated medium size doses.

At the Massachusetts State Sanatorium since 1905 tuberculin in graduated increasing doses has been given to 96 patients. Reaction followed in 70 patients, or 72.9 per cent. The reactions with this method of dosage are increased 13 per cent. over those with single injections, and it will be seen that, owing doubtless to the cumulative property of tuberculin, a maximum dose given after a succession of smaller doses may sometimes cause a reaction when an initial maximum dose would fail. The interval between doses was about four days.

The subsequent history of the patients who were discharged on account of absence of reaction to tuberculin, although very incomplete, furnishes the fact that scarcely any patient reapplied for admission to the sanatorium, and this notwithstanding they were all cautioned to keep the possibility of tuberculosis in mind and return for examination if suspicious symptoms were noticed. The short period of education at the sanatorium which these people always had, doubtless must have been responsible for a considerable change for the better from their former mode of living, and this would exert a favorable influence upon their after history. With the patients, however, who, after reacting to tuberculin and remaining under treatment, were finally discharged with the disease arrested or apparently cured, there have been a few who have since relapsed, and two or three that, four to six years after their discharge, have died of tuberculosis. These data, so far as they go, indicate that the dose of tuberculin which was employed to differentiate the tubercular from the non-tubercular must have been essentially correct.

I do not believe we can ever know the exact minimum dose which will produce febrile reaction in health. Age, extremes in body-weight, the conditions of the nervous system, etc., doubtless would be factors affecting to a greater or less extent the size of the dose required.

Injections of sterile water have been used where it was thought that the neurotic element in a case would alone be responsible for some of the features of a reaction. In some institutions the initial dose of the tuberculin test is frequently merely water.

In using tuberculin diagnostically the lungs should be examined and the signs recorded before the test, and careful comparisons made about 24 hours and 48 hours after the tuberculin injection. The sputum, if any, should also be examined at this time, *i.e.* during the period of anticipated reaction. Occasionally the evidences of a reaction come only through these sources, the rise of temperature and symptoms of malaise being very slight indeed.

In order to give a still better idea of the character of the cases of suspected tuberculosis in which tuberculin was used at Rutland, I would say that of 2,749 patients admitted to the sanatorium in three and a half years, the first sputum examination revealed tubercle bacilli in 1,516 cases, later examinations in 477 cases. The sputum examinations were always negative in 640 cases, and there was no sputum at all in 126 cases.

Of these 757 non-bacillary cases, (*a*) 30 per cent. gave a history of hemoptysis and had definite physical signs of tuberculosis; (*b*) 28 per cent. had symptoms and physical signs so definite and evident that tuberculin was not used; (*c*) 24 per cent. were discharged, left of their own accord, or had such brief examinations that their cases were not classified or considered; (*d*) 20 per cent. were given tuberculin diagnostically, of these 60 per cent. reacted and remained, and 40 per cent. did not react and were discharged.

I think perhaps the most interesting fact which can be brought out in connection with these statistics is that, given the facilities for thorough search, it is possible to secure positive diagnosis without tuberculin in over 95 per cent. of all tuberculosis patients who are commonly seen by examiners for sanatoria, and this to a large extent excludes the hopeless cases. Even estimating that those patients who left the sanatorium almost immediately after entrance and in whom no proper examinations or tests could be made, would all have required tuberculin before 60 per cent. could be designated as positively tuberculous, then there would be but 200 (or 3.7 per cent.) out of approximately 5,331 applicants with tuberculosis, whose disease could not be positively diagnosed without tuberculin, and were diagnosed through sputum (89.9 per cent.) or by hemoptyses and other definite evidence (7.3 per cent.).

As only about one-third of the patients at Rutland have been admitted in the incipient stage, it is evident that this ability which we have shown in making a positive diagnosis of tuberculosis without tuberculin in over nine-tenths of all cases accepted, is not, after all, extraordinary. The average duration of symptoms in patients prior to admission has been every year, approximately, ten to twelve months.

It is well to note in the above that several hundred with incipient tuberculosis would have been left to the further unchecked ravage of the disease if reliance upon the first reported absence of tubercle bacilli had satisfied the physician's diagnostic curiosity.

Of 1,993 patients who had tubercle bacilli in their expectoration, and were resident at the sanatorium several months each, out of 14,000 microscopical examinations 708 patients only gave continual evidence of the presence of tuberculosis through their sputum.

It should be stated that the term "incipient" as defined by the National Association for the Study and Prevention of Tuberculosis, deals less with data which determine the duration of the disease than it does with points affecting the prognosis of the case. If the conditions are favorable and the lesion slight, tuberculosis need not necessarily be discovered early, in order to earn the appellation "incipient."*

*The Classification upon which applicants are admitted to most State Sanatoria is that adopted by the National Association for the Study and Prevention of Tuberculosis, viz.,

One might expect that physicians would use sanatoria oftener as places where suspected cases can receive the tuberculin test. Let us hope that conditions will improve and that, in the future, by assistance from anti-tuberculosis societies and health inspectors, physicians will be given an opportunity to see and pass careful judgment upon more cases in which the disease is slight or really beginning. Then tuberculin used both by the opthalmo method and by injection can perhaps be the most efficient single agent there is in lowering the death rate.

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Class 1, Incipient (Favorable).—Slight initial lesion in the form of infiltration limited to the apex or small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

Class 2, Moderately Advanced.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent, with little or no evidence of destruction of tissue; or, Disseminated fibroid deposits. No serious complications.

Class 3, Far Advanced.—Marked impairment of function, local and constitutional. Localized consolidation intense; or, Disseminated areas of softening; or, Serious complications.

It is the purpose and policy of sanatoria to admit at once applicants of the first class. Those of the second class are admitted if there are not enough of the first class applying to fill the beds, if in the judgment of the superintendent the treatment at the sanatorium will materially benefit them. those of the third class are not admitted nor are they advised that at any future time they will be admitted.

BENJAMIN RUSH AS A PHTHISIOTHERAPIST.

By HENRY FARNUM STOLL, M.D.,

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"THE ancient Jews used to say that a man does not fulfill his duties in life who passes through it without building a house, planting a tree, and leaving a child behind him. A physician, in like manner, should consider his obligations to his profession and society as undischarged who has not attempted to lessen the number of incurable diseases." So runs the argument to Dr. Rush's essay on consumption.

Benjamin Rush was born in the year 1745 in Bristol, Pa., a town not far from Philadelphia. After graduating at Princeton College he studied medicine at the University of Edinburgh. Following which he spent some time in the London hospitals, and later, through the generosity of Benjamin Franklin, he was enabled to study in Paris. Thus excellently equipped he returned to Philadelphia, at the age of twenty-four, and soon became the leading spirit in the medical, social, and political affairs of the day.

Himself a sufferer from "a weak chest,"[1] which troubled him the greater part of his life, it is not strange that he took a great interest in the treatment of consumption. While a student at the University of Edinburgh he had been taught that tuberculosis was an hereditary disease and that the most salutary results followed the antiphlogistic treatment. This aimed, as the name signifies, at diminishing the inflammation *per se*. To this end only "nonstimulating" food was allowed, cathartics and emetics were freely employed, and the lancet was often unsheathed. It will be recalled that though tuberculosis was thought to be inherited in the north of Europe during the eighteenth century, in Italy, Morgagni and Valsalva were teaching that it was contagious and strict laws were enacted concerning it. This latter view Rush entertained during the early part of his practice, but later he had serious doubts concerning its validity. True he noted the occurrence of the disease in several members of a family, but he likewise saw epilepsy and madness visited upon families, and those maladies were surely not contagious. He observed that nearly all members of the family had poorly shaped chests, that all were alike subject to the same local condition—poor food, bad hygienic surroundings, etc.—and that they were debilitated as the result of administering to the sick one during the long illness and broken by the grief attending his death. Then, too, Rush averred that the fearful apprehensions of the surviving members of the family was sufficient to induce consumption. And if contagious, why was there often an interval of from two to ten years between the cases? In view of such logic it is not strange that the doctrine of the contagious nature of this dire malady was not generally adopted until the bacillus was discovered by Koch.

"I grant," he says, "that certain cutaneous humors and the matter of old sores, when repelled or suddenly healed, have in some cases fallen upon the lungs and produced consumption, but the consumption was preceded by general debility." In point of fact he considered it a "law of the system" that local disease was always preceded by general debility and in cases of consumption he frequently detected the symptoms of a general asthenia for several months before he heard "a single complaint

in the breast." Tubercles he considered as the result rather than the cause of tuberculosis. They were due, he thought, to mucus which was secreted in "prenatural quantity" as the result of the general debility of the bronchial vessels.

He attributed the greater prevalence of consumption among the women of the period to their light dresses which exposed the upper part of the arms, as that part of the body was thought to "sympathize" with the lungs in some mysterious fashion. The frequency of the disease from that supposed cause gave rise to the saying that "the nakedness of women is the clothing of the physician."

Inasmuch as Dr. Rush lived in the decade preceding Laennec, he did not auscultate his patients. Yet without a stethoscope, in ignorance of the tubercle bacillus, without the use of tuberculin, he diagnosed tuberculosis in the so-called "pretubercular" state. Attend to the symptoms he mentions as occurring during the first stage: "A rapid pulse especially towards evening, slight fever increased by the least exercise, burning and dryness in the palms of the hands, occasional flushing in one and sometimes both cheeks, a hoarseness, a slight pain in the breast, a deficiency of appetite, general indisposition to exercise or motion of every kind." [2] Is there a text book to-day which gives a clearer picture of the "prepulmonary" symptoms of tuberculosis?

In Dr. Rush's treatment of this malady we find much that is in accord with our ideas. Like Stewart of Erskine he likens the treatment of pulmonary ulcers to those in any other part of the body. "It is vain," he asserts, "to depend upon internal or external medicines. The whole system must be strengthened or we do nothing and it is to be effected by exercise and a generous diet." [3] The rank and file of the profession was distinctly opposed to this tonic treatment. Stewart in England was depreciatingly referred to as "a medico-clerical gentleman of consumptive notoriety," [4] and in France the tonic treatment as practised by Tronchin was described as being "as fantastic as murderous." [5]

Rush had little patience with the ill-advised symptomatic treatment. He says: "It is lamented that it is not in pulmonary consumption only that the effects of a disease have been mistaken for its cause. It is high time to harness the steeds which drag the car of medicine before, instead of behind it." [6] As a prophylactic measure he advised those with an hereditary predisposition to tuberculosis to choose a profession or occupation that required constant labor or exercise in the open air in all kinds of weather.

As the first step in treatment he insists on the removal of all causes, both remote and exciting, which are weakening the system. This not proving sufficient, cold baths, "steel" and "bark," were employed, and a moderately stimulating diet and gentle exercise was prescribed. When the pulse remained hard or was "rendered weak by a laborious transmission of the blood through the lungs," he bled to the amount of ℥viii. Blood letting as a cure for fever was thought highly of, as imparting strength to the body and removing the depression. His defense of blood letting in general is quite eloquent. "Go to those families in which I have practised for many years and inquire whether there is a living or dead instance of dropsy having followed in any one of them, the use of the lancet. Let the undertakers and grave diggers bear witnes against me, if I have ever in the course of my practice conveyed the body of a single dropsical patient into their hands by excessive blood letting." [7]

For hemoptysis he advised giving the patient a teaspoonful or tablespoonful of clean, fine salt—"poured down," he explains, "as soon after the hemorrhage as possible." In a number of cases he used two tablespoonfuls and repeated it for several days. His assertion that it "sometimes excites a sickness in the stomach and never fails to produce a burning sensation in the throat in its passage into the stomach, and considerable thirst afterward." [8] will be generally accepted as the truth without trial.

Dr. Rush mentions a number of persons who were cured when they changed their vocation to one which kept them in the open constantly. He cites the case of Dr. Latimer, of Wilmington, who greatly improved upon giving up his practice and entering the army. Spitting of blood returned, however, when he resumed his profession. "He had recourse to a low diet, but finding it ineffectual, he partook liberally of the usual diet of healthy men and he now enjoys a perfect exemption from it." [9]

He was a firm believer in exercise, but his watchword was "avoid fatigue," concerning which he said: "It is the hinge on which the recovery or death of a consumptive patient frequently turns." [10] Sometimes patients were put in a cradle out of doors and rocked to and fro, or a "chamber horse" was used. He cites one case where good results followed the use of a "chariot without horses," which was slowly moved back and forth by hand. Swinging, sailing, carriage riding, walking, horseback riding, and dancing were advised in certain cases. He deplored—as he would to-day were he alive—the loose directions given patients concerning exercise. He said: "That physician does not err more who advises a patient to take a physic without specifying its quality and doses than the physician who advises a patient in a consumption to use exercise without specifying its species and degrees." [11] He sums up the treatment as follows: "If it were possible to graduate the tone of the system by a scale I would add, that to cure consumption the system should be raised to the highest degree of this scale." [12]

Benjamin Rush, then, must be recognized as a pioneer in "modern phthisiotherapy," for apart from his belief in the virtue of blood letting his treatment differs but little from that employed to-day. And it must be regretfully acknowledged that in his recognition of the constitutional symptoms that characterize the disease during the so-called "pretubercular" or prepulmonary state, he showed an appreciation of the malady that is sadly lacking at the present time. All this is the more interesting when it is recalled that he practised medicine many years before Andrew Stewart, who appears to have been the first one in England to cut loose from "things antiphlogistic," graduated from the University of Edinburgh. And Stewart died at a ripe old age before Bodington read his paper which resulted in Brehmers' Sanatorium at Groerbersdorf.

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THE MISUSE OF THE VOICE AND ITS CURE.

VOCAL MUSCLES AND RESONANCE.

By N. J POOCK VAN BAGGEN,

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The exercise of the breathing and articulating muscles must always precede that of the vocal muscles. The pupil must have gained sufficient control over the breath and know how to direct the breath against the hard palate, and also the position of the tongue must be normal before the action of the vocal cords can be corrected.

The principal faults in the action of the vocal cords are made during the pronunciation or attack of the initial vowels. We distinguish three glottids or three different ways of attacking the initial vowel: the gradual or glide glottid or spiritus asper, the clear glottid or spiritus lenis, and the check glottid or shock of the glottis.

By the spiritus asper, the vocal cords are slowly contracted, they only approach each other gradually for phonation. In this case the voice is preceded by an emission of unvocalized breath, that means we hear an "h" and instead of ah ee oo, etc., we hear haa, hee, hoo, etc.

This way of attacking an initial vowel we especially notice when the vocal cords are weakened or when, as a result of catarrh, they close with great difficulty. In singing, the spiritus asper is heard but too often, when it may be a mere bad habit or the result of an insufficient control over the breath. Yet whatever is the cause of the spiritus asper it is a way of intonation which we must condemn and avoid because it fails precision and distinctness and because it is unpleasant for the hearer.

When applying the spiritus lenis, the glottis is in the position of phonation at the moment that the breath issues, and voice is produced instantaneously without the preceding of any unvocalized breath. The effect is a clear and distinct attack of the vowel. This is the normal intonation, which every singer and speaker should practise and use. Besides the pure emission of the voice it has the advantage, that it does not fatigue the voice needlessly, all superfluous movements of the vocal muscles being avoided, which is not the case, as we shall see, with the check glottid.

By the check glottid the vocal cords are pressed together and the thus retained breath causes a little explosion at the instant that the glottis is opened for phonation. We can best compare the movement of the vocal cords by the check glottid, with that of the lips when forming the letter "p." The explosion we hear by "p" is caused by the bursting open of the compressed lips which kept back the breath, while with the check glottid the compressed vocal cords retain the breath and cause the explosion when opened. The thus formed vowel might be called an articulated vowel. As it demands an extra effort from the vocal muscles and also because the compression of the vocal cords causes irritation, this way of attack must be avoided as much as possible and only be used when it is necessary, that is when a word beginning with an initial vowel must be accented.

Generally the shock of the glottis is not only too much applied but it is also misformed and thereby most of the harm is done. The shock which we hear by the patient in question is generally produced by a spasmodic contraction of the vocal cords, the result of which is an uneven or a too tight closing of those cords.

When the shock of the glottis is executed normally, with a sound use of the muscles, and well supported by the breath, it is a useful exercise to improve the closing of the vocal cords and to strengthen them.

Yet those exercises must be done with the greatest care and only in presence of the experienced teacher, who by the ear only can judge if the exercise is well done.

To break the habit of the too frequent use of the check glottid we operate as follows: when a word beginning with an initial vowel appears in the middle of a phrase, this word is united to the preceding one. This binding together of the words must be done very lightly and, for instance, must not be made as close as the "liaison" in the French language, where the final consonant of the first word becomes the initial consonant of the next. When the phrase commences with a word beginning with an initial vowel the spiritus lenis must be applied.

The first exercise for learning and practising the spiritus lenis is made as follows: Pronounce haa with a sudden expulsion of the breath by a swift contraction of the abdomen, making the h of haa as short as possible, while the breath is well directed against the upper alveolus, so that the tone is clear. Immediately after the thus pronounced haa try to form ah (without the preceding h, spiritus lenis) still in the same breath but now expelling the air slowly and carefully controlling it. The same exercise must be repeated with all the sounds.

To obtain good results with the above-named exercise, the example and help of the teacher is indispensable, especially because at first the pupil is not able to recognize a clear glottid from a check glottid or a gradual glottid.

As well as the attack, the release of the tone, especially in singing, needs exercising. The release of the tone is well done when the glottis opens at the same moment at which the emission of the breath ceases. Sometimes the glottis is opened before the emission of the breath ceases, in which case the tone is followed by a rustling of unvocalized breath; when the emission of the breath has ceased before the glottis opens, the tone breaks off suddenly. Hardly any direct exercise can be given to master the faults in the release of the tone; their correction must almost be done entirely by the hearing and imitation. A perfect control over the breath and a good knowledge and pure execution of the attack will help the pupil to free himself from this fault.

In his effort to make himself understood, the speaker but too often contracts the habit of raising his voice beyond its natural pitch, which means that the vocal ligaments are strained more than they can bear, and more than is necessary. As the fundamental tone in speech is different with each individual it is not possible to determine a certain limit of pitch for speakers. The teacher must find out the natural fundamental tone of speech of each pupil and then try to speak in this tone and make the pupil imitate it. When the teacher is not able to speak in the tone required for the pupil, exercises with the help of the piano can be made in the following way: Before each phrase, let the pupil hear the keynote of his speech and make him begin his phrase in that tone.

Yet as those latter exercises easily lead to monotony the first mentioned way of exercising is preferable.

There are but few singers who do not know the

difficulties which the registers of the voice offer to them and many are they who spoil their voice forever by the misuse of those registers! It is not the place here to give a full definition of the registers, which is the "*point de dispute*" in the art of singing. I can but give some principal hints on the treatment of the misuse of the registers. Generally the faults consist in the exaggeration of a lower register at the expense of the higher. Especially by dramatic singers this fault is frequent. There is no voice, however strong it may be, which can endure this overstraining of the registers and sooner or later the singer must experience the disastrous results of his or her fault. Hoarseness, fatigue, roughness, and impureness in singing and last, but not least, premature wearing out of the vocal organs are those results.

The exaggeration of the registers is generally united with a faulty breathing, which in the first place must be corrected. Only after good results have been obtained in regard to breath practice, will exercises for the correction of the use of the registers be made with success.

When the fault consists in the exaggeration of the low register, the singing in this register must be avoided for some time; when both the low and middle register have been used beyond their limit, exercises can at first be made only in the high register.

The pupil while exercising (in the first case in the middle and high register, in the second only in the high register) must limit himself to a few tones, singing always downwards and very softly. The tones will be weak, husky, and often impure in the beginning; by and by, however, they will improve. When those few tones are pure and clear, the pupil may extend the exercises downwards, always singing pianissimo and avoiding the lower registers. The high and middle registers or only the high register must be extended downwards as far as possible. Only after all the tones, sung as indicated, are clear and pure and have gained sufficiently in strength, may the low or the low and middle register be used again, but even then not more than is strictly necessary, while its diapason must be restricted to two or three tones below its natural limit.

The stretching downwards of a higher register at the expense of a lower register is also an excellent help to smooth the break in the voice at the passage from one register to the other. This stretching downwards of the higher registers always can be done without any danger to the voice. The "timbre" of the voice will even gain considerably in brilliancy and fullness by exercising in this way.

Closely united to the stretching and relaxing of the vocal ligaments is the moving up and down of the larynx. Many believe that the larynx must be kept as motionless as possible and in a low position. The large number of voices which have been spoilt by this unnatural fixed position of the voice-box are a manifest proof of the evil of this way of operating against which every singer and speaker must be warned.

The larynx must be completely free in its movement, its positions varying according to each tone and to the pronunciation of each vowel. We can easily follow the movement of the larynx by laying the finger on the prominence in the throat formed by the junction of the two wings of the thyroid cartilage commonly called "Adam's apple." When pronouncing successively "oo, ow, oh, ah, eh, ay, ee," we will notice that the voice-box rises and inclines slightly backwards and while by "oo" its position is lowest, it is highest by "ee."

Also when singing upwards we shall feel the larynx going up, while the inclination backwards can still be better observed than when pronouncing the vowels. When singing a high tone after a low one we can feel especially how considerably the position of the larynx changes, and it is clear that every obstruction in its movement hinders a normal voice production.

When examining the patient the teacher must observe the action of the larynx and feel if there are no spasmodic movements and if the flexibility is satisfactory. The action of the larynx can be exercised and improved by singing seconds, thirds, etc. The keynote always may be sung on *oo* the second, third, etc., on *ee*.

The resounding of the tone in the resonance cavities is of great importance to the speaker and singer. It is in the resonance cavities that the tone formed by the vocal cords acquires its accessory tones on which depend the characteristic sound of each vocal, the fullness and the brilliancy of the voice, and its "timbre."

It is in the first place for the pureness of the vocals that the resonance cavities and the accessory tones formed in them require our attention.

A vocal is no other than a tone formed by the vocal cords of which the vibration provokes the co-vibration, in the resonance cavities, of a certain amount of accessory tones of a determined quality. The quantity and quality of the accessory tones depend on the shape of the resonance cavities. By modifying the shape of the resonance cavities, tones of different qualities and in different quantities are put in co-vibration by the vibration of the keynote, or, what is the same, another vocal is formed. (For the modifications of the shape of the resonance cavities for the formation of the vocals see the article on "Articulation.") Ah has accessary tones different from ee or oo; ow from eh; ai from oh, etc.

In a series of vocals those next to each other, of which the formation differs but slightly, have accessory tones in common. In the series ah, eh, ai, ee, for instance, the "ah" has some tones in common with the "eh," like the "eh" with the "ai," and the "ai" with the "ee."

When the vocals are not pure this is due to the co-vibration of false accessory tones. This fault can be corrected by modifying the shape of the resonance cavities. However, this can only be done by changing the form and position of the soft and flexible walls of those cavities. The organic construction of the hard walls is unalterable and where this is the cause of the impureness of the vocal the fault is not remediable unless by removing a part of those walls—a dangerous remedy, because of the result being doubtful. As well as each vocal, each pitch has its own accessory tones. Yet, while the characteristic sound of the vocal is principally formed in the cavity of the mouth, the different pitches find their accessory tones in the various resonance cavities. For the lower tones the accessory tones lie in the chest and in the cavity of the mouth, the lower middle tones find theirs in the mouth and nasal cavities, the upper middle tones receive the co-vibration of tones in the nose and frontal cavities, while for the high tones the accessory tones are to be found in the sphenoid, frontal, and nasal cavities.

Like the vocals each pitch also requires a different shape of the resonance cavities. An exact knowledge of the place of the accessory tones and

of the form of the resonance cavities at each pitch is a first requisite for every singer. The misuse of the accessory tones is frequently the cause of a husky and impure voice. But too often we observe singers singing a high tone while the resonance cavities have the shape and the position of a low tone or *vice versa*. The correction of this fault is a part of the task of the teacher and of the pupil, which demands infinite patience and perseverance and which depends almost entirely on hearing and on imitation. Control over the breath and the exact knowledge how to direct the breath is in the first place necessary. The flexibility of the elastic walls of the cavities must be improved by exercise when needed; the soft palate especially requires our attention as to this. The singing or humming on "m," "n," and "ng" is a great help to make the pupil conscious of the place of the accessory tones in the upper resonance cavities.

When the organic construction of the hard walls of the resonance cavities is the cause of the huskiness or the impureness of the voice, exercises will hardly have any result at all.

When the lack of resonance is caused by the swelling of the mucous membrane which covers the cavities, the co-vibration of the mucosa must be restored. Humming on *m*, *n*, and *ng* is mostly effective in this case, which humming must be done as follows: begin with a middle tone and let the voice descend, gliding over the tones, then begin with a higher tone and do the same and continue till the limit of the voice is reached.

In this as well as in the preceding articles I have mentioned only the faults which are most frequent and the principal indications for their correction. My intention was only to give an *aperçu* of the treatment, which intention I hope to have fulfilled.

Plaats 10a.

THE FAVORABLE INFLUENCE OF SMALL DOSES OF ARSENIC AND BICHLORIDE OF MERCURY IN THREE CASES OF GRAVES' DISEASE.

By LEONARD WEBER, M D

NEW YORK

Among the twenty cases of Graves' disease of which I have records there is but one male, all the others are women between twenty and forty years old, none of whom were quite normal as to functional activity of the central nervous system. Only one acute case concerning a single woman of twenty-five terminated fatally by excessive hyperthyroidism and final cardiac failure.

Surgical procedures, such as Kocher's recent statistics have shown to be of great value in the severer forms of exophthalmic goiter, have not been done in any of my cases.

From Graves' and Basedow's time to near the end of the last century the disease was considered to be a vasomotor neurosis; rest, baths, change of scene, good nursing, the galvanic current to cervical sympathetic, and the administration of phosphate of sodium, 1 to 2 drams three times a day, according to Professor Kocher's own recommendation, were our main reliance. About 1805 Moebius came forward and said that Graves' disease was hyperthyroidism, that the perverted and excessive function of the gland was the cause of the entire symptom-complex.

His definition has been accepted, I believe, by the great majority of clinicians and practitioners, so that it is our task now to bring back the thyroid to normal function by medical means, or, if unsuccessful in such attempts, to have the gland removed in severe cases.

A sister of the young woman mentioned above who died of acute Graves' in about a year, came under my care in 1901. She was then thirty-one years old, married, 1-para, and presented both the cardinal symptoms of Graves' and various other signs of acute intoxication, such as marked tremor, sweats, frequent diarrhea, and later on enlargement of the liver and spleen. The usual plan of treatment being without avail and thyroidectomy having been refused, it occurred to me to try arsenic and corrosive sublimate for their antitoxic effects. The patient was ordered arsenic gr. 1/60 and sublimate, gr. 1/60 in tablet form, to be taken t.i.d.; and about one month after the introduction of these remedies she showed signs of improvement in all the symptoms. She continued to take them with but little interruption for nearly three years, recovered entirely, and has not been in need of any treatment the last two years.

In two other cases which have come under my care since 1903 I have had equally good results from the same remedies; however, they were not severe. I shall be gratified if this short communication will induce other practitioners to try the treatment in suitable cases.

25 West Forty-sixth Street.

The Smell of Paint.—The smell of paint occasions distress to a good many people and the spring cleaning season, when it involves the painting as well as the cleaning of the house, is dreaded, not on account merely of its interfering with the ordinary comforts and conveniences of the home, but because also in not a few cases a distinct disturbance of health is threatened. Persons who are sensitive to the vapors of paint, or, what is the same thing, to the turpentine and oils contained in the paint, are well advised to resign their homes until the drying influence of the air has dissipated the volatile oils. Turpentine, even in the form of vapor diluted with air, undoubtedly affects the health of some persons, the disturbance manifesting itself in the shape of giddiness, headache, deficient appetite, and anemia. There are headache, vomiting, swelling of the tonsils, albuminuria, and a marked rise in the temperature apparently due to an exposure to the emanations of wet paint for nearly a fortnight. That such a case should now and then arise is not surprising when regard is paid to the toxic effects which turpentine vapor is capable of setting up. Turpentine, in short, is a poison, and cats and rabbits are so susceptible to its action that if kept exposed to its vapor for some minutes they exhibit marked toxic symptoms ending in death if they are not removed from the sphere of action of the vapor. Personal idiosyncrasy, however, is clearly an important factor, for many persons and probably the majority do not seem to be affected by turpentine vapor to any serious degree. A very sensible precaution during the painting season for those to take who are compelled to endure the nuisance is to leave bowls of water in the freshly painted rooms. Some, at any rate, of the paint emanations are thus absorbed, as will be seen by the oily film on the surface of the water so exposed. An even more powerful absorbent is fresh milk which reduces the smell of paint in a room in a remarkable way. The poisonous effects of paint emanations do not appear to be connected in any way with the lead contained in the paint, the colic of painters being due to the actual contact of the person with the substance of the paint.—*The Lancet*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE WIDESPREAD PREVALENCE OF PLAGUE.

THE recrudescence of plague in San Francisco, albeit on a small scale, cannot fail to bring to the minds of our readers the remarkable manner in which this disease has not only gained a foothold in different parts of the world, but has spread and appears to be spreading. The *Lancet*, in its issue of December 28, reviews as usual the chief happenings of the past year in medical circles, and no portion of this summary is more striking, and it may be said of more sinister import, than that which refers to plague. There is at the present time plague in India, in Afghanistan, Persia, China, Strait Settlements, Japan, Formosa, and the Philippines. It exists in Australia, on the Pacific slope of the United States, in South America, in various districts of Africa, in Turkey, in Asiatic and European Russia, and to a small extent in other parts of Europe. In Great Britain there were, during 1907, two cases of plague in Glasgow. Indeed, it may be stated that the malady is ubiquitous. In India the situation is appalling. The number of cases recorded in 1907 in that country is more than treble that in the previous year. The disease in Australia has shown itself sporadically in sections of that continent located at a considerable distance from each other. There are many places in which the disease has seemed to have disappeared, whereas it really was only dormant, or merely needed the presence of the conveyer of infection to initiate an epidemic or at any rate the dissemination of the malady on a more or less wide scale.

The experience of certain parts of Australia would appear to have been duplicated in San Francisco. There plague has not been evident, so far as was publicly known, for a considerable lapse of time. But in August of last year it again appeared in the chief port of California, introduced probably by vessels bearing infection from the pest-ridden Far East. Thence it traveled, or rather was conveyed, to other places in California, and found its way to Seattle.

The task would, however, be idle to point out the spread of plague throughout the world. Suffice it to say that it now is practically everywhere, and that the question as to its suppression is a most serious one with all civilized nations. Of course, it cannot be abolished. The labor of bringing this about would be too titanic for all the resources of science, money, and power. The state of affairs in India and China alone would render the consummation of such an object impossible. But it might and should be limited to the Far East.

Difficulties there would be in the path, but, taking into consideration the results which would accrue from gaining this end, no expenditure of money and energy would be too great.

At least now there is something to work on. It is known that rats are the chief, if not the sole, means of carrying the disease to far-scattered portions of the globe. The results of the observations by the several research societies in India during 1907 go to confirm the views already expressed by other investigators, that plague is conveyed from infected rats by fleas, and that when these fleas feed on man the disease is conveyed to him.

If, then, a successful war of extermination were carried on against rats, the prevalence of plague would be stayed. Again, it may not be feasible to slay rats wholesale in India, notwithstanding the fact that the assertion has been freely made that if all the energies of the Indian Government and its officials were bent on the destruction of rats, wherever found, plague would soon cease. Granted that rats cannot be destroyed in this way in India, it should be seen to in the most careful manner that the disease is not exported; that is to say, that rats are not carried on vessels that leave India or any of the Far Eastern ports. There are many obstacles to the successful conduct of this undertaking, but it cannot be truly said that these are insuperable. The plan would be expensive, and would entail much trouble for officials and captains of ships, and would be regarded in the fatalistic East as unnecessary. Laws, however, to this effect should be introduced and rigidly enforced, for civilized countries cannot be expected to bear the infliction of such a disease as plague, when they can be rendered free of its menace by the display of energy and by the spending of money. The whole matter is really an international affair, and all nations interested should quickly come to a definite understanding with regard to the measures to be taken to confine plague within what we may call its legitimate limits.

ROENTGEN-RAY TREATMENT OF PROSTATIC HYPERTROPHY.

IN the early stages of prostatic hypertrophy dietetic treatment may suffice to do away with the symptoms; in the later stages operative treatment or catheterization must be resorted to, the former often impossible on account of old age or enfeebled constitution, the latter always accompanied by the possibility of a cystitis or pyelitis setting in, even after thoroughly instructing the patient in the aseptic use of the catheter. Recently the fact that the action of the *x*-ray upon glandular tissues tends to cause their atrophy has suggested its application in cases of hypertrophy of the prostate. Thus Gautier of Paris, addressing the Congress of Sciences, held at Montarban in 1902, said that in his experience nothing compared with the *x*-ray treatment of hypertrophied prostate, he having obtained decided results in from four to eight sittings. Carabelli and Luraschi, however, in 1905, were the first to announce

definite results with the new treatment, having reported the cure of a patient with a greatly enlarged, hard prostate, who had 200 c.c. of residual urine.

In the January number of the *American Journal of the Medical Sciences* W. Hunter reviews the literature on the *x*-ray treatment of hypertrophied prostate and adds a case of his own. All the cases previously reported showed improvement, there having been a diminution in the size of the prostate as well as in the amount of residual urine and frequency of urination. His own patient was a man eighty years old who had a chronic cystitis for eight years, the urine containing large amounts of pus, but no cylinders. In February, 1907, prostatic symptoms set in, he voided urine as many as six times at night, had a burning sensation and pain during urination, and examination revealed a large prostate; the symptoms grew gradually worse until in April he was able to void only half an ounce of urine at a time and the residual urine amounted to 60 c.c. Operative treatment was manifestly out of the question so that *x*-ray treatment was resorted to. The patient received three exposures during May, the first two of twenty-five minutes, the third of fifteen minutes, after which, although all internal medication had been stopped, he enjoyed complete comfort until June 27, when the entire train of symptoms returned much aggravated. During July and August he received six exposures of from fifteen to forty minutes each, improvement having been marked after each treatment, until finally he urinated only once during the night, had no pain, passed a large, clear stream, and had only fifteen c.c. of residual urine; the prostate had diminished in size and the testes had atrophied.

Hunter prefers a high tube and uses a current of two ampères at 110 volts, placing his patient in the Sims position and directing the rays upon the perineum after protecting the surrounding soft parts with lead foil. In very old men he advises exposing the scrotum as well, as the good effect sometimes attending a castration can be added to that of the direct exposure. He has never seen any unpleasant results from the rays in spite of the long sittings, and believes that epididymitis and hemorrhagic cystitis which have been reported as caused by the treatment were due to faulty technique, the irradiation having taken place through the rectum.

It is entirely too soon to form any definite opinions as to the permanent cures to be obtained by this form of treatment, the reported cases having been too few. This much may be said, however, as there is apparently no danger connected with it and as it is easily carried out without any discomfort to the patient, it should be tried in all cases before an operation is resorted to and certainly in all inoperable cases when the patient would otherwise have to lead a catheter life. Only a few sittings are necessary to see whether it will do any good, an amelioration of the symptoms usually setting in after the first exposure. In all but the most pronounced cases of extremely indurated prostates the *x*-ray bids fair to surpass all other methods of treatment.

THE DISAPPOINTMENT OF MR. BOK.

A Mr. Bok, the proprietor of a female magazine, some years ago instituted a crusade against quack medicines, prosecuting it with a vigor and a fearlessness of the consequences which won for him much praise, and for his journal enthusiastic support from the lady members of the medical profession. He really did good work in a way and deserved all the material support which was given him, but, like many reformers, he didn't know when to stop or where to limit his efforts to better the world. The unstinted praise which he received from medical practitioners for his seemingly unselfish warfare against quackery, together with the injudicious flattery of a professional journal, inspired him apparently with the belief that he also had a mission to reform legitimate medical practice. Misled by a slightly unbalanced though highly esteemed contemporary, he adopted its views regarding the identity of quack medicines and proprietary pharmaceutical preparations and began a crusade against the latter. This was resented more or less, as meddling of outsiders in domestic disputes always is, and the chorus of professional approval suddenly ceased. The silence was painful to the strained tympanum of the reformer, and the mental reflex has been startling. It has driven him to a repudiation of all medicine—quack nostrums, synthetic remedies, and even the preparations of the Pharmacopœia, so dear to the heart of every earnest foe of proprietaries.

Mr. Bok has dropped us. In an address of which he recently delivered himself before the Philadelphia branch of the American Pharmaceutical Association he lamented the fact that his crusade had signally failed, and that physicians were now prescribing more proprietary remedies than ever before. In 1905, as he sorrowfully admitted, 41 per cent. of the prescriptions written in Philadelphia called for non-pharmacopœial remedies, and in 1906 this percentage had increased to 47. He could name, he said, sixteen leading practitioners of Philadelphia residing within six squares of the place where he was then holding forth, who continued to prescribe a certain "nostrum" which had been pronounced absolutely worthless by the *Journal of the American Medical Association*. This was too much! Lot had to move to get away from bad neighbors, and Bok is going to do the same. If the doctors won't prescribe the remedies of which he approves or will give those he has been told are bad, he will have none of them and it's osteopathy for him. In his own circle of friends, he said, fourteen families had, within a year, turned to "the drugless method of treatment" because they could not take "the chances with prescriptions," and Osler having gone there was no refuge but with Still. To help on the good work, we may note, and in witness of the editor's repudiation of drugs, good, bad, and indifferent, he has recently caused to be published in his journal a lucid exposition of the virtues of osteopathy, written by the founder of the school. In closing his valedictory address to the medical profession, the now thoroughly aroused orator intimated that though he had given us up he was not yet through with us, and

hinted darkly of some most damaging exposures which he had prepared, but was not yet quite ready to publish.

Mr. Bok's disappointment is due to the same error as the want of success of the would-be reformers within the profession. He confounded legitimate proprietary remedies with quack nostrums and included all, the good and the bad together, in one sweeping and intemperate denunciation. It was not his business, of course, to dictate to qualified practitioners of medicine regarding their treatment of disease, but had he been less obstreperous in his comments on certain abuses, which all admit need correction, his interference would have been received with the easy tolerance of a fairly good-natured profession.

Direct Transfusion of Blood in Illuminating Gas Poisoning.

The frequent occurrence of illuminating gas poisoning and the numerous deaths caused thereby make any good results in the line of treatment of practical importance. After a study of sixteen cases, all of which ended fatally, and none of which was treated by direct transfusion, and after a study of numerous cases reported in literature as cured by transfusion, Crile and Lenhart instituted some experiments to test the value of the various therapeutic measures suggested, especially blood transfusion, reporting their results in the October number of the *American Journal of the Medical Sciences*. Dogs were used, but no attempt was made to determine the exact proportion of gas in the mixture of gas and air, as it was thought that the best basis for comparison of therapeutic measures would not be the percentage of gas, or its time of action, but rather the exact condition of the animal as determined by ordinary clinical means, and especially by a manometric tracing of the blood pressure. The dogs were poisoned, and when the blood pressure reached a certain low point the various therapeutic measures were instituted and their results compared. In all cases respiration had stopped. In the sixteen cases recorded the heart had stopped in eight before any measures of resuscitation were taken. In six cases the heart had almost stopped with a blood pressure varying from 8 to 20. In two cases the blood pressure was 54 and 44 mm., respectively. One was saved by transfusion, the other died, notwithstanding the giving of saline infusion. Reduced to the low degree of blood pressure, 7 out of 10 dogs were rescued by transfusion of blood; of 6 others treated by the various other methods, all died. For the animal to recover it was necessary to begin transfusing immediately after the heart stopped beating, as the procedure is not efficacious after the heart stops finally, such, for example, as is adrenalin in chloroform poisoning. From the results of these experiments it seems fair to draw the conclusion that direct blood transfusion is of greater therapeutic value than oxygen inhalations, venesection, intravenous saline injections, and the other measures which have long been used in the treatment of illuminating gas poisoning.

The New Tuberculin Reactions.

Enough clinical reports have now been published in regard to the cutaneous and conjunctival tuberculin reactions of von Pirquet and of Wolf-Eisner and Calmette, respectively, to make it appear probable that the methods will prove to be of real utility. It is true that as in adults they indicate the existence even of lesions that are latent and encapsulated and may be regarded as of comparatively little importance, their results are of greater negative than positive value, but for children this objection has less force. A few instances of more or less serious ocular complications have been reported, misadventures which the friends of the conjunctival reaction ascribe to the use of a too concentrated test solution, and cases are not lacking in which the reaction was positive, but a subsequent autopsy revealed no tuberculous lesion, so that evidently an attitude of some reserve is still justified. That the matter has aroused great interest among clinicians is shown by the fact that a recent author was able to collect records of over 1,800 cases of the conjunctival reaction, concerning which the details have been published, with conclusions in favor of the method. Wolf-Eisner (*Berliner klinische Wochenschrift*, January 13, 1908) is firmly convinced of the reliability of the new procedures, and believes that they afford an insight into the powers of resistance of the body to the disease and that the nature of the reaction enables definite conclusions to be drawn in regard to the prognosis. For example, a very vigorous reaction in an early tuberculosis suggests a favorable outlook, while the opposite is true if the reaction is weak. In more advanced cases a strong reaction indicates the possibility of arrest or, at most, of very slow progress, while a weak response in late cases would indicate that the malady was making very rapid progress.

Early Mercury Treatment and Syphilitic Nervous Diseases.

The opinions of medical men as to whether energetic mercurial treatment in the early stages of syphilis can eventually prevent syphilitic diseases of the nervous system, are diametrically opposed. Most of the authorities simply express their views on this subject without giving any actual figures, large statistics being rare. Neisser found that forty-seven per cent. of 445 patients with tabes dorsalis had previously received antisyphilitic treatment in the early stages of the disease. The percentage was greater in a series of cases reported by Eulenburg and Dinkler. At the first annual meeting of German nerve specialists, held in Dresden, on September 15, 1907, P. Schuster reported ninety cases of tabes, forty-five of paresis, and 100 of cerebrospinal syphilis; of these 186, or 77 per cent. had previously undergone mercurial treatment, in fact 19 per cent. had as many as eight or nine series of inunctions. The time which elapsed between the appearance of the primary lesion and the nervous manifestations was no shorter in the patients who received no or only few inunctions than in those who received many. He made blood examinations in sixteen of his patients and found antibodies in the majority of them. The latter were present both in patients who had previously undergone mercurial treatment and in those who had not, and the clinical picture was the same whether the treatment had been given or not. Schuster by no means advises against mercurial treatment in the early stages of syphilis, for he does not deny the influence for good that such treatment exerts upon the course of the disease, but he asserts that his statistics show that such treatment does not prevent any future syphilitic affections of the nervous system, a state of affairs which he attributes to the fact that mercury does not eliminate the antibodies from the blood.

News of the Week.

The Illinois Sanatorium Bill, giving power to cities and villages in the State to establish and maintain public sanatoria for the treatment of tuberculosis, has passed the Legislature and become a law. The bill, which had the support and indorsement of the Illinois State Board of Health, and for the passage of which Dr. Egan, the secretary of the Board, is largely responsible, gives to each city and village in the State "the power to establish and maintain a public sanatorium for the use and benefit of the inhabitants of such city or village for the treatment and care of persons afflicted with tuberculosis, and to levy a tax not to exceed four mills on the dollar annually on all taxable property of such city or village, such tax to be levied and collected in like manner with the general taxes of said city, and to be known as the Tuberculosis Sanatorium Fund."

Tuberculosis Notification to be Made Compulsory.—Dr. Eugene H. Porter, State Commissioner of Health, has announced that the State Health Department is about to make an effort to secure the legislation to make notification and registration of cases of tuberculosis compulsory, and that a bill to this effect will soon be introduced in the Legislature.

Insanity Statistics.—According to the nineteenth annual report of the State Commission in Lunacy submitted to the Legislature on January 31, the whole number of committed insane on October 1, 1907, was 29,093. Of this number 13,927 were men and 15,166 women. The commission reports a slight improvement in the rate of recovery.

Diphtheria Cultures Not Mailable.—The Chicago Health Department calls the attention of physicians to the fact that they must not attempt to send diphtheria cultures through the mails. The postal laws absolutely prohibit the sending through the mails of any infectious material because of the danger of infecting the mails and thereby causing an epidemic of disease. The director of the Chicago Laboratory has been notified by the postal authorities that he must report all such violations to them, and physicians are warned that if diphtheria cultures are sent through the mails they will be immediately turned over to the postal authorities.

Army Medical Corps Bill Passed.—On January 28 the Senate passed the bill to increase the efficiency of the medical department of the army.

Antivivisection Bill Introduced.—The antivivisection bill, whose true purport has already been explained in these columns, has been introduced in the Legislature at Albany by Assemblyman Warren I. Lee.

Treatment of Bubo.—Dr. H. H. Morton writes that in his article on the treatment of bubo in the issue of January 25 the types made him recommend fermentations with acetate of ammonium, when what should have been printed was acetate of aluminum.

Korte's Birthday.—On the sixteenth of last month Privy Councillor Friedrich Körte, the dean of Berlin physicians, celebrated his ninetieth birthday, and numerous deputations from medical and other societies assembled in honor of the occasion. In spite of his advanced age Körte still enjoys remarkable physical and mental vigor.

International Conference on Sleeping Sickness.—The Second International Conference on Sleeping Sickness, which was to have been held in London on January 9, was postponed at the last minute owing to the fact that the French delegates had not been able to complete their preparations. It is expected that the conference will be held in a few months.

Against Cigarettes in New York.—At a meeting of the Board of Aldermen last week an ordinance was introduced with the object of restricting the sale of cigarettes or tobacco to minors under eighteen years of age. The penalty provided was $10 to $25 fine, ten days' imprisonment, or both. The matter was referred to the Committee on Laws and Legislation. An ordinance was also passed forbidding the smoking of cigarettes by women in public restaurants. The latter was promptly vetoed by the Mayor.

Famine in Lapland.—Despatches from Stockholm say that there is great distress through famine in the iron mining districts of northern Lapland. In the parish of Velhelmina the inhabitants have been reduced to using dogs and cats for food.

Russian Empress no Better.—The condition of the Czarina, who is suffering from a functional nervous disorder and general debility, is reported as no better, and it is stated that an ocular condition is present which will require operation.

Diphtheria in a Prison.—An epidemic of diphtheria is spreading among the 540 inmates of the reformatory at Rahway, N. J. Over fifty cases have already occurred and the drill room is being used to supplement the regular hospital. So far there have been no deaths.

Resisted Ambulance Surgeon.—When the ambulance surgeon of the Kingston Avenue Hospital sent to remove a four-year-old child from a tenement in East New York to the hospital attempted to take the patient away the family and neighbors offered forcible resistance, and four arrests were made before the ambulance was allowed to go.

Koch to Visit This Country.—In a recent interview Professor Robert Koch, who returned to Berlin a short time ago, after eighteen months' sojourn in Africa studying sleeping sickness, is reported as having announced his intention of taking a year's rest in travel, beginning with the United States. He is quoted as saying that he intended to leave for this country the end of March or early in April.

The Oldest Man in New England, according to the newspapers, was John Burrows, of West Stockbridge, Mass., who died on January 31, at the age of one hundred and six years. He had never used liquor and worked till he was over ninety.

New Training School for Nurses.—The managers of the Jewish Hospital, at Classon and St. Mark's avenues, Brooklyn, have decided to establish a nonsectarian training school for nurses in connection with the institution. The course will be of two years' duration, under the direction of Miss Simonson, superintendent of nurses. Pending the erection of a training school and home for nurses an apartment house near the hospital has been rented for their use.

Hebrew Charities.—Reports of sub-committees presented last week at a meeting of the Committee of 250, appointed recently by the Council of Jewish Communal Institutions to solicit funds for the United Hebrew Charities, showed that more than $20,000 has been obtained in new memberships and donations. The Board of Directors of the United Hebrew Charities has decided to continue its work through the winter months, but at least $40,000 more is needed to carry the society through its fiscal year ending next September.

Bequests to Hospitals.—By the will of the late John Lambert, of Philadelphia, the sum of $50,000 is to revert to the Pennsylvania Hospital after the death of certain beneficiaries, $25,000 to the Free Hospital for Poor Consumptives at White Haven, and $5,000 to the library of the College of Physicians of Philadelphia. By the will of the late Adeline S. Tryon, of Philadelphia, the sum of $1,000 is bequeathed to the Rush Hospital for Consumptives, St. Christopher's Hospital for Children, and the Kensington Hospital for Women.

Harvey Society Lecture.—The sixth lecture in the Harvey Society course will be given by Professor Joseph Jastrow, of the University of Wisconsin, at the New York Academy of Medicine on Saturday evening, February 8, at 8:30 P.M. Subject: "Subconsciousness."

International Congress in Electrology and Radiology.—The Fourth International Congress in Electrology and Radiology will be held at Amsterdam, September 1 to 5, 1908, in the buildings of the university. The program will comprise questions on electrophysiology and electropathology, electrodiagnostics and electrotherapeutics, diagnostics and therapeutics of Röntgen rays, the study of diverse radiations, and medical electrotechnics. In conjunction with the Congress there will be an Exhibition of apparatus and a collection of radiographs. The executive committee consists of the president, Prof. Dr. J. K. A. Wertheim Salomonson; the secretary, Dr. J. G. Gohl, and the treasurer, Dr. F. S. Meijers. The address of the committee is Vondelstraat 53, Amsterdam.

Medical Society of the Missouri Valley.—The spring meeting of this society will be held in Lincoln, Neb., March 19 and 20, under the presidency of Dr. W. F. Milroy, of Omaha, and the program is now open for contributions. The secretary is Dr. Charles W. Fassett, of St. Joseph, Mo.

Philadelphia Medico-Legal Society.—At a stated meeting held January 28 the following officers were elected for the ensuing year: *President,* Dr. William Ruoff; *First Vice-President,* Dr. J. Savidge; *Second Vice-President,* Dr. S. P. Gerhardt; *Secretary,* Dr. W. T. Hamilton; *Treasurer,* Dr. C. M. D. Peltz; *Censors,* Dr. F. J. Kelly, Dr. J. Wolfe and Dr. W. H. Robinson.

Chicago Ophthalmological Society.—This Society at its annual meeting, recently held, elected the following officers for the ensuing year: *President,* Dr. Thomas A. Woodruff; *Vice-President,* Dr. Charles P. Pinckard; *Secretary-Treasurer,* Dr. Mortimer Frank; *Councilor,* Dr. Thomas Faith, and *Alternate,* Dr. Willis O. Nance.

American Society of Sanitary and Moral Prophylaxis.—The next meeting of this society will be held at the Academy of Medicine on Thursday, February 13. Papers on the education of young people in the hygiene of sex will be read by President G. Stanley Hall of Clark University and Principal Frederick S. Curtis of the Curtis School for Boys.

The New York Medico-Legal Society and the American Congress for Tuberculosis will meet in joint annual session at Chicago, June 1, 2, and 3, 1908. The local committee of arrangements consists of Dr. Denslow Lewis and Dr. Thomas Bassett Keyes, of Chicago, and Dr. E. S. McKee, of Cincinnati. The latter was appointed to take the place of Dr. Nicholas Senn, recently deceased.

Northwestern District (N. D.) Medical Society.—At its meeting in Minot on January 4 this society elected officers as follows for the ensuing year: *President,* Dr. H. C. Windel, of Williston; *Vice-President,* Dr. O. W. Rowe, of Towner; *Secretary and Treasurer,* Dr. R. W. Pence, of Minot.

Nicollet and Lesueur Counties (Minn.) Medical Society.—Officers were elected as follows at the meeting of this organization held in Lesueur on January 24: *President,* Dr. G. F. Merritt, of St. Peter; *Secretary,* Dr. J. E. Le Clerc, of Lesueur; *Treasurer,* Dr. J. W. Daniels, of St. Peter.

Newport (R. I.) Medical Society.—At the meeting of this society held on January 24 the following officers were elected: *President,* Dr. S. T. Cottrell; *Vice-Presidents,* Dr. W. A. Sherman and Dr. M. H. Sullivan; *Treasurer,* Dr. P. A. Jacobi; *Secretary,* Dr. Mary E. Baldwin.

Yolo County (Cal.) Medical Society.—The following officers were elected at a meeting of this society held in Woodland on January 16: *President,* Dr. T. W. Gallion, of Davis; *Vice-President,* Dr. H. D. Lawhead, of Woodland; *Secretary and Treasurer,* Dr. F. L. Newton.

Chattahoochee Valley Medical and Surgical Association.—This association at its third semi-annual meeting, held in Columbus, Ga., on January 16, elected the following officers: *President,* Dr. J. H. McDuffie, of Columbus; *Vice-Presidents,* Dr. J. G. Palmer, of Opelica, Ala., and Dr. J. J. Wynn, of Clayton, Ala; *Secretary,* Dr. W. J. Love, of Opelica; *Treasurer,* Dr. A. J. Coley, of Alexander City, Ala.

Talladega County (Ala.) Medical Society.—At its annual meeting in Talladega on January 20 this society elected the following officers: *President,* Dr. E. T. Cason; *Vice-President,* Dr. E. H. Castleman; *Secretary,* Dr. C. W. Burtz; *Treasurer,* Dr. D. P. Dixson.

Memorial Services for Dr. Senn.—Memorial services in honor of the late Dr. Nicholas Senn were held in Music Hall, Fine Arts Building, Chicago, February 2, at 2:45 P.M., under the auspices of Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Chicago Medical Society, Chicago Surgical Society, and the Nicholas Senn Club. President Edmund James, of the University of Illinois, acted as chairman. Dr. Frank Billings spoke on "Nicholas Senn as a Teacher"; Dr. Arthur R. Edwards, on "Nicholas Senn as a Scientist"; Dr. William E. Quine, on "Nicholas Senn as a Man"; Dr. Henry B. Favill, on "Nicholas Senn as a Physician"; Dr. Albert J. Ochsner, on "Nicholas Senn as a Surgeon," and Dr. Daniel R. Brower, on "Nicholas Senn as a Traveler."

Obituary Notes.—Dr. EDWARD C. MANN, formerly of this city died on January 29 at his home in Stoughton, Mass. He was graduated from Long Island Hospital Medical College with the class of 1871 and was the author of several books on medical subjects.

Dr. CHARLES C. HOLCOMBE of Lee, Mass., died on January 31, at the age of seventy-eight years. He was a graduate of Yale Medical School and had practised in Lee for more than half a century. For a number of years he was president of the Lee National Bank.

Dr. WILLIAM J. KRAUSI of Brooklyn died on January 31, at the age of forty-nine years. He was graduated from the New York Eclectic Medical College in 1890.

Dr. JOHN J. GRIFFITHS of this city died on January 31, at the age of forty-nine years. He was graduated from the College of Physicians and Sur-

geons in 1883 and served as interne in Roosevelt Hospital.

Dr. Leavitt R. J. Varnum of Lowell, Mass., died on January 21, at the age of thirty years, after an illness of two days. He was born in Lowell and was graduated from Dartmouth and the Medico-Chirurgical College of Philadelphia.

Dr. Horatio C. Buck of Springfield, Ill., died on January 23, at the age of seventy-five years. During the Civil War he was surgeon of the Second Corps, and he was at one time president of the Tri-State Medical Society. He had been a member of the Pension Board almost continuously since 1877.

Dr. Stephen F. Pomeroy of Springfield, Mass., died on January 18, at the age of eighty years. He was born in Norwich, N. Y., and was graduated from Yale Medical School in 1855. He practised in Staffordville and Hebron before removing to Springfield in 1865.

Dr. H. J. D. Henning of Fargo, N. D., died on January 21, at the age of fifty-eight years. He was born in Wilkinsburg, Pa., and was graduated from the Jefferson Medical College of Philadelphia in 1878. He practised for a time in Beaver Falls, Pa., and Cedarville, Ohio, removing to Sheldon, N. D., in 1883. In 1890 he went to Fargo, where he had remained since that time.

Dr. M. C. Duncan of Madisonville, Tenn., died on January 18, at the age of sixty-one years, after an illness of three weeks. He was a brother of Dr. John Duncan of Atlanta and had practised in Monroe County for thirty-five years.

Dr. A. W. Riley of Omaha, Neb., died on January 31 of septicemia, contracted from a patient he was treating for erysipelas. Dr. Riley was graduated from the New York University Medical College in 1880 and had practised for ten years in this city before going West. He was a native of Plattsburg, N. Y.

Dr. Charles B. Fager of Harrisburg, Pa., died on January 24, at the age of sixty-five years. He was graduated from the medical department of the University of Pennsylvania in the class of 1864.

Dr. John P. Arnold died at Philadelphia on January 25, at the age of thirty-nine years. He was graduated from the medical department of the University of Pennsylvania in the class of 1893. He was subsequently resident physician and later medical superintendent of the Presbyterian Hospital.

Dr. A. B. Brumbaugh of Huntingdon, Pa., died of appendicitis at Philadelphia on January 27, at the age of sixty-three years. He was graduated from the medical department of the University of Pennsylvania in the class of 1866. He was surgeon to the Pennsylvania Railroad and to the Huntingdon and Broad Top Railroad, and he was one of the founders of Juniata College.

Dr. Joseph Thomas died at Quakertown, Pa., on January 28, at the age of seventy-eight years. He was graduated from the medical department of the University of Pennsylvania in the class of 1856. He was president of the Board of Trustees of the Norristown Hospital for the Insane.

An Inoffensive Light.—A convenient night-light for a sick room in a country house in which there is neither gas nor electricity may be improvised by hanging a lantern from a hook screwed into the bottom of an upper window sash on the outside. The light within the room may be regulated by raising or lowering the shade. This obviates the heat and odor from an ordinary lamp in the room.—*Nurses' Journal of Pacific Coast.*

Correspondence.

ANORECTAL FISTULA.

To the Editor of the Medical Record:

Sir:—In the issue for January 18 of your excellent journal I find an article of Dr. Charles B. Kelsey under the above title. Permit me to say a few words to Dr. Kelsey's paper.

It is a deep-rooted inclination of mankind to combat a new idea; Lombroso has called it "misoneismus." I have introduced, instead of this barbarous term, the name "misocainia," and Dr. Kelsey offers me the opportunity to add a new example of misocainia to those which I have collected from history and published in a paper, "Misocainia in Medicine," over three years ago.

I have demonstrated and published my observation that we can make the diagnosis if an anorectal fistula is a complete one or not by passing carbonic acid gas through the external orifice. When we inflate the rectum with the gas very soon a pleasant sensation of warmth will be felt, and this same sensation of warmth is experienced if the fistula is a complete one and the gas passes through the sinus into the rectum. In case the fistula is a complete one and neither tuberculous nor a syphilitic affection, the diagnosis will at once be the cure; that is, in a very few sittings the fistula will completely and permanently be healed. My first patients thus cured I have demonstrated before several medical societies and published these cases in several medical journals and in my book, "Carbonic Acid in Medicine." There are two sides to this cure of which not a word is mentioned in monographs on rectal diseases written by specialists of this branch of our art. It takes most thankful cases for operation from the surgeon and gives them to the general practitioner, who has no experience in operating upon rectal fistula. A special advantage of this method is that instead of causing pain, as probing does more or less, it is a rather pleasant procedure for the patient; where there has been pain the gas application will give relief.

A. Rose, M.D.

126 E. Thirty-fourth Street, New York.

CHLOROFORM ANESTHESIA.

To the Editor of the Medical Record:

Sir:—The several articles on chloroform which have recently appeared in the Medical Record have emphasized the commonly unappreciated fact that chloroform is no more fatal than ether if the more remote effects are taken into consideration. Another important factor, the skill and carefulness of the anesthetist, is too often ignored. An anesthetist who is more interested in the operation than in his patient is a dangerous man to give any anesthetic.

That the proper position, Trendelenburg, and artificial respiration *at once*, and not hypodermics, will save a patient, if anything will save him, who is not breathing and is pulseless from chloroform, must never be forgotten.

No apparatus can ever compare with a simple mask and a careful anesthetist who is giving either chloroform or ether by the drop method.

One point, and a very important one, has not been mentioned in the recent articles, and that is the proper cases in which to use chloroform. Chloroform is dangerous in myocarditis, fatty degeneration of the heart, dilatation from any cause, in uncompensated valvular lesions (not in well compensated valvular lesions), in cases of shock, great depression, or hemorrhage, in long operations, in joint manipulations where very deep narcosis is necessary, dental operations, in cases with tumors pressing on the trachea or larynx, in emphysema, in cases of cyanosis or dyspnea, in empyema, or where any effusion is to be tapped; and, lastly, chloroform has caused many deaths in children having the status lymphaticus, this including adenoids and enlarged tonsils, and chloroform should therefore never be used in operations for their removal. On the other hand, chloroform is particularly indicated in the two extremes of life, in nephritis, in stout patients, in individuals with atheromatous arteries, and in acute respiratory diseases.

As examples of the lack of judgment with which chloroform is often used, and the value or lack of value of statistics as to its safety, I quote nineteen deaths under its use from the report of the Anesthetists' Committee of the British Medical Association, published in 1900. One death was caused by the chloroform bottle falling over and saturating the patient's pillow—of course the death was due to chloroform; three patients had fatty heart; one had intestinal obstruction, four had empyema, one edema

of the lungs, one was suffering from urgent dyspnea, three were very exhausted, and two deaths were laid to the operation itself, leaving three cases of the nineteen not due to bad judgment. I could give many more illustrations, but it is not necessary.

All of the above means that each patient should be given the anesthetic best suited to his particular case, and that when one uses either chloroform or ether in every case, a certain number of patients are exposed to unnecessary danger.

THOMAS G. SLOAN, M.D.
SOUTH MANCHESTER, CONN.

THE TREATMENT OF NERVOUS INVALIDS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Dr. Robert T. Morris in the MEDICAL RECORD January 18, p. 109, in speaking of the sanatorium treatment of nervous disorders, neurasthenia, etc., asks: "Are there many sanatoriums in which the physicians make more than a shallow pretense at finding the real cause of the neurasthenia?" "Do they look for eyestrain or for loose kidneys or involuting appendices and the various well-known leaks below the water line?"

In making reply to Dr. Morris, it is not my intention to enter into any detailed discussion of the possible controversy which may exist regarding borderland conditions wherein surgeon and physician vie for honors, or even to discuss the treatment of neurasthenia and other psychoneuroses, which are now prominently in the limelight of both professional and lay opinion. I simply want to endorse what Dr. Morris has said, "that it is a profitless philosophy" to fire any system at us "for a flock shot" as a method of treatment, but I want to go further and say that this profitless philosophy applies also to the surgical shot delivered "below the belt" in the psychasthenic patient. Just here is where I would ask a question: Are there many surgeons who make more than a shallow pretense at finding out the real cause of the neurasthenia? Do they feel satisfied that in eyestrain, or loose kidneys, or involuting appendices, or the various leaks below the water line are the real causes of the psychoneurosis called neurasthenia? Are there many surgeons who proceed to study the real clinical psychology of their patient with a hope to find somewhere in the field of consciousness the mental perversion, the obsession which in itself is the disease and not the localized phenomena of which pain, anorexia, etc., are the prominent symptoms?

My experience teaches me a more profitless system, therapeutically (not financially) speaking, than that of surgical interference as a means for relief from the ills to which the psychasthenic is heir does not exist. Not only is it profitless, but it adds to the burdens of such an unfortunate one, whose diverse mental states are already wafted by the currents and counter currents of morbid self-consciousness, and not infrequently the surgical interference is the one necessary straw with which to break, perhaps forever, the patient's back. One who has seen much of the human wreckage which drifts into the sanatoriums from the operating rooms often has questioned his faith in the breadth of vision, depth of experience, and profundity of diagnostic acumen of some of the operators. One cannot help but feel that while modern surgery, with its masterly technique, whereby "beautiful" surgical results are attained, is a boon to humanity, yet it is also a fact that this brilliancy of results, technically speaking, too frequently is the license for needless deforming and unwarranted operations upon the defenseless suggestible psychasthenic. The misguided surgical enthusiast who sees no further than that part of the anatomy which he regards as offending, is responsible for much of the unnecessary surgery as practised upon nervous women. If he but knew more of physiological psychology, morbid thought processes in particular, he would find that many of his conclusions regarding surgical lesions were illogical and his generalizations unwarrantable. This unprepared surgical clinician should know how in nervous invalids the association of ideas which produces judgments just as frequently works in reverse order as well as along the natural parallel lines when associations of judgments and external excitants are intact. As a consequence, the association of ideas influences the sensations, and we have defined hallucinations of pain and other delusive ideas which lead the surgeon astray and compel the patient to believe herself the victim of a condition remedial only by surgical means.

Space will not permit me to go further into these processes of morbid disturbances, but they are familiar to all neurologists, and, I am pleased to say, to many of my skilled surgical friends. The trouble lies, I am sure, in the failure to recognize on the part of the gynecologist, the most frequent offender, as well as the surgeon, the fact that he is dealing with an individual, that the patient is an individual and the individual is the patient, and to know an individual means more than the mere study of an isolated part of her anatomy. It is therefore incumbent upon the trained clinician in gynecology to know his patients "above the belt," to know what should be the great ideal of every true scientist in medicine and surgery, the individual. To accomplish this, at least to the point of practical service, he must know human nature, which, after all, is but the reflected self, the reaction of the mental processes, the emotions, as shown in mental attributes and conduct, and with such a knowledge he could engraft a *profitable philosophy,* not only on his own useful life, but upon the lives of the introspective, impressionable, suggestible individuals who come to him as patients. Such a philosophy, perhaps, has not been dreamed of by the commercialized surgeon nor the surgeon working to complete a "new series of a hundred cases of," etc., but to the true clinician, guided by the true spirit of service, sacrifice of service if need be, such a philosophy will be profitable in creating confidence calculated to carry conviction and permanent relief to the obsessed nervous invalid.

What we need, and I am sure that Dr. Morris will agree with me in this statement, is more of genuine medical and surgical culture as the real incentive to honest, thorough, and scientific work. Then, in the wholesome atmosphere of such culture, we need not ask questions couched in the language of the satire of a Horace, but may we not hope for justice and the goodness as exemplified in a Marcus Aurelius?

FRANK P. NORBURY, M.D.
MAPLEWOOD SANATORIUM, JACKSONVILLE, ILL.

IODINE IN ERYSIPELAS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR—I read with great interest the article in the current number of your journal on the surgical uses of iodine. *In re* the use of iodine in erysipelas: In my profession we find an erysipelatous condition of the skin of cattle attacking *only the white or light colored skin:* thus we may see the white cutis hanging in rags, while the black is supple as a glove. As the old Higginbottom treatment of erysipelas with silver nitrate blackens the skin and as iodine temporarily discolors it, as (in my section) erysipelas is rare in the negro, is it not possible that the dark color shuts off certain rays necessary to the well being of the germ? A favorite, old-fashioned, "mother's remedy" is a cranberry poultice, and this, of course, stains the skin.

T. B. ROGERS, D.V.S.
WOODBURY, N. J.

OUR LONDON LETTER.

(From Our Special Correspondent.)

SLEEPING SICKNESS CONFERENCE—PRACTICAL TEACHING OF MIDWIFERY—A MILD FORM OF DIPHTHERIA—THE SETON—COLLEGE OF SURGEONS AND WOMEN—ACTION FOR LIBEL AGAINST THE "LANCET"—SOCIETY FOR EXTERMINATING RATS.

LONDON, January 17, 1908.

THE second International Conference on Sleeping Sickness, which was to have met last November and was postponed to January 9 at the request of the German government, has again been postponed, this time, it is said, at the request of France, but will probably meet next month. There is some question of another commission being sent from here to Uganda to follow up the work of the Royal Society's Commission. It is in Uganda where the work is being carried on the largest scale, and the ravages of the scourge have been most terrible. There a system of segregation has been tried and, costly and difficult as it proves, much importance is attributed to it. There, too, the clearing of the jungle in the neighborhood of cantonments, ferries, and landing stages is being done as far as possible, but the immense distances are a bar to the clearance of the whole belt infected by the tsetse. Dr. Hodges of the Colonial Medical Service is directing the work in Uganda. A commission from the Liverpool Tropical School is also at work in Central Africa, and other investigations are being carried out by French, German, and Belgian medical expeditions. The postponement of the conference is perhaps not to be regretted, as no great discovery was to be reported. The disease is still extending its ravages

along the Nile and the Congo; some traces of it have appeared in Rhodesia. Where it originated is uncertain, but it was first observed on the west coast of Africa. In the nineteenth century it seems to have become firmly established from Senegambia to the southern limits of the Portuguese possessions. The transportation of negroes to the West Indies carried it across the Atlantic, and it obtained a footing in Brazil and some other parts of South America, but it has apparently not been able to maintain a hold in your hemisphere, though the fact of its once having appeared there is one for serious reflection.

The Dublin School of Midwifery has long maintained the chief position in these islands. Many earnest London students have gone over to obtain clinical instruction and more extensive experience than they could obtain here. It was, therefore, to be expected that the changes recently recommended by the General Medical Council should excite misgivings and lead to a discussion in the Irish Academy. Accordingly, the subject was brought before the Obstetrical Section by Sir Wm. Smyly, who said that the General Medical Council had been hampered by trying to reconcile the desirable with the possible. They could only make very moderate demands in England because the opportunities for teaching practical midwifery were very meager. But in Ireland, with her great lying-in hospitals, the position was different. A six months' attendance in one of these could be more likely to produce an efficient obstetrician than the recommendations of the General Medical Council, to adopt any of which would be a distinct retrogression. He admitted that the results of general practice in Ireland were unsatisfactory, but that could only be because the students had failed to profit by their advantages. To remedy this they must be compelled to attend demonstrations, and a desire to study practical obstetrics must be aroused in them by practical clinical examinations in the subject as recommended by the council. Every student should know that a knowledge of obstetrics and gynecology would go as far in passing as similar knowledge of the other departments. How to carry out this was the question.

Dr. Howe said men could be taken to a lying-in hospital for a clinical examination just as well as to a hospital for chest diseases. It was a grave defect that they had only to show they had taken out their attendances. Midwives in Dublin were better off, as they were compelled to attend daily.

Dr. Kidd suggested attendance on a number of cases in the house under the supervision of the medical officer, followed by the requirement to write full notes of the whole course of the puerperium in at least five of the cases. As to three or six months, a man living in the precincts of a hospital would learn more in a month than another attending full period on two days a week.

Dr. Purefoy said arrangements should be made for examiners to visit the hospitals once a month or so and examine certain students, thus obviating the necessity of taking many at one time. Students should also be encouraged to reside in a maternity hospital for at least a month.

Dr. Jellett said they would generally agree that the recommendations of the council were good except the reducing of attendance to three months. Students had a habit of going to maternity hospitals at times when they were free from lectures and examinations.

Dr. Rowlette objected to the excessive amount of surgery required by gynecological examiners. It was not the duty of the general practitioner to perform highly technical operations. Those who would be experts must make up after qualifying examinations were done with.

The President, Dr. E. H. Tweedy, said it was pleasant to see the unanimity with which the obstetrical section opposed curtailment of hospital work. Outside the section he regretted that many teachers thought a six months' course of obstetrics and gynecology unnecessary and there was danger that the royal colleges might cut it down to three months.

On the proposal of Sir Wm. Smyly, seconded by Dr. Jellett, a resolution was unanimously passed against reduction and in favor of a clinical examination.

Another resolution was also unanimously passed appointing a committee to urge upon the licensing bodies the inadvisability of curtailing the course.

Following this excursus into the domain of the Irish academy's doings, let me add a word or two on a paper in her medical section on an outbreak of sore throat. It was said by Sir John Moore, who called the disease "diphtheritic fever," though he might as well have used the adjective in *al*, for we do not use the noun in *itis*. In the cases he found the bacillus, but some of the typical symptoms were absent. The outbreaks (for there were five distinct occurrences) were in a girl's school, extended over a couple of months, and were followed by two sequels. The patients had coryza, tonsillitis, foul breath, coated tongue, desquamating, punctated rash on roof of mouth, swelled cervical glands, roseolar rash on skin (in twelve out of eighteen cases), and desquamation (three cases), most marked on the hands.

Dr. Kirkpatrick said ten or eleven recruits with similar symptoms sometimes came to his hospital in one day and soon recovered. In most cases there was a coccus, never a bacillus, nor had he seen a rash or enlarged glands or membrane.

Dr. Day said diphtheria was commoner in the city than was supposed. A membrane was not necessary to diagnose it. Bad teeth and constipation predisposed to it.

Professor White said the bacilli were exceedingly susceptible to desiccation, drying quicker than other organisms of similar virulence. This might account for some negative results of swabs.

Dr. Boxwell used the word attenuated to describe an organism he had often found in slight sore throat. It was rather smaller than the typical bacillus.

In reply to questions Sir John Moore said the mouth was attended to throughout in all cases. In nearly all the rash appeared before antitoxin was injected. The infecting organism was undoubtedly the bacillus diphtheria. He had found quinine a good disinfectant for the mouth.

Sporadic attempts to restore the seton to the favor it enjoyed in a previous generation are not without interest. Among the few practitioners who have lately advocated its use is Dr. Wilson Parry, who has modified the old seton needle by narrowing the shaft, so that when the head of the blade has passed through the fold of skin there is no further friction from the shaft or the tape.

Mr. Whitehead of Manchester reported in 1901 a case of migraine cured by seton after it had long defied other treatment.

Mr. Campbell and Dr. Parry have both recorded cases of Menière's disease relieved by the seton, and Dr. E. Pratt lately added one in which he had tried the seton successfully for symptoms suggesting cerebellar tumor in a child. In these days of asepticism the seton seems less formidable and prolonged counterirritation has been coming into favor, as in the use of blistering for rheumatic diseases.

Yesterday the council of the Royal College of Surgeons appointed a committee to prepare a circular to the members asking their views as to the admission of women.

The *Lancet* is being sued for libel in the King's Bench by a man who sells an asthma secret remedy which is shown to contain atropine and cocaine. The man professes not to know the composition of the liquid or to have any knowledge of drugs, but obtains the remedy from his brother in the United States. The alleged libel is defended as fair comment. As the trial is not concluded, no more may be added save to report that some doctors (and, of course, some fashionable lay persons) gave evidence in favor of the plaintiff. Among them was a hospital physician and Fellow of the College of Physicians, which august body is supposed to forbid dealings with secret or proprietary articles. What will the grave censors of this college say?

A new society was formed last week. Its object is the extermination of rats and other vermin. The meeting, at which the resolution was adopted, was attended by a number of doctors. Sir J. Crichton-Browne occupied the chair and in his speech described the ravages of rats and declared it was the duty of all to join in the crusade. With one dissentient—a lady who objected to any plan of killing rats which would entail suffering—the meeting agreed to forming the association and appointed Sir L. Brunton, president; Sir J. Crichton-Browne, Sir Patrick Manson, Surgeon-General Bradshaw, and Professor Simpson, vice-presidents. Several other doctors were appointed on the committee.

Gonorrheal Vaginitis.—In uncomplicated gonorrheal vaginitis J. W. Taylor advises a vaginal suppository of silver nitrate (gr. ¼) every night, and a douche of crude acetic acid (½ ounce to 1 pint of water) in the course of the day.—*The Hospital.*

OUR PARIS LETTER.

From Our Special Correspondent.

THE NOBLE PRIZE—LATENT TUBERCULOSIS—BACTERIOLOGY OF ARTICULAR RHEUMATISM—THE OPHTHALMO-REACTION WITH TUBERCULIN.

PARIS, December 20, 1907.

As is well known, every year the Swedish Government awards to one or more of the leading scientists of the world a prize of 190,500 francs. This year a Frenchman received the Nobel prize in medicine, the recipient being Prof. Laveran. The importance of his discoveries is widely recognized. In 1878 he discovered the hematozoa causing malaria and this advance opened an entire new world not only to general pathology but also to semeiology, hygiene, and preventive medicine. His researches have been collected in his "Traité du Paludisme." His later work on trypanosomes and trypanosomiasis shows what medicine may expect from an observer who like him devotes all his time and all his energy to laboratory investigations.

In the Société de l'Internat Bezançon presented an interesting paper on latent and attenuated pulmonary tuberculosis. Latent tuberculosis, he said, was extremely frequent and consisted in pleural adhesions, apical scars, or chronic pneumonia, that is, in cicatricial lesions. Some of these cases remained latent indefinitely and had no clinical history, others represented the first stage of evolution of the disease which did not appear until long after the onset of the infection, as the result of an overexertion, a traumatism, or an infectious disease. These latent forms of tuberculosis manifested themselves especially by changes in the breath sounds at the pulmonary apices, the general state of health remaining fairly good, and by occasional hemoptyses. Grancher deserved the credit of having pointed out the value of localized diminution of the respiratory murmur at the apices as an early sign of pulmonary tuberculosis. Laboratory methods, including the tuberculin test, the skin reaction, and serum diagnosis, although still of somewhat undecided value, could indicate to some extent whether the disease had already become active.

Thiroloix and Rosenthal presented a study of the bacteriology of acute articular rheumatism before the Société Medicale des Hôpitaux. By inoculating anaërobic media with blood from a rheumatic patient they regularly obtained a bacillus presenting all the characteristics of the organisms already described by Achalme and Thiroloix. The authors found that the bacillus was pleomorphic and that on becoming accustomed to aërobic existence it resembled a diplococcus. This fact explains the difference in results obtained by various observers. Triboulet and Silbert had also described the biological characteristics of the anaërobic bacillus reported by Achalme in 1891, and said that its constant presence in the blood in acute rheumatism justified considering it as the specific germ of the disease. While Thiroloix and Rosenthal had witnessed the transformation of the anaërobic bacillus into an aërobic diplococcus only in the test tube, Triboulet and Silbert had, on the other hand, detected both forms in the human body.

Sporotrichosis has lately been the subject of an investigation by the Société Medicale des Hôpitaux. Dominici and Rubens Duval observed a case of sporotrichosis of the index finger with secondary infection of the lymphatics. The patient was a woman who had inoculated her finger while peeling a potato. As a result of this invasion of the pathogenic mold a specific lymphangitis of the arm was caused. Beurmann, Gastou, and Brodier have also reported an interesting case of the same infection, which was particularly noteworthy because in addition to cutaneous nodules resembling those of tuberculosis there were also laryngeal lesions. The case was furthermore of importance from the etiological point of view, since for thirty-five years the patient had been a vender of salads in the public market and it therefore appears that sporotrichitic infection takes place through the intermediation of vegetables. Duval and Monier-Vinard studied the condition experimentally. Inoculation of the sporotrichitic pus into the guinea pig did not provoke any lesion, but mice and cats were susceptible to infection. In the pus obtained from human cases the parasite grew and formed a network of mycelial threads.

The society has also lately been devoting much attention to the value of Calmette's ophthalmo-reaction with tuberculin. Lenoble, Le Moal, Guichard, and Toché conclude from the study of 163 cases in which this method was used as follows: 1. That the procedure cannot be absolutely depended upon for diagnostic purposes, especially in doubtful cases. 2. That an individual who does not give the reaction is not necessarily free from tuberculosis. 3. That the reaction when positive does not necessarily imply that an active lesion exists and that it is possible that an individual having acquired a tuberculous lesion at some previous time may retain the property of giving the ophthalmo-reaction even after the lesion has become entirely cicatrized. Dufour also criticised the reliability of the ophthalmo-reaction. He had found that not all tuberculous persons, even excluding cachectic patients, react to the tuberculin, and he thought that in a large number of cases the interpretation of the results obtained by the method was an extremely difficult matter. Chaufard had recently seen a man suffering from chronic appendicitis who, from the clinical standpoint, seemed tuberculous. The ophthalmo-reaction was tried and was negative, but at the operation the patient was found to be suffering from tuberculosis of the appendix and cecum. Marcel Labbe obtained a positive reaction in the case of a patient who died later, but at the autopsy, although the most careful search was made, not the least trace of a tuberculous lesion could be found. Netter pointed out that some grave occular complications had resulted from this test. He also recalled the researches of Krause, who showed how easily the conjunctiva of typhoid patients reacted to tuberculin. Of twelve typhoid patients not suspected of tuberculosis eleven gave a positive reaction. Morax did not believe that there had ever been serious damage to the cornea caused by the application of the test. Comby concluded from a study of a large number of observations that in children the procedure was an infallible method of recognizing latent tuberculosis. He used a 1-200 solution of tuberculin and not a 1-100 solution, for with the latter he had experienced two violent reactions. Lesné regarded the ophthalmo-reaction as a perfect diagnostic measure. He had had only a single bad result in which a purulent conjunctivitis was caused from which the patient recovered completely. In adults he had twice in 150 cases observed instances of obstinate keratoconjunctivitis and he therefore now made use of a 1-500 solution, which was just as reliable in results and with which he had never had trouble. Mery Delille and Mlle. Jiry considered the ophthalmo-reaction as producing a grave reaction in infants. Massry, who had studied the method especially in adults, stated that it had not given him results in harmony with the clinical facts and the autopsy findings. He had three times obtained a positive reaction in a patient who on autopsy was shown to have died of generalized carcinosis, and he three times obtained a negative result in a case in which the autopsy verified the diagnosis of peritoneal and suprarenal tuberculosis. Achard and Feuille studied the effect of nervous lesions on the ophthalmo-reaction in patients suffering from peripheral facial palsy and hemiplegia, and had always found that the reaction was more pronounced on the paralyzed than on the healthy side. Most of the patients were entirely free from any demonstrable tuberculous lesion.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

DIAGNOSIS OF APPENDICITIS—LEUKEMIA IN POULTRY—LIGHT BATHS IN HEART DISEASE.

COPENHAGEN, January 4, 1908.

PROFESSOR THORKILD ROVSING has published a method of examining the diseased cecum and vermiform appendix which promises to be of great help in cases where the diagnosis is difficult. In 1904 he had two cases of abdominal inflammation under his care, both of which, going by the usual signs, seemed to be cases of perityphlitis. The only difference was that the one patient experienced a very severe stabbing pain at McBurney's point when the descending colon was slightly compressed by a hand on the abdominal wall, while the other patient failed to feel the least pain in spite of rather vigorous massage of the colon descendens. On operation the first case turned out to be an ordinary appendicular peritonitis, while the last did not present any alteration of the appendix or gut, but in this case the colon was seen to be lifted up by a retroperitoneal swelling, a perineal phlegmon, which was opened by lumbar incision. Since then Prof. Rovsing has employed the following procedure as a routine examination in cases of disease in the right iliac

fossa. He applies his left hand, palm downwards, against the integuments of the left iliac fossa, and then exercises a pressure against it by means of his right hand, making the superposed hands glide upwards along the descending colon towards the left flexure. As a result of this procedure the gases contained in the large intestine are placed under a greater pressure than before, but the pressure is felt only in places in which the intestinal wall is in a state of inflammation, so that in cases of typhlitis or appendicitis a severe darting pain arises at McBurney's point on compressing the left iliac fossa. Judging from his experience in about one hundred patients examined during the last three years, Prof. Rovsing regards his method as a sure, sensitive, and valuable diagnostic help. Firstly, it will contribute to a correct diagnosis in the many cases in which the nature of a painful intumescence in the right iliac fossa cannot otherwise be ascertained, when, for instance, the choice stands between a renal affection, ureteric or hepatic lithiasis, salpingitis, and appendicitis. Only when the painful intumescence is caused by an inflammatory disease of the appendix or cecum Rovsing's method of compressing the healthy descending colon will elicit pain at McBurney's point. The second field for application of the method is formed by the acute cases in which a direct palpation of the right iliac fossa is dangerous, painful, or impossible on account of muscular contraction, and therefore best omitted. Here the compression of the descending colon quickly and without any danger to the patient gives rise to the typical pain at McBurney's point, if the case is one of inflammation of cecum or appendix.

At a recent meeting of the Copenhagen Biological Society Drs. V. Ellermann and O. Bang reported their investigations of spontaneous and experimental leukemia in poultry. With regard to leukemia it has up to now proved impossible to ascertain the true nature of the disease, some pathologists regarding it as an infection, while others consider it a sort of malignant new growth. As long as experimental transmission had not been carried out successfully, no progress could be made in this question. It fell to the lot of the two investigators first to observe true leukemia in a hen and afterwards to inoculate it into other poultry. The leukemia of poultry has not been described before; it is very similar to that of the human race. The increase of the leucocytes may become very considerable, the proportion of leucocytes to erythrocytes being as 1 to 2. The large mononuclear cells are particularly increased in number, and pathological forms are often seen (myelocytes). Besides the alteration of the blood, the liver and spleen become enlarged, the color of the bone marrow changes to a gray-red, and the capillaries of the bone marrow and the liver are filled with leucocytes. In the liver infiltrations of myelocytes may be observed. Intravenous injections of an emulsion of organs from a case of spontaneous leukemia produced in the course of three months leukemia in healthy poultry. The organs presented the same alterations as in the spontaneous disease. The different pathological processes apparently take place as follows: (1) Proliferation of the leucocytes in the capillaries of the bone marrow and the liver. (2) Anemia. (3) Leukemic alteration of the blood. (4) Infiltrations in the liver. The investigators failed to demonstrate the process of microbes. They are, however, disposed to regard the disease as an infection, and are now making further researches in order to decide whether this infection is due to the leukemic cells *per se* or to parasites.

I have on former occasions written you about the light bath treatment in heart diseases recommended by Dr. Hasselbach of the Finsen Light Institute. This treatment has been tried by Drs. V. Bie and H. T. Bing, who communicated their experience of it in the last meeting of the Society for Physical Therapeutics and Dietetics of Copenhagen. Instead of the expensive 150 amperes arc lamp, originally employed by Dr. Hasselbach, they had used "uviol lamps," *i. e.* incandescent quick silver lamps with uviol glass. These lamps were worked with a far weaker current and their light contained many of the effective ultraviolet rays, but only very few of the inconvenient and inactive heating rays. After an exposure of a quarter of an hour to half an hour with the lamps in a distance of 15 to 30 centimeters the skin showed a very pronounced erythema, which persisted the same length of time whether uviol lamps or the arc lamps had been employed. The erythema, having stood unaltered for about a week, gradually subsided, and after a fortnight the color of the skin was chiefly brown on account of pigmentation. But even several months afterward it was possible to demonstrate a slight remnant of dilatation of the skin vessels. Presumably this dilatation did not extend more than a few tenths of a millimeter into the skin, but even so it was no small additional quantity of blood that might be absorbed by the skin. They thought it impossible to state on the present standpoint of our physiological knowledge what this increase in the blood supply of the skin might mean for circulation. Next they reported their clinical experience. Their patients with heart disease had generally improved in so far as they slept better, or the pain and dyspnea became less marked. But unfortunately it was impossible to get reliable, objective criteria for judging the state of the patients. One patient with a mild form of Graves' disease had improved, but another became much worse after two treatments. They had seen the best results in cases of neurasthenia. The only indisputable effect of the treatment was the dilatation of the skin vessels, which might be of no small importance in diseases complicated with spasm of the peripheral vessels. But further researches were needed in order to arrive at the true indications for the chemical light bath as a therapeutic means. Dr. H. Jacobus, formerly of the Finsen Light Institute, mentioned the good effect he had observed on the pain in cases of angina pectoris. Professor Israel-Rosenthal was no great adviser of the new treatment. He had had under his care eight or nine of the patients treated in the Finsen Light Institute. Of these only one had improved considerably, but he regretted to state that the improvement did not prove lasting. For the other eight he had only observed a slight improvement, such as might very well be ascribed to the effect of suggestion, or no improvement at all. He was, therefore, unable to agree with the advocates of the treatment. Also other speakers attributed the observed effect wholly or partly to suggestion.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 23, 1908.

Acetonuria and Laparotomy.—E. B. Young and J. T. Williams report two cases of acetonuria in fifty-two abdominal sections before operation and in twenty-seven in the same series following laparotomy. In minor operations, acetonuria followed in fourteen out of fifty-four cases. The test used was, acidification of the urine with glacial acetic acid, addition of sodium nitroprusside and overlaying with ammonium hydrate. Later they examined the urine of all patients on admission to hospital and acetonuria was found in twenty-six out of seventy cases. The authors refer to the literature of the subject as appearing in recent years. They conclude: (1) That acetonuria is a common accompaniment of a large number of pathological conditions. (2) That in these conditions it is the result of disturbances of metabolism. (3) That the occurrence of acetonuria seems to bear especial relation to disturbances of the gastroenteric tract. (4) That possibly many of the cases of reported acetonemia following operation were the results of other diseases, especially sepsis. (5) That the formation and excretion of acetone, and probably also of its supposed antecedents, diacetic acid, β-oxybutyric acid, etc., following operation, is the result of altered metabolism and, in the adult at least, not the cause of any constitutional disturbance.

Trypsin in the Treatment of Malignant Tumors.—W. P. Graves reviews the theories of Beard and other writers and then describes his personal experience with five cases of recurring mammary cancer and one of recurrent squamous-cell cancer of the uterine cervix. All had had done everything that surgery could do and the diagnosis had been verified by the microscope. All of the cases were observed for at least six months and most of them for fourteen months. Injections were given in the usual way—beginning with from 3 to 5 mg. of trypsin and increasing the dosage up to even 80 mg. In each case there was a gradual inevitable progress of the disease and four of the patients are already dead. In spite of these results the author has felt impelled to persist in its use. He notes that in recurrent breast carcinoma, it has been possible to keep well under control the nodules which make their appearance. A few injections of trypsin into one of these circumscribed nodules will cause it either to disappear or to shrink greatly, and that particular nodule will not grow again. This has been the most striking re-

sult of the treatment. The cervix case seemed to respond to the treatment more than the mammary cases. Treatment was kept np for six months in this case and during this time there was extremely small local progress of the disease in the vagina. There was practically no pain, and there was absolutely no odor from the cancerous cervix. The patient was able to be up a number of hours each day and was comfortable and happy. There was, however, a gradually increasing loss of weight and cachectic appearance, so that though the disease was being checked locally and symptomatically, it was constitutionally making progress. The patient finally died from inanition on account of a sudden occlusion of the pyloric end of the stomach. Operative measures were out of the question. As the patient became weaker during the last days, it was necessary to stop the trypsin treatment. Pain and the foul odor immediately appeared.

New York Medical Journal, January 25, 1908.

Unique Case of Infectious Orchitis.—The case is reported by J. G. Beardsley. A boy of eleven years returned home where his sister was sick with bilateral parotitis. He was ordered to use an antiseptic mouthwash and to keep as far away as possible from his sister. Eight days after his return he came down with a temperature of 102°, no pain or swelling in either the parotid or submaxillary glands, but a marked swelling of the left testicle, which was extremely tender to the touch, and the skin of the scrotum over which was decidedly reddened. The boy recovered completely in four days, and there was no difference in the size of the testicles. There had been no urethral discharge or no history of trauma, and as far as could be learned, no exposure to parotitis until his return home eight days before. Cases of parotitis have at times been reported, especially in epidemics, in which the swelling of the gland was very slight, and among them a few cases in which the parotiditis became visible only shortly after the patient was allowed to take fluid, but, as far as the author has been able to find in the literature (if we grant the possibility of the orchitis being caused by the infectious principle which causes parotiditis), this case is unique, although Osler mentions the fact that such a condition has been seen.

Postdelirious Alcoholic Stupor.—This topic receives a thorough consideration by C. K. Stillman. Its synonyms are "alcoholic cerebral edema" and "wet brain." A study is presented of ninety-eight patients, men and women, admitted to the alcoholic wards of Bellevue (New York) Hospital. Of this number twenty-two were attacked with "wet brain" and of this number eighteen died. Symptoms of the type of stupor referred to are almost invariably preceded by a greater or less degree of alcoholic delirium. The author notes that the type usually considered in speaking of alcoholic wet brain is a transudate pure and simple and not included under the category of the low grade meningitides. However, there is in alcoholic edema a tendency to low grade inflammatory changes about the blood-vessels and meninges that is far more marked than in wet brain of other types. Transudation takes place from the piaarachnoid and occasionally from the small blood-vessels penetrating the brain substance. About these latter a small watery zone may sometimes be made out. The changes in the brain substance and meninges are those so often described under chronic alcoholism. Symptomatology is fully considered. The diagnosis is not always easy. Pernicious malarial fever with meningeal involvement and tuberculous meningitis have been diagnosticated in cases which proved to be of the nature described by the author. Treatment is largely a problem of vitality and elimination, forced feeding and stimulation. Caffeine, camphor, and strychnine are reliable drugs. Alcohol cannot be cut off immediately. Tapping the cord produces results for a short time, say a day or so. The relief of pressure or the change in circulation incident to the removal of the fluid seems to cause a temporary accession of energy, so that a stuporous case may rouse up and assume for a short time the active movements and facies of an earlier stage of the disease. Indeed, there is not infrequently a resumption of active delirium until the fluid reaccumulates. No permanent results are noted. The fluid removed is usually in increased amount and under increased pressure. Otherwise, it differs in no respect from normal fluid either in appearance or in the distinctive count.

Cholelithiasis.—A study of twenty-five operative cases is made by C. H. Peck who gives his results in tabulated form. Six patients presented recurrent attacks of pain in the upper abdomen without fever, jaundice, tumor, or rigidity, and with but slight tenderness. Nine presented cholelithiasis with acute or chronic cholecystitis or empyema of the gall-bladder. Four had acute gangrene of the gall-bladder. One had calculi in the common duct and one primary carcinoma of the gall-bladder. Two died, one suddenly on the fourth day with symptoms suggesting cerebral embolism and one forty-eight hours after operation from general peritonitis. Of the operations performed twenty-two cholecystectomies resulted successfully, as did also one cholecystostomy, while two of the former were fatal. The author notes that cases of stone in the common duct require, in addition to the removal of the shrunken gall-bladder, incision into the common duct, removal of stones and thorough exploration of common and hepatic ducts to be sure that none are left behind. Hepatic drainage by means of a tube passed into the hepatic duct, around which the incision into the common duct is sutured, should be employed as a rule. Such a tube is removed in from three to seven days, the discharge of bile usually ceasing spontaneously at about the end of the third week.

Journal of the American Medical Association, January 25, 1908.

Cancer of the Breast.—The factors that unfavorably influence the prognosis of cancer of the breast are reviewed by W. D. Haggard, who specially calls attention to the importance of not neglecting any tumor, however small, in this situation, and the value of exploratory operations in such cases. He blames practitioners for the too common advice to wait. There is nothing more simple, he says, than the microscopic examination of a lump in the breast. The tumor, if small, can be easily removed through a slight incision, and if large, a portion can be removed and sent to a pathologist for examination, the wound being left open, with two or three provisional sutures and packed with Harrington's solution or alcohol to prevent any of the cancer cells from wandering into the blood-vessels and setting up metastases. Unfortunately, the surgeon seldom sees these patients early enough, and when operation is required it must be extensive to include all the possible lymphatic routes of infection. He sums up the contraindications to operation as follows: 1. Fixation to the chest wall. 2. Extensive axillary involvement when all the structures are fused. 3. Enlargement of the supraclavicular glands, which are secondary groups. 4. The "pig-skin" edematous lymphatics over the breast signifying that all the routes of lymph return are blocked. 5. Multiple shotlike nodes in the skin, commonly seen after osteopathic treatment, which bruises the vessels and spreads the cells over the chest with the formation of infected nodes. 6. Suppuration of the cancer itself (the only operative fatality in his series occurred in a case of this character). 7. Cachexia, the death mask of constitutional dyscrasia. The *x*-ray treatment is advisable, he states, after fixation, especially in advanced cases. While it does not kill cancer, except in very superficial forms, it will produce a higher type of local resistance, will contract lymphatics and will deposit fibrous tissue in and about the glands, thus delaying the progress of the disease. The principal points of the technique in operation for breast cancer are given.

Glycuronic Acid in Conditions of Diminished Oxidation.—C. W. L. Hacker reports the results of a search for glycuronates in the urine in order to test Mayer's claim that they appear as an early sign of incipient diabetes as a consequence of diminished ability of the organism to oxidize the carbohydrates. A second series of tests was so made of urines of patients after operations involving the use of chloroform or ether anesthesia which, as is well known, is followed by a diminished oxidation. In the first series of tests the glycosuric urines were examined quantitatively as follows: By means of Fehling's and Gerrard's titration methods, by Lohnstein's newest model of saccharometer, and by polarization before and after fermentation. In the second series of determinations qualitative examination was made before and after yeast fermentation, using Fehling's, Nylander's, phenylhydrazin, orcin, and polarization tests. Control urines before operation were also tested in the anesthesia cases. In the chloroform anesthesia, oxygen was also given, the average ratio being fifteen minims of chloroform and three or four liters of oxygen a minute. The merits and methods of the different tests are discussed at some length. In the first series of examinations 384 samples of supposedly normal urine and 14 of glycosuric urine were tested, and in neither were glycuronic acid or its salts found present in excess. In the second series 273 specimens were examined, 261 after ether, 7 after chloroform, and one after a mixed anesthesia with both. Control tests before operation showed no reducing compounds present. Eleven of the post-ether samples gave positive reductions with Fehling's test, and on further

investigation the reducing substance was found to be dextrose in amounts from 0.2 to 1.3 per cent. Hacker's conclusions are stated as follows: 1. Dextrose appeared in 4 per cent. of 261 samples of urine collected after operations in which ether was employed. 2. Neither glycuronic acid nor its conjugate salts are eliminated in the urine under conditions of diminished oxidation, such as occur during diabetes mellitus and ether or chloroform anesthesia, when the latter is combined with oxygen. 3. The pseudoreduction obtained with about five per cent. of normal urines is to be ascribed to faulty methods of performing the test. It is not due to an increase in amount of uric acid or creatinin.

Mutual Relations of Upper-Air Tract, Jaws, and Teeth.—W. S. Bryant considers the nose as the axis on which the facial development depends, and that any pathologic variation of this part produces trouble elsewhere. Most of the evils thus produced are traceable to mouth breathing due to nasal obstruction. Many evils, in his opinion, are traceable to this cause; besides oral infection and its consequences, we have imperfect development of the maxillary bones, dental irregularities and deficient development of the nose, sinuses, and all parts of the face. Any one of these factors may be primary, but the nose is usually first to blame. It is of extreme importance, therefore, to insure nasal breathing from the earliest infancy before habit is formed or structural changes are produced. If the obstruction is acute, as from catarrhal conditions, the prognosis is good; if chronic mandatory mouth breathing exists, the prognosis is good if surgical and orthodontal measures are resorted to soon enough, but after the twenty-fifth year it depends on the extent of the arrest in development. The sooner the defect is remedied the more simple and effective the treatment. "The importance of nasal breathing," Bryant says, "is manifold; it is a safeguard against infection, an aid to proper physical and mental activity, through a sufficient supply of oxygen, a requisite of moral strength, esthetic outlines, and a protection to the faculties of hearing, speech, and smell." The course of treatment to pursue if nasal breathing can be maintained, is to straighten the teeth first and operate on the nose later, if necessary. If it cannot be maintained, operate on the air passages sufficiently to allow nasal breathing before regulating the teeth. Then regulate the teeth, and, last of all, do what final work that is required on the nose.

The Diagnosis of Appendicitis.—R. T. Morris calls attention to the value of tenderness over the right sympathetic lumbar ganglion (one and a half inches from the navel on a line with McBurney's point) as a diagnostic sign in appendicitis in addition to the well-known McBurney's point. He gives the following general statement: 1. "In the early stages of an acute infective process of the appendix the right lumbar ganglia are tender and the left lumbar ganglia are not tender. (The left lumbar ganglia may be described for diagnostic purposes as lying an inch and a half to the left of the navel.) Under these circumstances the point here described is of secondary importance, while McBurney's point is of prime consequence. 2. (A) When an acute inflammatory process of the appendix has subsided, leaving a mucous inclusion or scar tissue, there may be no tenderness on pressure at McBurney's point, but there is tenderness at the point here described and no tenderness at the point of the left lumbar ganglia. (B) When the appendix is undergoing a normal involution process, with replacement of its lymphoid coats by connective tissue, digestive disturbances and various local neuralgia may be due to nerve filaments entrapped in the new connective tissue. There may be no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglion. 3. When the appendix is congested without the presence of infection, as in many cases of loose kidney, there may be little or no tenderness at McBurney's point, but there is persistent tenderness at the point here described. There is no tenderness at the point of the left lumbar ganglia." Under these conditions (A. B. C.) the point here described is of primary importance, while McBurney's point is of secondary or no significance. It will be found useful in differentiating between appendical and pelvic irritations. If it is alone tender, it means appendix trouble. If both right and left lumbar ganglia points are tender it signifies pelvic disorder. If neither of these points are tender, the abdominal irritation must be looked for somewhere higher up than the pelvis or the appendix.

Corneal Anesthesia in Cerebrospinal Meningitis.—E. Burvill-Holmes calls attention to a symptom of cerebrospinal meningitis that he has not seen noticed in the literature of the disease, viz., analgesia, or partial or complete anesthesia of the conjunctiva and cornea. He has found this sign in fully one-half of a large number of cases seen by him in the Municipal Hospital at Philadelphia, even in patients who were perfectly conscious in some instances. Occurring as frequently as it does, it would seem likely to prove a valuable sign in differentiating cerebrospinal meningitis from other diseases in which meningeal symptoms are likely to occur, such, for example, as typhoid and typhus fever and uremia.

The Lancet, January 11 and 18, 1908.

On Anomalous Reactions Obtained in Testing Urine for Sugar with Fehling's Solution.—H. Maclean gives a detailed account of elaborate chemical experiments which cannot be well abstracted and must be read in detail by those interested. He notes that the familiar Fehling test as applied to urine in general is complicated by many difficulties and ambiguities. He notes that different authorities seem to hold very divergent views with regard to the exact significance of certain results obtained with Fehling's test when the reaction is somewhat modified either with regard to the general appearance of the precipitate or the time taken to produce it. Thus on testing urine it is sometimes found that no result is evident after a good deal of heating with Fehling's solution, but that some time after standing an opalescent mixture is found to have taken the place of the blue solution, or perhaps there is a fairly definite yellowish-green precipitate. In other cases it is found that the mixture of urine and Fehling's solution gives on boiling for some time a dirty opalescent greenish milky liquid without any sign of a definite precipitate; at other times a more yellowish-green solution is in evidence; and all stages from a faint dirty greenish opalescence to a definite yellowish mixture exhibiting undoubted evidence of a precipitate may from time to time be seen in clinical work. The author declares that the substance interfering with the expected reaction is kreatinin. This has the power of holding in solution the reduced suboxide of copper. Were it not for this kreatinin every urine (since normal urine always contains a certain amount of sugar) would give a positive reaction. The author quotes freely from his previous papers on this subject and replies to the criticisms which Pavey has made on the correctness of his conclusions.

Further Observations on Salts of the Alkaline Earths Which Affect the Coagulability of the Blood.—J. B. Nias refers particularly to the lactate, borocitrate, and sulphate of magnesium, bromide of strontium and the lactophosphate and glycerophosphate of lime. It is the author's conviction that of all the alkaline earths none come up to the lactates, chlorides, and carbonates, if duly assimilated, and that we should rely on these for the treatment of hemophilia. For urticaria and conditions of general debility there is perhaps a larger selection.

On Blood Coagulability in the Puerperal State.—R. Hingston Fox describes the methods followed in his observations, his apparatus being a modification of that used by A. E. Wright (described in the *Lancet* of October 14, 1905). As Fox waits until the entire mass of blood withdrawn is coagulated, while Wright accounts the coagulation time to be completed before the first appearance of a shred of fibrin formation appears, the results of the two are not comparable. Fox gives, as a result of his own work, the coagulative time as varying from four to six minutes on the first day after delivery to seven to eight minutes on the seventh day. The patients were all recumbent in bed and the results are corrected for temperature. The author notes that an observation of the coagulation time of the blood after delivery might give useful warning of the risk of thrombosis or embolism if the coagulation time were low, or of post-partum hemorrhage if it were high. Appropriate treatment—for example, with citric acid on the one hand or with calcium lactate and salines on the other—would rectify the condition.

Bone Cavities Treated by Stopping with Paraffin.—The history of three cases is given by A. J. Walton, the cavities being respectively due to removal of sequestrum from the tibia, diseased bone from the humerus, and a cavity in the clavicle. All were filled with paraffin. The author states that to secure good results, attention should be paid to the following points: First, the wound should be carefully protected by gauze from contamination with the material in the abscess cavity or the irritant substances used to sterilize and to dry the cavity. Secondly, the operation should be completed in one stage so that good apposition of the edges of the periosteum and skin may be insured. This does not in any way seem to prevent the sterilization of the cavity, the only argument in favor of doing it in two stages. Thirdly, paraffin of a melting point of 120° F. should be used to fill the cavity. Many cases have now been recorded by Stephen Paget where its use

subcutaneously has been followed by success and one case where it was used to fill up a frontal sinus, the cavity in the bone being packed with it. It sets more firmly than Moorhof's mixture and can be sterilized more readily and has no local or general toxic characters, whilst the argument used against it that it is not absorbed does not from these cases seem to be correct.

Certain Papillary Signs in Chorea.—F. Langmead calls attention to the following: (1) Hippus.—The first is hippus. In many children who are more than slightly affected by the ordinary sthenic type of chorea the movements of the iris are extraordinarily wide and rapid. This is readily explained by the jerky movements of the eyeballs and the consequent quick and frequent variations in the amount of light which reaches the retinæ, and also the suddenly altering accommodation for the many objects which in turn are included in the visual field. This necessarily renders the detection of rhythmical oscillatory movements of the iris no easy matter, but during intervals of quiet these movements, which constitute hippus, are sometimes noticeable. (2) Peculiarities of movement of accommodation.—That the contraction of the pupils to accommodation may be extremely rapid and sudden has already been mentioned, but it will frequently be seen also that the reaction is asynchronous on the two sides, one pupil contracting, while the other remains temporarily dilated. This is especially marked when the pupils are unequal, the larger usually reacting more slowly. (3) Contraction.—Contraction of the pupils both to accommodation and to light is usually ill-sustained, and here again the affection may be unequal, so that when both are contracted one will sometimes be seen, as it were, to tire out and dilate whilst the other remains small. (4) Varying inequality of the pupils.—It may be noticed in some cases that one pupil remains persistently smaller than the other during the complete examination. This may continue for several weeks and only be replaced by the normal equality when the child has recovered or, on the other hand, when next seen the pupils may be equal or that which was formerly the larger may now be the smaller. (5) Eccentric pupils.—Eccentricity of the pupils may occasionally be present and may become better marked when the pupil is contracted and less obvious when dilated.

Arteritis Obliterans of the Lower Extremity with Intermittent Claudication.—The patient of F. P. Weber was a Russian Jew aged forty-two years, complaining of cramp-like pains in the inner part of the sole of the left foot or in the calf of the leg, coming on after he had walked three or four minutes. No pulsation could be felt in the left dorsalis pedic artery nor in the tibialis posticus behind the left malleolus. The areas on the left foot corresponding to the distribution of these vessels became red and congested-looking where the limb was allowed to hang over the side of the bed. After walking these same areas appeared blanched. This blanching could be lessened to some extent by amyl nitrate inhalations, but the internal administration of vasodilators did not appear to produce the same result. Rest, hot-air baths, Bier's method, and various applications were all of doubtful benefit. The case had lasted five years. The patient has been more or less threatened with gangrene in the shape of one or two small ulcerations but has thus far escaped. The author notes that the case is a typical one of obliterating arteritis which often leads to gangrene. He has found it rather frequent in poor Russian Jews who have been heavy smokers. The intermittent claudication has been regarded as analogous to the phenomena of angina pectoris and the malady has been styled angina cruris.

The Preparation of Catgut for Surgical Purposes.—Lord Lister notes the following as essentials for catgut in surgery. It should, after soaking in water or blood serum, be strong enough to bear any strain to which it may be subjected, and should hold perfectly when tied in a reef-knot. It must not be so rigid as it lies among the tissues as to have any chance of working its way out by mechanical irritation. Nor should it be too quickly absorbed, but should be consumed so slowly by the cells of the new tissue that grows at its expense, that in case of the ligature of an arterial trunk in its continuity, it may serve sufficiently long as a support for the substitute living thread in its embryonic condition. At the same time, it is essential that the catgut should be securely aseptic when applied. He finds these conditions best attained by preparing sutures and ligations in the following manner: The preparing liquid must be twenty times the weight of the catgut. So for 40 grains of catgut 800 grains of preparing liquid are required. It is made by mixing two liquids—namely, the chromium sulphate liquid and the sublimate liquid. The sublimate liquid is: Corrosive sublimate, 2 grains; distilled water, 320 grains. The sublimate may be dissolved by heat, but the solution must be used cold. The chromium sulphate liquid is prepared thus: Chromic acid, 4 grains, distilled water, 240 grains. Add to this as much sulphurous acid (P.B. solution) as gives a green color. If more is added the color becomes blue, which shows that rather too much sulphurous acid has been used. It is well to reserve a few drops of the chromic acid solution, to be added after the blue color has just appeared and restore it to green. Then enough distilled water is added to bring the green liquid up to 480 grains. Then add the sublimate liquid. The catgut is kept for twenty-four hours in the preparing liquid and is then dried on the stretch. (N.B.—It is essential that the CrO_3 and SO_2 solutions be mixed before the $HgCl_2$ solution is added.)

British Medical Journal, January 11, 1908.

Cancer, Its Etiology and Treatment by Trypsin.—Lowered vitality, whether due to faulty metabolism, alcoholism, overstimulation, diseases of the optic nerves, and general or local debilities is, in the opinion of J. Alcindor, the predisposing factor in malignant disease. Chronic irritation, of no matter what character, is the determining factor; the cells of the tissue irritated, unable to respond normally to the irritant, assume characteristics suitable for their environment, thus conforming to a natural law. Trypsin is of considerable value in cancer. Carcinoma of the cervix, rodent ulcer, and epithelioma are eminently suitable for the treatment. Gout, rheumatoid arthritis, and chronic rheumatism ought to be treated by injections of trypsin when other better known methods have failed. Regarding amylopsin, the author states that after injecting it singly and in combination with trypsin he has found it of no value in the treatment of cancer. He relates the histories of two personal cases, one of abdominal cancer and one of mammary cancer. Both cases eventually proved fatal, although the trypsin injections seemed to have exerted a marked influence on the original neoplastic deposits. Alcindor notes that trypsin does not seem to have any evil effect on healthy living tissues, but in the presence of an alkali it splits proteids into proteoses, peptones, and polypeptides; these are further split up into leucine, tyrosine, aspartic acid, hexone bases, and other amino compounds. It attacks all proteids alike, and exercises no selective action on cancer tissue. These facts would explain the reason why the two cases showed marked improvement up to a certain point; also why the first patient grew progressively weaker, while the second died rather unexpectedly from toxemia. The trypsin not only digested the growths but attacked the elaborated proteids, which were circulating in the blood for the nourishment of the organism, and converted them into toxic products; hence trypsin cannot be injected into the body for an indefinite period without producing deleterious effects, so giving rise to the very condition suitable for the growth of cancer. Alcindor is, however, convinced of the power of trypsin to digest cancer, but it must be applied directly to the disease and not in its neighborhood. Cancer of the internal organs cannot be successfully treated by this method, whereas rodent ulcer, epithelioma, and cancer of the cervix are eminently suitable for the treatment provided the cases are in the early stage.

The Pathology of Diabetes.—H. J. McNab states that whenever sugar is absorbed into the blood from whatever source all the body cells fix as much of it as they require in the form of glycogen, the liver perhaps having power to store whatever is in excess of immediate requirements. In order to make use of this glycogen it must be reconverted into sugar, and this, in the case of the liver, is done by means of a ferment. Now, this ferment may be the normal sugar-forming ferment of the pancreas, which, after performing its function in the intestine, is absorbed and made use of again in the tissues, perhaps undergoing some change till such times as it is wanted. When this ferment is not present, the glycogen in the cells cannot be made use of. But sugar may be an essential requirement of these cells, and, with the power of using the fixed glycogen gone, the small normal quantity floating in the blood may be of little use to supply this requirement. Hence a demand on all sides for sugar, resulting in increased appetite, and the conversion of proteid and anything that can be so transformed into sugar, so that the sugar percentage of the blood is raised above normal. But as soon as this occurs two things happen: (1) There is a demand for water, producing thirst, on account of the increased density of the blood, and (2) the kidneys begin to filter off sugar; so that, with abundance of glycogen and sugar, the tissues are starving for it, the cells striving to establish a higher sugar percentage in the blood, the kidneys always frustrating them. This theory would explain the good effect of pancreatic extracts in diabetes; the value of morphine may be simply that it diminishes metabolism.

Book Reviews.

Elements of Physics for Medical Students. By Frederic James M. Page, B.Sc. (Lond.), F.I.C., Associate of the Royal School of Mines; Lecturer on Physics and Chemistry to the London Hospital Medical College; Examiner in Physics and Chemistry to the Society of Apothecaries, London, etc. With a Colored Frontispiece and 230 Figures in the Text. Chicago: W. T. Keener & Co., 1907.

This is an excellent little book for anyone who has grown a little rusty in his physics and would like to refresh his memory without giving the time necessary to one of the large textbooks on the subject. The small size of the book, which can be easily carried in the coat pocket, together with the clearness of the type and the neatness of the illustrations makes it convenient to read on the cars or during any unoccupied minutes while waiting for a train, or at any other time. The subject is put in simple language, the explanations are clear, and the illustrations are all that could be desired to elucidate the text. The medical student who has taken a course of physics in school or college will find the book admirably adapted to freshen his knowledge. Part I deals with General Physics, Part II with Heat, Part III with Electricity, Part IV with Sound, and Part V with Light. Part VI is devoted to practical exercises on the subjects previously treated. An appendix contains a number of necessary tables. A good index completes the work.

Immunochemistry. The Application of the Principles of Physical Chemistry to the Study of the Biological Antibodies. By Svante Arrhenius. New York: The Macmillan Company, 1907.

Just as morphological pathology for the time being appears to have reached a point beyond which progress will probably be very slow while the greatest hope for the immediate future lies in the study of the chemical aspects of disease, so the problems of immunity, with all that this term implies, seem to await for their explanation a fuller understanding of the comparatively recent lore of physical chemistry. This science, occupying the middle ground between the chemistry and the physics of a generation ago, apparently is destined to bridge the gap between the two subjects and demonstrate that physical and chemical changes as we have been accustomed to regard them are in reality much more closely related than was formerly supposed. In the development of this difficult branch of learning Professor Arrhenius has played a prominent part, and when he turned his attention to the subject of toxin and antitoxin action it was to be expected that his investigations would be very fruitful. That they have been so is attested by the present volume, which is an amplification of six lectures on the immunity reactions delivered by the author at the University of California. It must be admitted, however, that the book is one more likely to prove of value to those already somewhat conversant with the subject matter than to the beginner, but special workers in this field will find it an exceedingly important guide and replete with evidences in favor of the chemical theory of vital processes.

The Pancreas. Its Surgery and Pathology. By A. W. Mayo Robson, D.Sc. (Leeds), F.R.C.S. (Eng.), London, and P. J. Cammidge, M.B. (Lond.), D.P.H. (Camb.), London. Illustrated. Philadelphia and London: W. B. Saunders Company, 1907.

One of the effects of the increased interest in the diseases of metabolism that has attended the gradual accumulation of the mass of chemical and experimental data that is now available has been to bring the pancreas—that organ of which it might truly be said that "it works in a mysterious way its wonders to perform"—most prominently into the foreground of both clinical and laboratory investigation. That the effort expended in this direction has been very fruitful is well illustrated by the difference in size between the senior author's former book, "Diseases of the Pancreas," published in 1903 in collaboration with Mr. Moynihan and having less than 300 pages, and the present volume, which is more than double this size. Of the nineteen chapters, the first six are devoted to a well illustrated discussion of the anatomy and histology of the organ. The chapter on the physiology is exceedingly interesting and lays due stress on Bayliss and Starling's "hormone" theory of the control of the secretion of the pancreatic juice. The two following chapters are on the pathology of the pancreas, while the next on the chemical pathology is one of the most original and important in the book. In this the authors discuss in detail the results of the analyses of the feces and urine in pancreatic disease, describing at length the technique of their "pancreatic" reaction in the urine for facilitating the diagnosis of pancreatitis. The succeeding chapter on diabetes is followed by one on general symptomatology and diagnosis, and the remainder of the work is given up to a discussion of the various surgical diseases of the gland. The book throughout is characterized by much originality, and its perusal opens up many suggestive avenues of thought. For example, the author's view regarding the intimate etiological relationships between gallstone disease and pancreatitis and between digestive disturbances, such as duodenal catarrh, and diabetes, have an intensely practical bearing. It is not too much to say that the work is one of the important books of the year, and that it can be most warmly commended to both surgeons and internists.

Primary Nursing Technique in First-Year Pupil Nurses. By Isabel McIsaac, Graduate of the Illinois Training School for Nurses; formerly Superintendent of the Illinois Training School for Nurses, etc., etc. New York: The Macmillan Company, 1907.

The object of this little book is to give the pupil nurse at the beginning of her training simple and definite instruction in technique. Throughout the book the teaching is addressed to the making of efficient nurses, and not the production of half educated physicians in the guise of overtrained nurses. The writer has given us a book that is practical and useful, and one which should be in the hands of all beginning their career as nurses.

Die Krankheiten des Verdauungskanals. von Dr. P. Cohnheim. 2te Auflage. Berlin: S. Karger, 1908.

The second edition of Cohnheim's treatise on Diseases of the Digestive Tract is a praiseworthy work. Everything has been presented from the practical point of view, and is given in a clear and concise style. There is no doubt that the present new edition will meet with as much success as its predecessor.

Ueber das Tasten Normaler Magenteile. Von Dr. Th. Hausmann. Berlin: S. Karger, 1907.

The present monograph deals with the subject of palpation of some parts of the stomach. In some instances Hausmann has been able to discover the pylorus, in others the lesser and greater curvature of the stomach (principally in cases with gastroptosis). Hausmann could palpate the pylorus in eighteen per cent. of the patients and the greater curvature in twenty-five per cent. He made use of deep palpation and thinks that this method is of diagnostic importance.

Traité de l'Hypnotisme Expérimental et Thérapeutique, ses Applications à la Médecine, à l'Education et à la Psychologie, par le Dr. Paul Joire, Professeur à l'Institut Psycho-physiologique de Paris. Président de la Société Universelle d'Études Psychiques. Avec 44 figures démonstratives. Paris: Vigot Frères, 1908.

More and more interest is being shown by the medical profession in psychotherapeutics. The works of Moll, Hirschlaff, Freud, Jung, and many others are more and more extensively read; and the present work of Professor Joire will also be found of value, although it is evidently written as much for the laity as for medical men. After discussing hypnotism as a means of psychological investigation, hypnotic suggestion, the hypnotic states, hypnotic methods, etc., the author describes its applicability in hysteria, obsessions, alcoholism, in the management of accouchements, in certain incurable maladies, etc. The action of hypnotism, he considers, is both physical and moral or mental. It diminishes or suppresses pain, facilitates general nutrition, overcomes insomnia, augments the forces, assists in restoring function, decreases depression and despondency, increases the courage, and both consoles and enlivens the patient when properly and successfully performed. Even if one does not wish to practise hypnotism, or hypnotic suggestion, the book will provide one with a knowledge of the subject and be convincing of its usefulness in some cases.

Nephritis. A Manual of the Disease Commonly Called Nephritis or Bright's Disease and of Allied Disorders of the Kidneys. By Seelye W. Little, M.D. New York: The Grafton Press, 1907.

In this book the author endeavors to present in a small manual the chief facts of interest to practitioners in connection with nephritis. The work does not offer anything really new, and contains much that is already well known and is taught in the standard works on the subject. There is a tendency to dwell upon some points with perhaps unnecessary persistence, as they are not moot points, but quite generally accepted. The style is a little jerky in places and verbose in others. For those who like discussion of a disease from a personal viewpoint, the book will be satisfactory.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Second Annual Meeting, Held in Albany, January 27, 28, 29, and 30, 1908.

(*Concluded from page 204.*)

(Special Report to the MEDICAL RECORD.)

Wednesday, January 29—Third Day.

GENERAL MEETING.

THIS meeting was held in Centennial Hall, and consisted of a symposium on the upper digestive tract. This was arranged by Dr. Edgar A. Vander Veer.

Pancreatitis Resulting from Gallstone Disease.—Dr. WILLIAM J. MAYO of Rochester, Minn., read this paper. In 2,200 operations upon the gall-bladder and biliary passages the pancreas was coincidentally affected 141 times. As the total of all pancreatic diseases operated upon was but 168, 81 per cent. were due to or accompanied by gall-stones. In 268 operations upon the common and hepatic ducts the pancreas showed disease in 18.6 per cent., against 4 45/100 per cent. where the gall-bladder only was involved. In 124 cases the head of the pancreas showed evidence of inflammation, while in but 17 was the entire organ affected. Three cases were of acute pancreatitis, nine of subacute, and 129 chronic. The pancreas lay in a most protected situation, and was little liable to intrinsic disease. Its natural defenses had but a single defect and that was the mechanical association of the main pancreatic duct with the common duct of the liver. Inflammations of the pancreas were dependent upon infections or chemical irritation. In 62 per cent. of human subjects the terminal third of the common duct was imbedded in pancreatic tissue, while in 38 per cent. it lay behind. Therefore, 62 times out of a hundred any structural change in this portion of the head of the pancreas would interfere with the liver excretion through the common duct, giving rise to jaundice, while a stone in the terminal portion of the common duct, or infection caused by stone in any portion of the bile tract, exposed the pancreas to infection. Should a stone in the common duct compress the pancreatic duct of Wirsung, the safety of the pancreas might depend upon the possible presence of a patent duct of Santorini. Or if the stone lay in the papilla, the bile might force its way up into the duct of Wirsung, and set up chemical pancreatitis. The *triangle of pancreatic inflammation* was that part of the head of the pancreas which lay between the duodenum on the right and the ducts of Santorini above and Wirsung below. The most interesting feature of acute pancreatitis concerned fat necrosis, a disseminated necrosis of fat due to the escape of pancreatic ferments which involved to a greater or less extent the omentum, mesentery, retroperitoneal, and other adipose tissues. Fat necrosis was probably the result not of normal pancreatic secretion, but rather of pancreatic juice which had become activated by associated ferments either from the bile or from the duodenal mucous membrane. Of chronic interstitial pancreatitis there were two forms: The interlobular and the interascinar. The interlobular was fortunately the one most often associated with gallstone disease. In this type the pancreas was enlarged, nodular, and rough to the "feel," greatly resembling cancer. The interascinar often destroyed the islands of Langerhans, causing diabetes.

Duodenal and Gastric Ulcers.—Dr. ALBERT J. OCHSNER of Chicago read this paper. He said it was proper to consider these ulcers together, because the stomach and duodenum were so closely related anatomically, physiologically, and pathologically, and embryologically both were formed from the fore gut. The stomach had five functions which should be borne in mind. 1. It stored the food taken at one meal. 2. It secreted digestive ferments which acted in an acid medium. 3. It acted as a mixing machine. 4. It ground the food into the proper consistency. 5. It acted as an absorbing surface. The duodenum served simply as an extension from the stomach, in which small portions of food were subjected to mixing, but in an alkaline medium. As regards the etiology of gastric ulcer, traumatism from within was the chief exciting cause. The vast majority of cases occurred in the pyloric end of the stomach. Another etiological factor was the theory that certain antibodies were present or absent under certain conditions which prevented the gastric juice from digesting the mucous membrane of the stomach. This seemed to be borne out by animal experimentation. Duodenal ulcer was due often to an extension of a gastric ulcer, the so-called "saddle-shaped" ulcer of the pylorus; it was also due to the irritating effect of the gastric juice, a form of what might be called peptic ulcer. Duodenal ulcer might be caused by severe burns of the skin and by thrombosis of the vessels supplying the duodenum. The frequency, relatively, of duodenal ulcer was greater than formerly supposed. He referred to the remarkable studies of Cannon. The stomach and duodenum were the machines for getting food into proper condition for use later on. The digestive apparatus should not be interfered with surgically needlessly, because in ulcer of the stomach or duodenum the patient's digestive apparatus often could be restored to the normal without surgical interference. In the early stages, dietetic, medicinal, hygienic, and other measures should be employed. He emphasized the importance of giving dietetic and hygienic instructions to patients to prevent recurrences after the ulcer had healed. There were many cases, however, in which a permanent cure was not possible, and the sooner surgical relief was employed the better. The complications to be considered in cases of persistent gastric ulcer were perforation, hemorrhage, emaciation, adhesions to surrounding structures, and the implantation of carcinoma. At the beginning of an attack it was not possible to differentiate the class of cases requiring operation from those which would heal spontaneously. To protect the ulcer, much mucus was secreted. Hydrochloric acid was also secreted in large amounts. There was also hypertrophy of the muscles of the stomach. All this tended to increase the irritation of the ulcer. These changes were likely to do more harm than good, although the physiological intent was to protect the patient. The ulcer might encroach upon blood-vessels; it might perforate into adjoining organs; or carcinoma might be implanted. Most commonly there was an obstruction at the pyloric end, due to induration at the base of the ulcer. This obstruction might be overcome by hypertrophy of the muscle; if not relieved by this, this is followed by an exhaustion of the muscles and consequently gastric dilatation. He recalled such a case in which the lower end of the stomach rested in the pelvis. Because of the residual food in the stomach the patient absorbed products of decomposition instead of the products of digestion. This accounted for the cachexia, which was invariably present in these cases. This explained the favorable results which followed gastric lavage. With efficient drainage by gastroenterostomy the patients were made much better. He emphasized the fact that the technique must be learned at the operation table. There was no operation in the field of surgery in which there were so many failures if the operation was learned on the cadaver or from a description as this particular operation. Certain fundamental principles must be observed to reduce the mortality. (1) The amount of traumatism must be reduced; (2) the intraabdominal organs should be exposed as little as possible to the cold air; (3) the patient

must be placed in the sitting posture as soon as possible after the operation; (4) in case of closing perforations the sutures must be so placed as not to result later in obstruction from contraction; (5) in case neoplasms are to be enucleated, all the tissues closely connected by lymphatics must be removed; (6) in gastroenterostomy the lowest portion of the stomach must be chosen; (7) there must be no tension upon the sutures; (8) except in complete gastrectomy the coronary artery must be preserved; (9) in acute gastric dilatation the stomach tube must be at once introduced and gastric lavage employed; (10) the simplest possible technique must be employed preferably without use of mechanical apparatus; (11) these patients should be controlled for a long period of time after operation and instructed as to their diet and general hygiene.

Surgery of the Liver and Gall-Bladder.—Dr. JOHN C. MONRO of Boston read this paper. He said he would confine himself to the bringing up of the more vexatious problems, and first considered the question of syphilis of the liver as a surgical disease. Writers agreed that certain cases could not be diagnosticated without operation, and many of them even required to have a microscopical examination to confirm any diagnosis. Among their cases the non-operative cases, a marked syphilitic history was an important factor. The lesions were gummatous, and they might become cheesy or calcified. Pedunculated tumors formed because of the contractions which formed. In the hereditary form the condition was usually interstitial. Evidences of a grave infection might be found. Ascites was said to be present in all cases by some writers. Jaundice was not common or severe. The gummatous tumors were somewhat common in the region of the suspensory ligament. They were hard and irregular. The larger ones might be soft and tender. Symptoms of gumma of the liver might be entirely wanting. Or they might be such as to appear to threaten life. The pain was apt to be nocturnal. The loss of strength and weight might be so marked that malignancy would be thought of. In their experience constipation and not diarrhea was more often met with. Cancer might be excluded because it rarely was primary in the liver. The therapeutic test was valuable in differentiating, but it should not be wholly depended upon. Dr. Monro then gave a brief analysis of cases. Another question that might arise was, what was the proper treatment of the cases that died a few hours after operation from complete suppression of liver function. They had all the signs of septic infection. In cases of hemorrhage of severe type, calcium salts and similar agents might be used with advantage. He then considered cholecystectomy *versus* cholecystotomy. The patients who were operated upon for stones might come back because of the reformation of calculi. This reformation was more often met with when the stones had formed in the hepatic or common ducts. For that reason some were inclined to drain the common duct as well, and with reason; stones might be there which could not be felt.

Non-Parasitic Cysts of the Liver and Congenital Cystic Liver.—Dr. WILLIS G. MACDONALD of Albany presented this communication and gave a brief history of three interesting and instructive cases.

I. Cystic Degeneration of the Liver and Kidneys. Associated with Ascites. Aspiration and Drainage. Temporary Improvement.—The patient was a man, 34 years old, who had been four months in the hospital and treated for cirrhosis of the liver. Under local anesthesia the abdomen was opened. After getting rid of a large amount of fluid a large mass was discovered. He removed 6,500 c.c. of fluid of the consistency of molasses, from the tumor of the liver. He tried to attach the edges to the peritoneum, but could not. Two large drains were introduced and sutured to the top and the bottom of the wound. The large cyst involved both lobes of the liver. There were a number of small cysts ranging from the size of an orange to a walnut, forty or sixty in number, which could be seen everywhere. Sudden sepsis developed and the man died with suppression of urine. At autopsy the same condition was found in the kidneys, *i.e.* multilocular cysts. They were enlarged to three times the normal size. Two-thirds of the liver was made up of these cysts, and the liver weighed 14 pounds.

II. Multilocular Cyst of the Liver. Operation, Fixation of the Liver Into Abdominal Wall. Drainage. Recovery.—This patient was a woman, 67 years old, with a large hepatic tumor. When tapped the contents of the tumor was pure mucin in solution. The peritoneum was sewed to the walls of the sac, and the anterior wall of the sac was freely opened. A finger introduced passed into both the right and left lobe of the liver and septa due to pressure necrosis were felt. This patient was drained for two weeks and sent home. After four months the wound had entirely healed. There were no hooklets found in this case.

III. Acute Infection. Local Peritonitis Simulating an Inflamed Gall-bladder.—This case illustrated the difficulties in diagnosis. The patient was a woman, an Italian, from whom but little previous history could be obtained. Two weeks before he saw her she had rigors, fever, pains in the abdomen, and was brought to the hospital under the belief that she was suffering from a distended gall-bladder which had become acutely infected. An oblong tumor was found which rested on the crest of the ilium. When an incision was made the gall-bladder was found to be normal. The tumor was some 15 cm. in length, 7 cm. in width, and 6 or 7 cm. across; it extended from just over and outside the gall-bladder downwards to the right side of the abdomen. It was universally adherent to the peritoneum, the mesentery, and the omentum. It was enucleated with difficulty. By means of a triangular incision the large cyst, together with some healthy liver tissue, was gotten out. The patient was in the hospital a few days, but had no trouble whatever. There were no morphological evidences of hydatids found in this case either. Hydatids cysts were practically unknown in this country.

The Gastric Neuroses.—Dr. DUDLEY D. ROBERTS of Brooklyn read a paper with this title and called attention to the present unsatisfactory classification, its purely symptomatic and accidental character. An etiological classification might be useful, such as the irritation neuroses, direct and reflex, the nutritional neuroses, and the psychical neuroses. These divisions were valuable in the diagnosis of causes of neuroses and in differentiating neuroses from organic lesions. He then spoke of the resulting therapeutic principles.

The Diagnosis and Treatment of Gastric Ulcer.—Dr. DELANCEY ROCHESTER of Buffalo read this paper. He said the diagnosis was very difficult and often impossible, and he gave a brief history of a case, showing how readily a mistake in diagnosis could be made. He never advised operation now unless there was perforation or uncontrollable vomiting. He never saw a case with hypochlorhydria in the so-called peptic ulcer. The symptoms and sings were localized pain, burning or boring in character, increased by the ingestion of coarse fibered foods; sometimes it was colicky in nature. There was vomiting, with the vomit acid in reaction, and containing blood. There was blood in the stools. There was localized tenderness in the epigastrium. The treatment was rest to the stomach, functional and mental, and this could be gotten by the use of atropine and morphine. All foods should be withheld. Continuous application of cold to the epigastrium by means of Leiter's coils was well worth trying. The treatment was directed to the hematemesis and to the ulcer. The latter required a careful study of the

patient to learn the etiology in each case, and included the local treatment of the ulcer and the treatment of the underlying etiological factors. Adrenalin chloride solution was of value. He had also used subgallate of bismuth suspended in a milk of magnesia. Food should be withheld for twenty-four to forty-eight hours. The patient might suck a small piece of ice. Rectal feeding was not advised because it excited an increased flow of gastric juice. One should always study the determining conditions which produced the ulcer, that was, the eye, ear, nose, throat, gall-bladder, pelvic organs, etc. When feeding was given the food should most carefully be selected. Orthoform was another most valuable agent.

Modern Conception Concerning Chemical Regulation of Function.—Dr. GRAHAM LUSK of New York read this paper. He called attention to Bush's experiments with adrenal extirpation, showing that the peculiar conditions produced were not due so much to any injury to the nerve as to the removal of the gland. Adrenalin was a powerful substance which maintained the tone of the system and muscles. The nerve endings must be intact if adrenalin was to be effective. Adrenalin could be heated to the boiling point without injury; therefore, it was not a ferment. With regard to the upper digestive tract, the production of saliva he said was due to a reflex through the nerves. If the vagus in the neck was cut, the vasoconstrictor fibers in the nerve died after three days. Upon stimulation of the still irritable secretive fibers a copious flow of gastric juice would follow. Starling had stated that there were no secretory nerves to the pancreas, but Pawlow said they were in the vagus. The intestinal juice might be stimulated through the nervous pathway; it was a reflex act through the plexus of Meissner. Secretin was caused by the action of the hydrochloric acid; when carried away it caused a secretion in certain localities. Food in the mouth caused a flow of saliva. It aroused a sense of appetite because of a discharge of nerve impulses through the vagus to the stomach, causing gastric secretion. If bread was placed in the stomach through a gastric fistula there would be no secretion; but if the bread was partially digested and then introduced into the stomach through the fistula, the gastric juice would flow. If the stomach was divided into two unequal pouches, bread partially digested, if introduced into the larger pouch, would cause a flow of juice in the smaller. Boiling the pyloric mucosa and pyloric antrum in water and hydrochloric acid, and introducing the filtrate into the jugular vein, would cause a flow of gastric juice. No such effect would follow if the fundus was used. Cannon had found that free hydrochloric acid caused the pylorus to open, while in the duodenum it brought about its closure. Haidenhain showed that hydrochloric acid in the duodenum caused a flow of pancreatic juice. Pawlow believed that the hydrochloric acid acted on the sensory nerves of the duodenal wall and caused a reflex secretion of the pancreatic juice through its effect upon the splanchnics. Dr. Lusk then spoke of secretin and prosecretin, and said that the former could be obtained from almost any portion of the gut. Nerve reflexes were not necessary for the production of the pancreatic juice; it was the result of a chemical excitation through the blood stream. Removal of the bile influenced the digestion of the fats, but not of the carbohydrates. The pancreatic juice contained mother substances of enzymes. Extirpation of the pancreas caused diabetes. Starling had shown that an extract made from the fetus of a rabbit and injected into a virgin rabbit caused the development of the mammary gland; whereas the injection of an extract of the placenta or uterus produced no such effect.

The Effect of Alcohol on the Secretions.—Dr. H. C. JACKSON of Albany read this paper. He discussed the experimental evidence upon the effect of alcohol and the alcoholic liquors upon the secretion of the gastric and pancreatic juice and upon the gastric and pancreatic digestion in *vitro* and in *vivo*. Also the action of alcohol upon the liver and the secretion of bile.

Dr. CHARLES G. STOCKTON of Buffalo believed that chronic pancreatitis was much more common than generally supposed, and it occurred often without having any relation to the bile passages. Its symptomatology should receive more attention. He said he was not quite able to judge to what extent Dr. Ochsner advocated operation in cases of gastric ulcer. His own views were that the operation was not so much for the relief of the gastric ulcer as it was for the results of the gastric ulcer. It was not a question of drainage. One phase of gastric ulcer was often overlooked, the motor function of the stomach. One should realize the importance of spasm in disease. In the treatment of gastric ulcer before and subsequent to operation one should keep in mind not only the questions concerning the amount of secretion of acid, but the importance of feeding the patient, and the spasm of the stomach. He said he had lots of faith in the use of the stomach tube if used with care and with skill.

Dr. ROBERT T. MORRIS of New York said there were two things he would tell a medical student: first, to keep out of debt, and, second, that the cases of supposed stomach and bowel trouble were not cases of stomach and bowel trouble.

Dr. MARY DUNNING of Newburgh asked if there were any satisfactory explanation of the ulcer which followed burns. She called attention to the work of Dr. Margaret Cleaves of New York in the use of trypsin in cancer.

Dr. A. JACOBI of New York said that neuroses of the stomach meant nerve exhaustion. The pain was mitigated by eating; after a few hours the pain returned, to be relieved by taking in of more food. This was not only of diagnostic but of practical importance. When the pain came on two or three hours after eating it meant disease of the colon. In cases of gastric ulcer he said that they should see to it that the stomach was alkaline. Milk of magnesia, and plenty of milk, and milk all the time, together with stale bread, was the best treatment. Under this treatment the patients might get well.

Dr. L. DUNCAN BULKLEY called attention to a case in which the fear of operation stopped gastric digestion.

Dr. JOSEPH COLLINS of New York and Dr. ANGELL of Rochester also discussed the papers.

The Mosquito; Its Relation to Disease and Its Extermination.—Dr. ALVAH H. DOTY of New York presented this paper. It was a review of the literature and of the work done on Staten Island in the extermination of this pest.

A Study of Children Fed on Milk of Tuberculous Cows.—Dr. WILLIAM L. STOWELL of New York read this paper. He said there were 440,000 tuberculous cows in this State. The tubercle bacilli entered the body by the inhalation of air, or locally. The usual portal of entry was by the mouth. Primary infection might be in the intestinal tract. Young animals, including children, were very susceptible to the bacilli. They are likely to receive them in the digestive tract and this meant an interesting relation between the milk of cows and children. New York Infants' Hospital was situated upon an island of sixty acres and there they treated 2,500 patients. Samples of the city milk and the farm milk on the island were submitted to the Health Board every week for examination. It was found that in 1903 the farm milk contained 70,000 bacteria, while the city milk then contained 4,000,000. On the island were more than 28 cows. In December, 1903, two diseased animals were found and killed. The cows occupied modern barns. Each had 782 cubic feet of air space. In October, 1907, the test with tuberculin brought out the fact that out of 30 cattle only three failed to react, and all of them were killed. The three that failed to react were absolutely free from tu

berculosis. Bovine and human tuberculosis was interchangeable. The opsonic index of these hospital children was low and they contracted infections easily. There were 4,537 patients and 180 died; 18 of these died from tuberculosis. This mortality of 10 per cent. in this institution, where the children had been receiving milk from tuberculous cows, was the same mortality as for the nation. He said the milk of tuberculous cows was not so infective as generally supposed. In tracing the history of the children there were no evidences to prove that tuberculosis was more common among those fed on city milk than those on the farm milk, or *vice versa*.

Oxygen in Surgery; A Contribution, with Report of Cases.—Dr. William Seaman Bainbridge of New York gave a brief historical review of the application of oxygen to medicine and surgery. He believed that in surgery oxygen had a most promising field. He gave the results of a series of experiments on animals conducted for the purpose of establishing the influence of oxygen alone and in combination with other elements upon the animal economy. He reported a number of cases in which its therapeutic value had been tested. The oxygen was warmed to 85° or 95° F. and passed from a tank through a hot water bottle and tube into the abdominal cavity. If it was to be used in the thoracic cavity, an aspirating needle was used. He described the technique. The gas was not absorbed in most cases for thirty-six hours. He called attention to the various conditions in which its use should be tried with expected benefit.

Dr. Gwathmey of New York discussed the paper. Oxygen was a remarkable agent for improving the pulse; it had a very good effect upon the heart.

Significance of Uterine Bleeding.—Dr. John A. Sampson of Albany presented this paper, and illustrated his remarks with charts. He gave an analysis of 100 cases where the cause of the bleeding had been ascertained by microscopical examination or subsequent history. Malignant growths caused the bleeding in 28 cases; polyps in 17; threatened or actual abortion in 14; myomata, submucous and interstitial in 13; hypertrophic thickening of the endometrium in 11; laceration of the cervix in 6; ectopic pregnancy in 3; retained secundines in 4; and gonorrheal infection in 2.

Acute Flexures, Angulations of the Sigmoid and Colon.—Dr. James P. Tuttle of New York spoke of the departures from the normal flexures, congenital and acquired. It was the sudden or sharp bending of the gut upon itself which obliterated the caliber according to the degree of the bend. There were anatomical bendings throughout the colon which served the purpose of retarding the fecal currents. If these are exaggerated the amount of obstruction was increased. The more the transverse colon descended the more was the obstruction, an important factor in enteroptosis. A shortened mesentery might cause a narrowing or obliteration of the intestinal caliber. He described the conditions he had seen and operated on. In 1897 he pointed out this condition and he operated upon seven cases up to 1902. Dr. Tuttle reported cases and illustrated his remarks by pictures. There was one important symptom, upon which he had been able to make a snap diagnosis. When the patient took an enema of any fluid and went to stool, he went several times to get rid of all the fluid. This applied to the acute flexure cases. The treatment was palliative and radical. In some cases of the acquired type pneumatic inflation with a soft rectal bougie through the flexure was done and the bougie left in. This tended to straighten out the gut and gave a straight passage for the fecal matter. If kept up for months this gave great benefit. Always do this through the proctoscope in order to see the aperture, and then push the bougie through. Otherwise it would bend. Before removing it he injected oil. If this treatment failed the condition was due to malformations or fixations and the operative interference varied in each individual case.

Aërotherapy in Certain Toxemias of Childhood.—Dr. Frederic W. Loughran of New York said that aërotherapy had long been practised, but not until the last few years had it been raised from a fad to scientific fact. Its application had done much to simplify treatment, to lessen the period of acute illness, to shorten convalescence, and to avoid drugging.

Vascular Crises.—Dr. Henry L. Elsner of Syracuse said that the object of his paper was to emphasize that arteriosclerosis might exist many years without a single objective symptom; that sensory symptoms, paroxysmal in character, often of serious import, were due to vascular spasm. He defined vascular crises, and considered the evanescent symptoms referable to various parts of the body in connection with vascular crises. In young subjects arteriosclerosis was very likely to lead to death, or to serious complications, without delay. Conditions heretofore misinterpreted were considered in connection with vascular spasm as a cause. He called attention to the fact that there was an abdominal angina and a coronary angina, and that both might alternate with each other. In pure angina pectoris the pain might be referred to the abdominal organs. This was something that should not be forgotten. Improvement by treatment would improve, but not cure. The great danger lay in the fact that Nature brooked so many insults that revolt was too long postponed to admit of final reparation.

The Causes and Treatment of High Arterial Tension.—Dr. Louis Faugères Bishop of New York read this paper. He said that high arterial tension was the result of physiological reaction to pathological conditions. The causes were found in the circulatory system itself, or outside of the circulating system. He referred to the relations between the composition of the blood and the blood pressure. When we considered the causes of high arterial tension in relation to the recent increase in its dire results, the one that most interested us was to be principally found in the wide prevalence of hypertonia vasorum of nervous origin. After describing the instrument that he had devised for quickly ascertaining the presence or absence of high or low arterial tension, he said that the early detection of high arterial tension was very important in connection with treatment, because this was reflex from some underlying cause. The first step in the treatment of a case was to determine exactly the condition of the various organs, and symptoms should be corrected. The diet, exercise, environment must be properly selected, and the patient should be managed over a sufficient length of time for the correction of underlying causes and the completion of a physiological reeducation which might overcome the high tension habit.

Dr. A. Jacobi of New York said that arteriosclerosis commenced normally at about the age of 35 years; that it did not begin uniformly, for in some it began in the kidneys, in the brain, in the periphery, etc. So long as it did not affect the brain, the man would be of some use in the world. He advised the examination of the urine in every case of man or woman over forty years old. It was not ever right to state that if there was only a slight trace of albumin present, that urine was a normal one. Seldom did arteriosclerosis appear unless associated with Bright's disease. In cases of arteriosclerosis something could be done for the patient. The nitrites were in order, but he believed in giving a diet which contained less of the calcium salts than was generally given. Also some medicine which was known to influence the deposit of lime, especially the lactated alkalies and lactic acid.

The Diagnosis of Pulmonary Tuberculosis by Tuberculin and Other Tests.—Dr. Lawrason Brown of Saranac Lake said that pulmonary tuberculosis might be a

disease mainly of symptoms or of physical signs. The symptoms were usually the first indications. It was dangerous to wait until the tubercle bacilli occurred in the sputum; they never occurred until there was an ulceration of parts of the lungs. The examination of the feces for tubercle bacilli was often of value. Physical signs might appear without any symptoms. He offered some practical points in making physical examinations. One was to tell the patient to breathe out, to cough and then breathe in; in this way one could get ralés that could not be gotten in any other way. More attention should be paid to the condition of the apices. When all other methods of diagnosis had been exhausted, then and not till then, should recourse be had to tuberculin. It had about the same value in tuberculosis as had the Widal in typhoid fever. The ophthalmic test would probably prove of great value.

Esophagoscopy and Bronchoscopy.—Dr. THOMAS H. HALSTED of Syracuse presented many instruments and reported some cases.

A Study of Three Hundred Cases of Acute Anterior Poliomyelitis Occurring in the Recent Epidemic in New York City.—Dr. JOSEPH COLLINS and Dr. THEODORE H. ROMEISER made this report. This epidemic in New York began in July and practically ended in October. There were probably as many as 1,200 or 1,500 cases in this epidemic in New York and its suburbs. As a result of the prevalence of this disease much absolutely new had been learned. Hitherto clinicians and neurologists relied upon information received a long time after the disease originated. Not one neurologist in New York had ever seen a case during the time of its occurrence. With regard to the curability of the disease the books had stated that the disease was never recovered from. In this epidemic one case in 10 or 11 made a good recovery, and about one in 20 absolutely recovered. In this epidemic not only were the anterior horns of the spinal cord involved, but the disease affected other portions of the cord, and even extended up into the medulla and the pons, into the substance of the gray matter around the ventricles and into the cortex. The muscular paralysis was not confined to the extremities; paraylsis occurred in the abdominal, the lumbar and facial muscles as well. There were 202 males and 114 females affected in their records. The dangerous age was between one and three. The youngest patient was four days old, the oldest 15. Vomiting, constipation, anorexia, or thirst occurred in 114, diarrhea in 11, and aneuria in 21. The distribution of the paralysis showed one leg involved in 104 cases, both legs in 59 cases; one arm in 12 cases; both arms in 1. The abdominal muscles were involved in five cases. The early treatment was *rest*. After the subsidence of the inflammatory process the limbs should be placed in such a position that will entail less dragging and less deformity. It should be remembered that the pathological condition continues for days and weeks even after the acute manifestations have subsided and rest must be enforced. The importance of massage was brought out. Electricity was of value, but no more a specific than in other disease. Large doses of strychnine intramuscularly were of great value.

Officers Elected.—*President*, Dr. Edward L. Trudeau; *First Vice-President*, Dr. Arthur G. Root; *Second Vice-President*, Dr. John T. Wheeler; *Third Vice-President*, Dr. M. C. Hawley; *Secretary*, Dr. Wisner R. Townsend; *Treasurer*, Dr. Alexander Lambert.

Thursday, January 30—Third Day.

County Laboratories and Their Uses.—Dr. ORLANDO J. HALLENBECK of Canandaigua read this paper. He said that a fifteen months experience with a typhoid fever epidemic in an asylum had impressed him that we had inadequate means of fighting the enemy. The State laboratory was too remote. In order to prevent the dissemination of this and similar diseases, county laboratories should be provided. He said he was convinced that if every county in the State had a laboratory, it would be a great investment for the taxpayers. The disease was spread through the latent cases, and such diseases as typhoid could be positively diagnosed if means were at hand. Having been convinced that the health and the happiness of the citizens in the county depended largely upon this, he brought the subject up before his friends to get their support and cooperation. A campaign of education was at once started. At the regular meeting of their medical society in January, 1906, a committee of three was appointed to proceed along certain lines of providing ways and means of establishing a county laboratory. The Ontario County Medical Society also appointed a Committee. These committees formulated a plan to bring about the desired result. The citizens of the county were to be the beneficiaries and they should bear the expense. This meant money for the taxpayers. A citizen of Canandaigua donated enough money to erect and equip a house with the proviso that the State donate enough money to hire a pathologist and bacteriologist. For this purpose $1,500 were asked for. Charges were to be made for services rendered outside the county. It was further planned, if the project was a success, to organize a sanitary association, and the executive committee of this association would have general supervision of laboratory, etc. It was found, however, that the Board of Supervisors had no control. Then they interested the Senators and had an act passed which enabled the Board of Supervisors to act in the matter, and also to give the money annually for the pay of a bacteriologist. In 1906 the Sanitary Association was organized. The county laboratory was now a fact and was running on a paying basis. They had a first class bacteriologist and pathological laboratory. This was in a county of 50,000 population. The expenses for the first fifteen months was $111.91; receipts were $163.00, leaving a balance of $51.09. He asked that the Society appeal to the Governor, the Senators and the Assemblymen for power to equip such laboratories in every county in the State.

Dr. ROBERT P. BUSH of Horseheads asked that immediate action be taken on this matter. He said he had been appointed to confer with the Board of Supervisors and, as the result, a bill had been introduced which would give the Board of Supervisors power to act. The question was, should this bill affecting but one county be pushed, or should another bill be introduced which would affect all the counties.

Dr. HUBERT SCHOONMAKER of Clifton Springs said he had visited the Canandaigua laboratory, and he had no doubt but that the existence of such a laboratory in the county had an uplifting influence on the profession from the standpoint of medical science. By virtue of its presence it created a better scientific atmosphere. He was sure the County of Ontario was to be congratulated.

Dr. A. JACOBI of New York said that he was positive that if every member of the Legislature had a copy of the paper, no member could resist the request. He believed that a resolution, accompanied by a printed copy of the paper, placed in the hands of each member of the Legislature, would be a power in aid of the passage of the bill. He asked that some resolution be formulated and the resolution given over at once to the Council for further action.

Such a resolution was moved, seconded, passed, and sent to the Council.

Intracranial Complications of Middle-Ear Suppuration with a Report of Ten Cases Under Observation in Eighteen Months.—Dr. S. J. KOPETZKY read this paper and offered the following summary: 1. That intracranial complications result from contact of diseased bone with the dura, or they come about from an invasion of the

cranium through the labyrinthine or other anatomical channels. 2. That trauma, either accidental or surgical, may arouse into activity a latent intracranial lesion. 3. That intracranial lesions are generally, although not invariably, the result of an engrafted acute process upon a chronic middle-ear suppuration, especially if the chronic suppuration is a disease of the bone. 4. That intracranial invasion, when located in the posterior cranial fossa, will first have involved some part of the labyrinthine channels. 5. That involvement of the middle cranial fossa is more amenable to surgical treatment than when the posterior cranial fossa is the seat of the lesion. 6. That the earlier the surgical intervention, the better the prospect of an ultimate recovery. 7. That the evacuation of the pus from the posterior cranial fossa without surgical relief of the purulent labyrinth is useless (when the labyrinth is involved). 8. That lumbar puncture as an aid to the surgical treatment is of no value. 9. That no case should be considered too hopeless to submit to operation, as sometimes surprisingly good results are obtained even in such. 10. Finally that the surgical trauma in the form of radical mastoid operation should be imposed only on a patient giving the positive diagnosis of bone necrosis. Mastoid operation should not be undertaken simply to attempt a cure of a persistent purulent otorrhea.

Chronic Middle-Ear Deafness.—Dr. W. Sohier Bryant of New York read this paper. In his opinion there are very few cases of chronic middle-ear deafness that could not be improved. The exceptions are the cases of malformations of the middle-ear, the cases of advanced stapes fixation, and those of extremely advanced otosclerosis. The amount of the possible improvement in hearing is in inverse ratio to the pathological changes. Chronic deafness from past or present suppuration of the middle-ear can, without exception, be helped by treatment. The amount of help depends upon the power of the patient to make repair and upon the power of the physician to substitute parts which have been lost. Dr. Bryant stated that the causes of chronic middle-ear catarrh arose in the nasopharynx and affected the middle-ear by interfering with the Eustachian tube. The aim of treatment was first to restore the function of the Eustachian tube, and second to correct the defects of the middle-ear. By the treatment of the nasopharynx, prophylaxis of these defects was easily secured. He further stated that the causes of stapes fixation were trophic disturbances. Not only must these disturbances be checked but their recurrence must be prevented. The chief difference between the etiology of middle-ear suppuration and chronic middle-ear catarrh was pyogenic bacterial infection. Suppuration occurred almost never independent of nasopharyngeal disease. Prophylaxis of chronic middle-ear deafness due to suppuration was secured by preventing purulent inflammation through the care of the nasopharynx. But if suppuration had already begun, the hearing was preserved by immediately stopping the suppuration and by treating the nasopharynx appropriately. If any suppuration should exist in chronic middle-ear deafness, it must be immediately arrested. If perforations of the membrane existed, they must be closed by the growth of cicatrices. In order to compensate for the important parts of the sound conducting mechanism which might have been lost, it was necessary to adjust mechanical appliances. Adhesions of important parts must be loosened. He reported in brief, twenty-four cases. One showed a good improvement in hearing in a case of stapes fixation. Nine showed the three conditions caused by chronic middle-ear deafness treated in nine different ways with success. Thirteen showed thirteen various forms of chronic middle-ear catarrh treated in various ways with good results. The principle of this treatment was stimulation, exercise, and removal of tubal obstructions. Dr. Bryant concluded that all forms of chronic middle-ear deafness, except the congenital, were amenable to treatment, and that the amount of improvement justified the effort expended.

Medical Libraries for the Smaller Centers.—Dr. Smith Baker of Utica read this paper. He said that in nearly five hundred incorporated villages in the State of New York and all but seven of its cities there was not a Medical Reference and Circulating Library yet to be found. The physicians and surgeons purchased their own books and periodicals, etc., and such of course necessitated a useless duplication of professional works and periodicals in each community and this not only wasted funds, but resulted in one being inadequately provided for. The first medical library in this country was founded at the College of Physicians in Philadelphia in 1721. He urged that anything this organization could do to stimulate the inception and growth of Medical Reference and Circulating Libraries among all centers, large or small, should be ungrudgingly and persistently rendered. The idea itself needed advertising, encouragement, and enlightening. The State Library at Albany should be encouraged to stand in helpful relation to these enterprises.

Technique of an Efficient Operative Procedure in Malignant Disease of the Skin.—Dr. Samuel Sherwell of Brooklyn read this paper. He said he did not claim novelty as to method nor absolute perfection as to result, but he had used the method for thirty-five years with good results and relatively few recurrences. He recommended simply curettage, but thorough, deep, and efficient, followed by immediate and thorough application of an escharotic, preferably a 60 per cent. solution of acid nitrate of mercury. The caustic agent must be neutralized by some alkaline medium; he preferred common sodium bicarbonate in powdered form. This formed a scab which was allowed to remain till it fell or was pushed off by process of repair beneath. He said the scar was relatively insignificant. The knife was perhaps preferable in pendant and loose portions of the body—as penis, lips, ears—but in many of these even he preferred the method here described. He objected to the *x*-ray and radium because of time, expense, and uncertainty of result. He seldom found it necessary to use general anesthesia. The curette used should have a clean wire edge. He preferred oxide gas where general anesthesia was necessary. The amount of touching with acid nitrate could be learned only by experience; he frequently allowed it to remain ten to twenty minutes before neutralization. The last step was the introduction of bicarbonate of sodium into the excavated surface, pressed firmly down to make an adherent scab. This turned yellow and later black, and usually came off in a fortnight to three weeks. It should be kept dry. He did not use bandages. Inflammation followed at site after a day or two, but no dressing, and particularly no wet dressing, must be used. It would soon go down. The chances of recurrence were far less than after the use of the knife.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK

Special Meeting, Held on January 6, 1908.

Dr. Nathan B. Van Etten, Chairman for the Borough of the Bronx, in the Chair.

On Some Newer Aspects of Cardiac Pathology.—By Dr. Thomas E. Satterthwaite. The author, after stating that we had now reached a point where we could say with confidence that all toxemias, acute or chronic, some dyscrasias and hyperpyrexias, if long continued or severe, as well as other conditions, produced definite morbid changes in the heart walls, evanescent or permanent, said that while it had been difficult, of course, to connect characteristic clinical phenomena with each particular change, even that had been done with such a degree of ac-

curacy that, although we were lacking in important pathognomonic signs, we still were able to form in our minds tolerably distinct pictures of the several myocardial affections in their several stages. The word myocarditis had led to much misapprehension. It had been and still was used somewhat indiscriminately for various myocardial diseases. To most of us myocarditis implied myocardial inflammation, and therefore did not include the degenerative affections of the organ. Dr. Satterthwaite offered a new classification for these diseases, as follows: 1. Acute parenchymatous myocarditis. 2. Acute diffuse myocarditis, including the tuberculous, syphilitic, and suppurative forms. 3. Chronic myocarditis, including all the diffuse inflammatory changes mentioned. 4. The fat heart. 5. The fatty heart. 6. Hypertrophies, whether due to severe exercise, vascular diseases, blood disorders, neurotic disturbances, or possibly to pregnancy. Dilatation was not enumerated as a disease; it was an incident occurring at times in any of the varieties mentioned, and could not, therefore, be classed by itself. Some such classification as the above was essential for a clear conception of myocardial diseases, although many of the pathological phenomena were apt to be interconnected in any single instance. In considering the morbid changes of the tissues, the speaker stated that, so far as the parenchymatous alteration was concerned, it was the earliest form of muscle metamorphosis. The early parenchymatous changes were probably analagous to the "cloudy swelling" that many pathologists believed was the initial sign of nephritis. Acute myocarditis might occur in rheumatism with or without the articular signs; it was found also in tuberculosis, tonsillitis, measles, lobar pneumonia, erysipelas, epidemic influenza, septic processes, and gonorrhea. The parenchymatous change might be localized or general, usually the latter. Seen with the naked eye, the muscle tissue was lighter colored than normal, while the cut surface was lack-luster in appearance, swollen, and moist. Microscopically, the muscle cells were enlarged, less translucent than usual, and studded with minute particles derived from the protoplasm of the cells and albuminoid in character, so far as chemical tests showed. According to our present ideas, these changes were due either to the toxins of the above-mentioned diseases or the continued fever. In alcoholism a similar condition had been noted, though in that instance the alcohol was probably the poison. The mechanical effect of this change was naturally to limit the contractile powers of the muscle and cause cardiac debility sooner or later, so that the pulse was increased in frequency in order to maintain the equilibrium of the circulation; and yet if the nervous system was affected, as in diphtheria or uremia, the pulse might be abnormally slow. So far as the prognosis was concerned, we had to assume from analogical reasoning, together with clinical experience, that parenchymatous change, if not excessive, might disappear with convalescence; and yet, by analogy, we might equally well hold that they could lead up to acute diffuse myocarditis, and might terminate in fatty denegeration also. In most cases, however, we knew that the patients recovered wholly, so far as we could determine by clinical tests.

Instruments of Precision in the Management of Diseases of the Heart.—Dr. Louis Faugères Bishop said there were three elements to be considered in the treatment of circulatory diseases, each of which had its appropriate instruments of precision. These were the heart itself, the blood-vessels, and the circulating blood. The first to be mentioned, but not least of importance, was the hemoglobinometer, since the quality of the circulating blood had a profound influence upon the course of circulatory disease. More often than one might suppose the blood was found with a too great richness of hemoglobin, and with the red cells above the average normal number. For that reason accurate and frequent examination of the blood was of importance in the management of cardiac disease. Next should be mentioned the use of the blood-pressure measuring apparatus to estimate the pressure of blood in the arteries. This was never to be separated from the skillful palpation of the pulse, nor must one be misled into a false sense of safety by a normal blood-pressure. The mechanism by which the blood-pressure was regulated was able to maintain pressure within normal limits until changes in the heart and blood-vessels of an organic nature might have proceeded to a great degree of development. High blood-pressure was the result of cardiac energy acting against blood-vessel hypertonicity, and was never to be considered apart from the condition of the blood-vessels. The speaker referred to the great importance of vascular overtone as an element to be treated in many cases of heart disease. This overtone was chiefly discovered in the pulse, and was accompanied by high blood-pressure and certain cardiac and nervous symptoms, often leading to the belief in the existence of neurasthenia and heart disease. Its presence was proven by the course of the case and by the almost magical effect of a suitable plan of treatment. The sphygmograph was an instrument of record rather than one of precision in diagnosis. After showing the blood-pressure apparatus designed by Dr. T. C. Janeway and the Riva-Rocci instrument, Dr. Bishop demonstrated a method of estimating blood-pressure with which he was experimenting by the direct use of water pressure.

The Diagnosis of Diseases of the Heart.—Dr. William Henry Porter, in this paper, stated that one of the most important points to be considered was how to recognize and correctly interpret the so-called valvular murmurs. This was especially true in view of the fact that we had well-defined murmurs when there was no endocardial lesion of the valve and at the necropsy the valves were found to be practically normal. In order to accurately diagnosticate these valvular affections of the heart it was absolutely essential to understand precisely the anatomical position of the organ, and also the physiological mechanism of the action of the heart. A common law governed the seat and transmission of all cardiac murmurs, to wit: The abnormal sound called a murmur was heard with greatest intensity just beyond the point of its development, and the sound was transmitted from this point forward or backward in the direction of the current of blood, which, together with the valvular defect, was the cause of the murmur. Where there was an organic narrowing of the bicuspid orifice, an abnormal sound was produced in the line of the left auriculo-ventricular axis by an obstruction to the normal incoming current of blood from the left auricle to the left ventricle. This murmur had often been called presystolic, which was true so far as the ventricle was concerned, but in reality it was a systolic murmur of the left auricle. It occurred at the height of or just at the end of the auricular contraction, and just as the ventricle was beginning to contract. A mitral direct murmur was heard with greatest intensity just in front of or over the left ventricle at a point where the left auriculo-ventricular axis struck the anterior surface of the chest wall, over the junction of the fourth rib and its adjoining costal cartilage. This murmur was as a rule high-pitched, of short duration, and usually limited in area. The intensity of the murmur varied with the degree of obstruction and the strength of the auricular contraction. An obstructive murmur, located at the left auriculo-ventricular orifice, without any alteration in the structure of the mitral valve, was not infrequently heard in connection with considerable leakage at the aortic orifice. Regurgitation at the mitral orifice, without organic changes in the valve segments, unquestionably produced a mitral indirect murmur, and one which was of the greatest importance, first, because of its frequency; second, because it was so often

mistaken for a sound due to positive organic changes in the valve segments. Organic and the so-called functional insufficiency at the left auriculo-ventricular orifice could easily be differentiated during life, not by their rational or physical signs, however, but by an appropriate line of treatment. When the physical signs were due to positive lesions in the valve segments, then they would not disappear, but would usually become more pronounced under treatment, even though the general condition was improving. The abnormal sounds developed at the aorto-ventricular orifice were best divided into three general classes: 1. Those due to organic changes in the valve segments and the aorta, or in the substance of the ventricular wall as a whole. 2. Those due to congenital perforations of the segments of the aortic and pulmonary valve, and which might be classed as functional when compared with the truly organic changes that were acquired. 3. The so-called hemic murmurs. A positive diagnosis in cardiac conditions should only be given after several examinations, and after suitable treatment had been instituted. Hemic murmurs, so-called, were produced at the aortic and mitral orifices in very anemic subjects, and might be of the direct or indirect variety. A tricuspid direct or indirect murmur was practically an impossibility, owing to the almost negative blood-pressure on both sides of the valve.

On the Use of Drugs in Diseases of the Heart.—Dr. Reynold Webb Wilcox said that the wave of therapeutic nihilism which had of late years affected the profession was happily now passing away. Substitution and failure to observe the requirements designated by the United States Pharmacopœia were punishable by severe penalties, so that reliance could be placed on the quality of the remedies at our disposal. The work of the heart was determined to a very large extent by the condition (1) of the vessels, (2) of the cardiac walls, and (3) of the valves, the last-named being less important than the others. After referring to the value of the hemoglobinometer, the sphygmograph, and the sphygmomanometer, Dr. Wilcox expressed the opinion that the question of the blood-pressure was as yet only in its infancy. We could regulate the rapidity and the force of the heart's action, and there were three groups of remedies at our disposal for accomplishing this. As long ago as 1783 Withering had correctly laid down the indications for the use of digitalis as a rapid, low-tension pulse, with venous congestion. It was indicated, in general, when the cardiac action was rapid and feeble, with low arterial tension, and it was contraindicated when the cardiac action was strong and arterial tension high. Digitalis, however, had its defects, and the principal of these was the pronounced vaso-constriction which it produced. This led to the study of strophanthus as a substitute for it in suitable cases. This drug was found to be less of a vasoconstrictor and to have a more rapid action, and experience had shown that it should be used in the place of digitalis in the case of children and of the aged. Convallaria was untrustworthy, and adrenalin, another drug of the digitalis group which was now official, was objectionable on account of the renal irritation which it caused. Erythrophleum, or sassy bark, the last of the five drugs of this group, was a remedy which slowed the pulse and raised the tension, just as digitalis did. He had made a careful study of its effects, and the results obtained in the laboratory were confirmed by clinical observations. As compared with digitalis, it was decidedly more active in slowing the pulse, but it was irritating to the stomach. As a vaso constrictor it had greater effect than digitalis; in fact, as great as digitalis and ergot combined. While it was less cumulative than digitalis, it was also rather less reliable. Its use, he thought, should be confined to those cases of fairly competent heart with low vascular tension, in which it would show its effects more rapidly and markedly, and to those cases in which digitalis had lost its usefulness or had entirely failed. In the recent revision of the United States Pharmacopœia the tincture of strophanthus and all potent tinctures had been placed at the uniform strength of 10 per cent. The speaker next discussed the class of drugs which weakened the heart's action and slowed its rate, such as aconite and veratrum. Both of these were of great value in appropriate cases. Veratrum was especially esteemed by the obstetricians, and the danger from its use had been much exaggerated, since it always gave ample warning when it was being carried too far. There was only one drug which both increased the force and frequency of the pulse, and that was cactus. It was especially useful in neurotic heart and slow heart. If an active preparation was used, and such was readily found in the shops, brilliant results were obtained in appropriate cases. In pulmonary edema with heart failure the speaker did not know of any remedy as good as hot coffee given by high rectal injection. By combining with each dose half a grain of caffeine sodiobenzoate, we could get along with much less digitalis than otherwise. Strychnine was sometimes of service in cardiac disease, but one difficulty with it was that patients readily became habituated to its use. As to cardiac syphilis, he recalled three cases of gumma of the heart, proven to be such in the dead-house. In this disease he had found that arsenic iodide had sometimes proved efficient in cases in which the usual antisyphilitic remedies had entirely failed.

Dr. Satterthwaite asked the opinion of Dr. Wilcox of the value of adrenalin in cardiac failure.

Dr. Wilcox said that Dr. William H. Bates was the first to demonstrate the effect of suprarenal extract upon the eye and the larynx. He himself had been the first to make sphygmographic tracings under dry suprarenal extract, and these corresponded very closely with those obtained with adrenalin later. He thought that adrenalin should be employed for shock only when this was due to dilatation of the blood-vessels of the splanchnic area. Unless great caution was employed in its use, a weakly acting heart might be overwhelmed.

Dr. Satterthwaite said he had heard of cases in which death was caused by adrenalin. Under its use the pulse ran up very high at first, but soon sank below normal, and he therefore regarded it as a very dangerous drug. On the other hand, he had found the suprarenal extract distinctly useful at times, and he was accustomed to employ it in appropriate cases.

Dr. Edward E. Cornwall of Brooklyn thought the water sphygmomanometer of Dr. Bishop was very ingenious but unlikely to prove of much practical use on account of the height of the ceiling required, to say nothing of the step-ladder. As for the therapeutic nihilists to whom Dr. Wilcox referred, he was inclined to doubt if they existed to any important extent among regular physicians. He had never known of any excepting among Christian Scientists and the like, and he was inclined to believe that therapeutic nihilism was a bugaboo invented by those who were in the habit of using drugs excessively and without clear indications. These, whom he thought constituted a very numerous class, he suspected of stigmatizing the advocates of conservative and rational therapeutics as therapeutic nihilists in order to distract attention and criticism from their own prejudiced therapeutics. The speaker said he was pleased with Dr. Wilcox's remarks on strophanthus; he used the drug extensively and had learned to value it at least equally with digitalis. He thought its range in cardiac therapeutics was greater than that of digitalis, and though not exactly co-extensive, included much of the rangs of digitalis. He had found by clinical experience that for restoring lost compensation in valvular disease in children it was better than digitalis, and in conditions of high blood-pressure and in

dilated hearts with greatly weakened myocardium he thought there was no question of its superior value. He believed that failure to get good results from its use was often due to the fact that it was given in too large doses. He had observed clinically that while it was generally much less irritating to the stomach than digitalis, there were a few people who received less therapeutic benefit from its use and more irritation of the stomach than they did from digitalis. In regard to cactus he was inclined to believe it was a cardiac sedative of value in functional disorders. Convallaria he had found so vastly inferior to digitalis and strophanthus that he seldom used it. He thought we could well afford to ignore the claims of sparteine while we had so many better ones.

Dr. Robert E. Coughlin of Brooklyn said that for a number of years he had been interested in the subject of myocardial disease as related to athletes, and the strain put upon the heart in athletic contests. As medical men we were not particularly interested in the professional athlete, only so far as his life might become an example to the growing young, many of whom sought our advice when about to enter into athletics. The subject was very important when we considered that young school boys were at present put into contests by the public school instructors when their hearts were subjected to a very severe strain, as in sprinting and running a distance. There was great chance of injury being done the heart by violent exercise in competitive games. His opinion was that the young probably exercised too much, and those over 40 and 50 not enough. Hanlon, the famous oarsman, died at the age of 52 after a two days' illness of pneumonia, and it was known to be a fact that he had taken no exercise for ten years prior to his death. Was it not reasonable to suppose that after such an interval of inactivity myocardial disease was really the cause of his succumbing to pneumonia, which so markedly taxed the heart? Persons over 40 should try to keep up their cardiac muscle, so that no degeneration took place; this was especially so in men who had overdeveloped their cardiac muscle.

Dr. Porter, in closing, said he was glad that the question of the so-called athletic heart had come up for discussion, as it was very important, and, like all other affections of the heart, required a clear conception of the laws governing the nutrition of the heart muscle to fully understand. The one thing to be remembered was that the nutrition of the heart and all the tissues of the body depended upon a uniform expansion and contraction of the ultimate arterioles, so that the blood could be passed slowly or rapidly through the arterial capillaries, at which point all nutritive interchange occurred and was regulated, according to the demands of the tissues. By destroying this peculiar physiological control, the varying forms of pathological lesions were brought about. In the athletic heart, in consequence of great exertion, there had been a large demand for nutritive material by the muscle fibers, and they underwent physiological hypertrophy at the expense of the intermuscular connective tissue. Stop the exercise and the muscle fibers atrophied, but without corresponding hypertrophy of the intermuscular fibers. Hence, a weak heart resulted, the cavities dilated, and sudden death often occurred without apparent reason. The tension of the arterioles was the all-important element in the production and treatment of diseases of the heart. If the high or low tension was due to a toxemia from putrefactive fermentation in the intestinal tract, we must direct our remedies in such a manner that this causative factor would be removed. If the cause was an incompetent liver action, this must be sought out and relieved. If the fault was in the kidneys, they must be the organs to receive first attention. In like manner, if the faulty action was centered in the nervous mechanism, it must be the first point for our therapeutic attack.

Medical Items.

Pigmented Moles and Warts should either be left entirely alone or else completely extirpated with the scalpel. Protracted irritation by the application of caustics, curetting, etc., may lead to the foundation of new growths.

Abdominal Tumors.—Tumors of the liver, spleen, and stomach generally move freely with respiration as distinguished from tumors of the pancreas and kidneys, which move less freely.—*Southern Medicine and Surgery.*

Appendicitis in the Nursing Child.—Henri Mayet says that appendicitis is rare during the first year of life, but that it exists and should be looked for in the course of intestinal troubles. It is never present alone, but is a complication of severe forms of enteritis. In all the recorded cases, which amount to only nine in all, there was present severe enteritis or obstinate constipation. It is to be feared when in the course of an enteritis the abdomen becomes swollen, the muscles tense, the temperature and pulse high, and the percussion note is modified in the right iliac fossa. The age of the patient prevents other localization of the painful symptoms. Flesh eating cannot be given as a cause in nursing children; foreign bodies have not been found at autopsies, and the author refers the disease to enteritis as an exciting cause. Appendicitis is apt to occur in emaciated, cachectic, or rachitic children who are predisposed to any complication. The appendicitis is simply a localization of the enteritis. The prognosis is very bad, since the peritonitis is of the fulminating variety, and death occurs in from one to four days, provided the condition is not relieved by operation at once. In children over one year of age the course is much more mild and the prognosis better.—*Annales de Médecine et de Chirurgie Infantiles.*

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service for the week ending January 31, 1908:

SMALLPOX—UNITED STATES.

			CASES	DEATHS
California, Los Angeles	Jan.	4–11	15	..
Illinois, Chicago	Jan.	11–18	3	..
Springfield	Jan.	9–16	14	..
Indiana, South Bend	Jan.	11–18	1	..
Kansas, Kansas City	Jan.	11–18	2	..
Topeka	Jan.	4–11	3	..
Kentucky, Covington	Jan.	11–18	4	..
Louisiana, New Orleans	Jan.	11–18	8	..
Massachusetts, Fall River	Jan.	11–18	4	1
Michigan, Detroit	Jan.	11–18	1	..
Minnesota, Winona	Jan.	4–18	3	..
Missouri, St. Joseph	Dec.	7–14	1	..
	Jan.	4–11	4	..
North Carolina, Greensboro	Jan.	11–18	1	..
Ohio, Cincinnati	Dec.	31–Jan. 7	3	..
Oregon, Portland	Jan.	4–11	5	..
Tennessee, Nashville	Jan.	11–18	15	..
Texas, Fort Worth	Dec.	1–31	45	..
Washington, Spokane	Nov.	23–Dec. 7	5	1
	Jan.	4–11	6	..

SMALLPOX—FOREIGN.

Brazil, Rio de Janeiro	Dec.	16–23	24	14
Canada, Winnipeg	Jan.	4–11	9	..
China, Hongkong	Nov.	23–30	1	1
Guayaquil, Ecuador	Dec.	21–Jan. 4	..	6
France, Paris	Dec.	28–Jan. 4	6	1
Great Britain, Leith	Dec.	28–Jan. 4	..	1
India, Bombay	Dec.	17–24	..	6
Madras	Dec.	14–20	..	1
Italy, General	Dec.	26–Jan. 2	77	..
Catania	Dec.	26–Jan. 2	..	1
Japan, Kobe	Dec.	14–21	202	36
Mexico, Aguas Calientes	Jan.	5–12	..	4
Peru, Lima	Dec.	11	Cases in Hospital, 18	
Spain, Barcelona	Dec.	21–31	..	3
Denia	Dec.	28–Jan. 4	..	2
Valencia	Dec.	29–Jan. 5	46	3
Vigo	Dec.	28–Jan. 4	..	Present

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec.	7–14	4	3

CHOLERA—FOREIGN.

India, Bombay	Dec.	17–24	..	1
Madras	Dec.	14–20	..	4
Rangoon	Dec.	7–14	..	15
Japan, Osaka	Dec.	14–21	2	1

YELLOW FEVER.

Cuba, Santa Clara Province—				
Cienfuegos, vicinity	Jan.	23–25	2	.
Ecuador, Guayquil	Dec.	21–Jan. 4	..	1

PLAGUE.

Brazil, Rio de Janeiro	Dec.	16–23	3	4
Great Britain, Glasgow	Aug.	17–31	1	1
India, Bombay	Dec.	17–24	..	1
Rangoon	Dec.	7–14	..	6
Japan, Osaka	Dec.	14–21	28	28
Peru, Callao	Dec.	14–21	1	..
Catacaos	Dec.	14–21	3	..
Jequetepeque	Dec.	14–21	..	1
Lima	Dec.	14–21	5	2
Paita	Dec.	14–21	4	4
Piura	Dec.	14–21	3	1
Trujillo	Dec.	14–21	8	6

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Original Articles.

WHAT SHALL WE DO WITH FAR ADVANCED CANCER OF THE LARGE BOWEL?*

BY R. C. COFFEY, M.D.,

PORTLAND, OREGON.

PRESIDENT OF THE OREGON STATE MEDICAL ASSOCIATION; SURGEON-IN-CHIEF TO THE NORTH PACIFIC SANATORIUM.

WE may divide far advanced cancer of the large bowel into three classes: (1) Those which are far advanced from a functional standpoint but which are not far advanced by reason of the extent of the

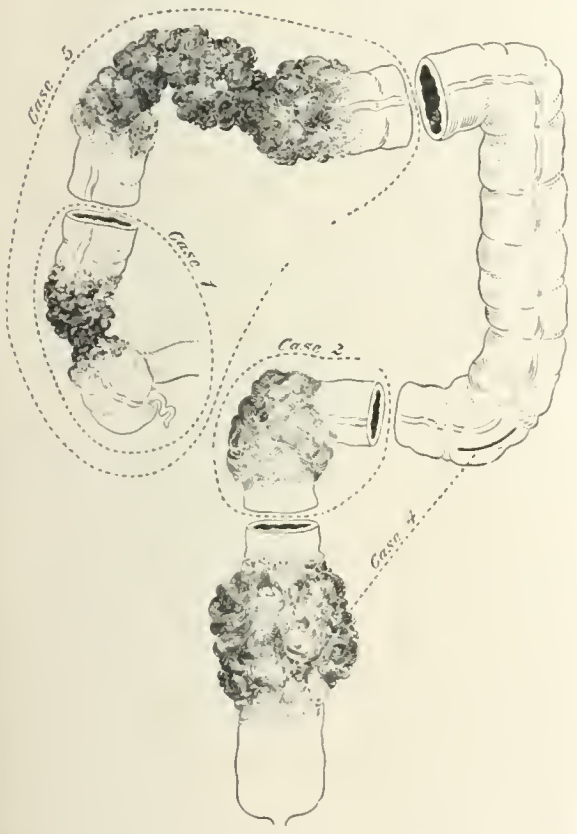

FIG. 1.—Showing the extent of operation in the several cases indicated.

involvement. A type of this form is seen in the annular variety which early produces a stricture and total obstruction. (2) Those in which obstruction is present, due to an extensive growth in one side of the intestinal wall and in which there is marked cachexia. (3) Those in which a growth is extensive in the proximal wall and mesentery, producing marked cachexia without obstruction. Unfortunately, it so happens that most cases of cancer of the large bowel, when they reach the surgeon, belong to one of the three varieties of the far advanced cancer. Those cases of cancer of the large bowel which are diagnosed early, before any of the foregoing conditions exist, admit of no discussion as to the proper treatment, as I think it will be conceded by all authorities both medical and surgical, that early operation is the thing to be done. Such unanimity of opinion does not exist as regards the far advanced cases. Hence the question asked in the title.

The subject of cancer is at the present time receiving the attention of a great many writers and investigators, and it is well that such should be the case, for, according to government statistics as classified by McConnell, in 1890, cancer was thirteenth in the list of causes of death, and the death rate was 47.9 per hundred thousand of population. In 1900 it had moved up to seventh place in the cause of death to the death rate of 60 per hundred thousand of population. It is especially interesting to us on the Pacific Coast when we learn from the same authoritative source that our Pacific Coast country has a larger per cent. of cancers than any other part of the United States. For we find that the Pacific Coast region has 51.9 deaths from cancer in every thousand deaths, while the heavily timbered northwest region of Minnesota and Wisconsin follows closely with 46.8; the prairie regions with 43; the central regions, plains and prairies, 34.1; the gulf coast and south Appalachian section, 20; while the southern Mississippi river belt gives only 11.3 deaths in a thousand deaths. I personally do not like to contemplate that our country is the very worst for this most serious of all diseases, and would be inclined to try to explain it on the ground that our extremely healthy climate produces fewer deaths from other causes and therefore increases the proportion of cancer. One of McConnell's conclusions is that cancer appears to have actually increased in the United States, 12.1 deaths per hundred thousand of population, or about 25 per cent., in the last ten years. This seeming increase may be more apparent than real, as our diagnostic methods may reveal many internal cancers that were formerly not diagnosed either before or after death. This condition is even more alarming when we remember the fact that so far absolutely nothing has been determined as to the cause and nature of this malady and nothing except early and complete extirpation offers any hope of cure. This, the only treatment, is made impossible in the majority of cases, first because the people do not appreciate the dangers of apparently minor symptoms or, being in dread of having a surgical operation performed, willfully avoid physicians; or, because of the well-known tendency of cancer to recur, they refuse to have the knife used lest (as they believe) the cancer be thereby stimulated. Second, many physicians, in deference to the public, lest they should be classed as alarmists, watch a suspicious growth for a long time and thus postpone

*Read at the annual meeting of the Oregon State Medical Society, July 13, 1907.

action till long after the case should have been in the hands of a surgeon; but a very large percentage of cancers produce such slight symptoms and are in such protected places in the body that the most expert diagnostician may be misled until radical cure is impossible. Cancer of the large bowel, because of the protected positions which it occupies, and because of the extreme difficulty of reaching some portions of it for surgical purposes, has been more unsuccessfully treated and therefore has received less attention until recently than has cancer in other parts of the body. Within the past two or three years, however, interest has become greater in this subject and consequently success has been better. At the Cleveland meeting of the American Surgical Association (1906), articles were read by C. H. Mayo, Bloodgood, Armstrong, and Willy Meyer, and in August, 1906, published in *Surgery, Gynecology and Obstetrics,* which symposium I believe is our best treatise on the present status of the treatment of cancer of the large bowel. But we are just opening this field of surgery and it is for this reason that I present this paper, based on an experience covering one year, and relating all the cases treated by me during that time, giving the stage and extent of the disease, form of treatment used, and the immediate results of the treatment.

As I have stated in a previous paper on appendicitis, statistics are so unreliable, depending entirely on the viewpoint of the maker of the statistics, that they are of little value to any one else, unless the circumstances of each case are related and unless all the cases coming in the practice of a given operator are reported as they occur. For instance, one operator may take the position that no attempt at operation should be made unless a positive assurance of permanent cure be given. This operator, we may say, might not have an operative mortality of greater than 5 or 10 per cent. Another operator might take a more radical stand, like that expressed by Bernays before our society eight years ago, viz., that practically all cancers should be extirpated regardless of the danger. Such an operator might in a series of cases get as high as 75 per cent. mortality, while a surgeon taking an intermediate view would save more lives and give more comfort than either, but would have a much larger percentage of deaths than the extremely timid surgeon who has 5 per cent. mortality. Therefore, it seems almost useless, not to say misleading, to report or review the statistics which have been given, and yet it is the only way by which we can form an approximate estimate of what we may expect. I will therefore quote some records of work done by the conservative class of surgeons who occupy a rational plane, although, as before stated, their statistics are no doubt based upon different premises. Hermann's statistics, according to Mayo, show that one-half of all cancers involve the alimentary tract and that one-sixth of the cancers of the alimentary tract are in the large bowel. Ewald's collection of over 1,100 cases gives their location as about nine in the rectum to two in the rest of the colon. Deaver, at the Cleveland meeting of the American Surgical Association in 1906, presented "A Year's Experience in Intestinal Surgery," and out of forty-six operations on forty patients for intestinal troubles, thirteen were cases of intestinal carcinoma, all in the large bowel. The cecum was diseased in four cases, the sigmoid in four, the hepatic flexure of the colon in two, the transverse colon in one, the splenic flexure of the colon in one, and the rectum in one. Five of these thirteen patients died—those in whom the splenic flexure and rectum were involved, one of those in whom the cecum was affected, and two of those in whom the sigmoid flexure was diseased. The remaining eight patients recovered from the immediate operation and were relieved temporarily, but of the four successful cases in which the patients were seen sufficiently early for radical operation to be done, two developed symptoms of recurrence about eight months later and were again temporarily relieved by further operation; and in the case of two others on whom a radical operation was done, sufficient time has not elapsed since the operation to permit of their being considered in this connection. Deaver says: "It is true of intestinal cancer, as of all other forms of malignant disease, that the surgeon seldom sees the patients early enough to offer them hope of radical cure. Early recognition of internal cancer is one of the desiderata of surgery. Among the thirteen patients herewith reported, only six were seen early enough to render any radical operation justifiable, and in most of these, during the past as during the former years, I have been forced to content myself with doing an entero anastomosis."

To get an idea of relative surgical success in various parts of large bowel we must resort to different authorities. Cumston and Vander Veer reported in detail, in Vol. XXXV, *Annals of Surgery,* the eighty-three cases of excision of the cecum for carcinoma recorded to that date. In ten of these reports it was not stated as to the immediate fatality. Of the other seventy-three, thirty died under the operation and forty-three recovered from the immediate operation. Most of these cases were performed by operators of international reputation. A very striking feature in the study of these cases is the great improvement in statistics from Bilroth down to the present. Willy Meyer, in the Cleveland Symposium before the American Surgical Association, reported his experience with operations on that portion of the large intestine which lies between the cecum and sigmoid, not including either. Inasmuch as Meyer has given briefly the details of his eleven cases, I will quote them here.

"Case I.—Female, 33 years old; cancer of hepatic curvature, with multiple metastases in ascending and transverse colon. Colocolostomy in July, 1888; uninterrupted recovery. Patient in excellent condition nine months later; had gained thirty-six pounds in weight; presented before the Surgical Section of the New York Academy of Medicine. The patient then left for Europe, so that further operating here, as intended, became impossible. Primary ileocolostomy and resection of the diseased portion of the gut at a second sitting, I now think, would have been more advisable in this case. As far as I have been able to determine from the literature, this was the first case of colocolostomy done for malignant stricture.

"Case II.—Male, 46 years: cancer of hepatic curvature, involving ascending and major part of transverse colon. Ileocolostomy, end-to-side, Murphy's round button, February, 1899, with excision at the same time. At first, satisfactory recovery; then, suddenly change for the worse, after severe attack of coughing; on changing dressing, ten days after operation, it was seen that wound had burst open again; peritonitis; death two days later. Layer sutures of catgut had been used for closing the wound. Since this experience I have always used through and through silk sutures for closing the abdomen in the male.

"Case III.—Male, 68 years; cancer of lineal curvature; intestinal obstruction; ileus. Ileosigmoidos-

tomy, October, 1902; death twenty-four hours later, from aspiration of fecal vomit and pneumonia. Primary enterostomy of caecostomy would probably have been the wiser procedure, but artificial opening was refused by family.

"Case IV.—Male, 46 years; cancer of transverse colon and hepatic curvature; very large tumor; fever; subacute peritonitis, due to perforation. Ileocolostomy; death six days later as a result of peritonitis.

"Case V.—Male, 65 years; cancer of ascending colon and hepatic curvature; intestinal obstruction for eight days; peritonitis, relief asked for but enterostomy refused. Therefore, exploratory incision; afferent part of intestine enormously enlarged; probably distention ulcerations, for gut bursts despite most careful handling; closure of rent; multiple incision of eventrated coils; Delenberg posture preceded as well as followed by stomach irrigation. At the moment that patient was lifted from stretcher into his bed, massive vomitus with aspiration occurred, causing instant death

"Case VI.—Female, 57 years; cancer of hepatic curvature, involving ascending colon. Ileocolostomy November, 1905. Excision of ascending and half transverse colon five weeks later; good recovery; patient well at the present time.

"Cases VII to XI.—All were cancer of upper part of sigmoid curvature, with symptoms of complete or partial intestinal obstruction; pronounced meteorism or symptoms of ileus. Treatment, small median or lateral exploratory incision on outer side of left rectus muscle, for the purpose of located suspected tumor, followed by typical oblique incision parallel to Poupart's ligament for colostomy (or later incision made at once, in order to avoid cuts): artificial anus in lower end of descending colon with spur formation. Three recoveries, two deaths."

Meyer then says that while the results in the foregoing cases are not particularly encouraging, it must be remembered that all, with the exception of case VI, were in a more or less hopeless condition when they came for treatment. In order to prove the results in a more favorable line of cases in which it is possible to do an immediate anastomosis, I wish to call attention to the sixteen cases of cancer of the colon reported by Jonas at the Boston meeting of the American Medical Association in 1906.

"Case I.—Primary endocarcinoma, located in sigmoid. Removed. Ends closed—lateral anastomosis. Needle and thread. Recurrence in five months.

"Case II.—Secondary to papillomatous ovarian tumor in the descending colon. Removed end-to-end. Czerny-Halstead suture. Free after one year. Lost from sight.

"Case III.—Primary. Adenocarcinoma. Located in upper end of descending colon. 1. Short circuit. Murphy button. 2. Growth removed, ileocolostomy. End-to-side. Recurrence in twelve months. Death in eighteen months.

"Case IV.—Primary. Adenocarcinoma (Ileocolostomy). Located in ileocecum. 1. Artificial anus from ileum. Lateral approx. Needle and thread. Well six months later. Not heard from since.

"Case V.—Primary. Adenocarcinoma. Located in ascending colon. Hepatic flexure. Excision, ends closed, lateral approx. Murphy button. Well two years later.

"Case VI.—Secondary. Cicatricial mass. Located in descending colon from uterus and tube. Removed end-to-end suture. Double supporting loop. Lost sight of after two months.

"Case VII.—Primary. Adenocarcinoma. Located in ileocecal region. Ileum planted into side of colon. Murphy button. Lost sight of four months later.

"Case VIII.—Primary. Neoplasm located in lower end of descending colon. Relieved by short circuit, with Murphy button. Died in three months.

"Case IX.—Primary. Adenocarcinoma. Located in lower end of descending colon. Removed end to end. Murphy button. Halstead suture, double row for support. Well after one year.

"Case X.—Secondary. Carcinoma. Located in appendix, head of colon, and ileocecal valve. Removed. Lateral approximation by suture. Moynihan clamps. Well six months later, then lost sight of.

"Case XI.—Primary. Carcinoma. Located in ileocecum. Removed end of ileum implanted to side of colon. Murphy button. Died.

"Case XII.—Primary. Adenocarcinoma. Located in splenic flexure. Removed end to end. Murphy button. Lembert reenforcing. Died.

"Case XIII.—Primary. Adenocarcinoma. Located in descending colon. Removed end to end. Murphy button. Lembert reenforcing. Well after one year.

"Case XIV.—Primary. Adenocarcinoma. Located in splenic flexure. Removed end to end suture. Czerny-Lembert. Double loop supporting ligature. Well after one year.

"Case XV.—Primary. Adenocarcinoma. Located in transverse and hepatic flexure. Closed ends. Lateral approximation. Murphy button. Died four months later from a fall producing basilar fracture. No return of growth.

"Case XVI.—Primary. Myofibrous polypus. Located in hepatic flexure. End to end. Connell-Cushing suture. Double loop suspension. Well after three years."

This report of Jonas' is most encouraging in that it shows us that cases operated upon while the patient is in good enough condition to withstand an immediate anastomosis and removal, the mortality should not be markedly greater than in other major intestinal surgery. Leaving the upper segments of the colon, we will take up the larger field which represents nine-elevenths of the cancers of the large intestine, viz., the sigmoid and rectum. Hartwell analyzes forty-six cases of cancer of the rectum, twenty-six in males and twenty in females. The greater numbers being from forty to sixty years of age. The mortality from operation was 26 per cent. Recurrence in less than two years occurred in 11 per cent., and there was a survival of more than three years in a similar percentage. Complete colostomy was found to be a satisfactory method of preventing sepsis and the operative mortality lowered by this method of operation. Tuttle's mortality for cancer of the rectum is 16 per cent. Kelsey's mortality has recently been as low as 3 per cent. in the lower segment of the rectum and 26 per cent. when it was necessary to open the peritoneal cavity. The Mayo brothers have during the past five years operated upon twenty-six patients for high rectal cancer by the combined abdominal and low methods, both surgeons working at the same time. Of these, seven died as the result of the operation or within the first month. Of the nineteen who recovered, two were not traced, but were known to be alive and well more than one year after the operation. Ten patients operated upon

too recently to be of value are alive and well now. One operated upon a year ago died before the end of the year. This is the only one of those operated upon more than a year ago, and who survived the operation, who failed to live one year. Seven lived over one year; five are alive now. Five lived over two years; three alive now. Three lived over three years, two alive now. As there were only four of those operated upon more than three years ago and two are alive and well, we have 50 per cent. alive and well over three years; too few from which to draw conclusions, but suggestive, says Mayo. The statistics of Tuttle, Hartwell, Kelsey, and the Mayos are sufficiently alike to be suggestive of the mortality of operative treatment of cancer of the rectum.

I wish here to give a report of personal cases operated on during the past year from June 5, 1906, to June 6, 1907.

Case I.—A woman, aged 32, referred to me by Dr. Osmond Royal, of Portland, to whom the case had been referred by another physician as one of appendicitis. Gave history of several months gradually increasing constipation, until finally obstruction became complete. The pain in the right side had gradually increased and at this time was very severe, inasmuch as the location was right for appendicitis, it might readily be diagnosed as appendicitis. The glands around the cecum and ileocecal valve were enlarged. The patient was much emaciated and showed a decided cachexia. The patient was young and we decided to do a radical operation by removing all the glands and mesentery in this neighborhood along with a good portion of the ascending colon, ileum, cecum, and appendix. (See Fig. 1.) An anastomosis was made between the ileum and that portion of the ascending colon which was left near the hepatic flexure. The patient made an uninterrupted recovery, soon regained her normal health and has remained in perfect health up to this date. (Jan. 23, 1908.)

Case II.—A man 52 years old. Patient had been treated by home remedies for several days after showing signs of intestinal obstruction. The patient was referred to a colleague who immediately recognized intestinal obstruction, but was not positive as to the nature of the obstruction. He therefore waited a day or two. Finally the resident physician noticed a tumor protruding through the rectum which proved to be a cancer of the sigmoid which had been forced out through the anus. It was at this time that I was called in consultation by Dr. Locke. The patient had had no action of the bowels for thirteen days and had not even passed gas. He had been vomiting fecal matter for several days. Consequently, he was in a state of profound shock. Cold, clammy perspiration stood out on his face and body. Surgical means were urgently indicated. We therefore opened the abdomen as soon as possible, and with an assistant pushing up the tumor through the rectum from below, the intussusception, which had formed, was reduced. We thought at the time of doing a temporary operation, but the nature of the case and the wishes of the patient's friends compelled us to decide on radical operation. We therefore excised the growth (see Fig. 1) and made a lateral anastomosis with clamps. Approximately, a gallon of foul, dark liquid fecal matter passed through the newly-made opening and out through the anus, involuntarily. The patient stood the operation well, considering his condition, but died two days later of stercoremia and peritonitis. This patient might possibly have been saved by a two-stage operation, but I do not think it probable.

Case III.—A woman, aged 32, a trained nurse, referred to me by Dr. E. A. Pierce for whom she was working. A year before she had consulted a prominent internist in one of the Eastern centers, who pronounced her case neurasthenia and constipation of a hysterical type. He did not benefit her, so she went to a surgeon who removed her appendix but failed to find the obstruction. She lost flesh and gradually grew worse until she would take severe cathartics for several consecutive days before producing results. Her pain seemed to be located in the region where the appendix had been removed. The thought of adhesions in this neighborhood was given due consideration. I was called to see the case two weeks before the operation was done. The patient had lost flesh, had a yellow color, and obstinate constipation with every evidence of some kind of obstruction. As a test, I ordered aloes, strychnine, and belladonna pills, and later ordered considerable doses of castor oil without producing results or without causing great discomfort. During these two weeks I did not see her, but practically no action of the bowel was obtained. Extensive sores had formed in the mouth as the result of stercoremia and digestive disturbance. At this stage I had her come to my office where I made an examination which I had foolishly refrained from doing at first on account of her modesty, and discovered

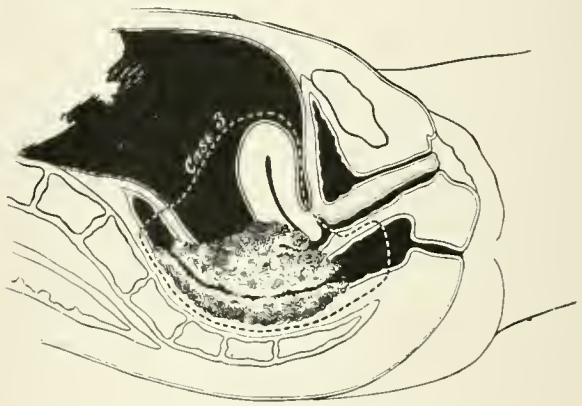

Fig. 2.—Tumor and extent of operation in Case III.

the rectal and vaginal growth shown in Fig. 2. I told her her condition and she insisted upon a radical operation and not a colostomy. An abdominal incision was made, when it was found that the growth involved the uterus and rectum to an extensive degree. The internal iliacs were ligated as a preliminary step. The mesorectum was severed just below the brim of the pelvis. The pelvic and abdominal wounds were then packed thoroughly with gauze to protect the peritoneum temporarily from infection while I worked below. I then split the perineum and rectovaginal septum as advised by Murphy. The sphincter ani was left and the mucous membrane covering it, as I hoped to do a combination of the Murphy and Weir operations. The cancer was then removed, including the rectum almost to the promontory of the sacrum. The uterus, tubes, and all fat and glands in the hollow of the sacrum were also removed. The sigmoid was brought out, but was found to be too short to reach the rectal segment. Consequently, it was partially attached to the vaginal mucous membrane. After changing gloves, I returned to the abdominal wound and carefully sutured the pelvic peritoneum, forming the broad ligament around the newly placed intestine, thus walling that wound entirely from the peritoneal cavity. No evidence of peritonitis or

sepsis developed, but the sores in the mouth grew larger under all forms of treatment, until it became impossible for the patient to take nourishment, and she died of starvation four weeks after operation. Post mortem showed perfect walling of wound and no sepsis at open wound.

Fig. 3.—Showing the extent of operation in Case VI

Case IV.—Woman, aged 64 years, referred to me by Dr. Jos. R. Numbers, of Weiser, Idaho. This patient gave a history of gradually increasing constipation covering a period of more than a year. She had had evidences of almost total obstruction for about four weeks, when she came to me, and was vomiting all fluid taken and in addition the contents of the bowel. A vaginal examination showed that the tumor was well fixed and occupied the large intestine as it passed over the promontory of the sacrum. On opening the abdomen it was found that the growth was so firmly fixed that it would be impossible and useless to remove it. We did a left inguinal colostomy (see Fig. 1), bringing down the intestine from as high up as possible and out through a gridiron incision. The surprising feature of this, as is often found, was that the bowels acted regularly once a day, and the patient was up on time and went home in a very comfortable state, and at last reports was still very comfortable. Kelsey claims to have seen patients that lived for five years after a colostomy in comparative comfort.*

Case V.—Woman, 43 years old. This was the most extensive and most thoroughly inoperable case of the series. As it will be seen, it included the

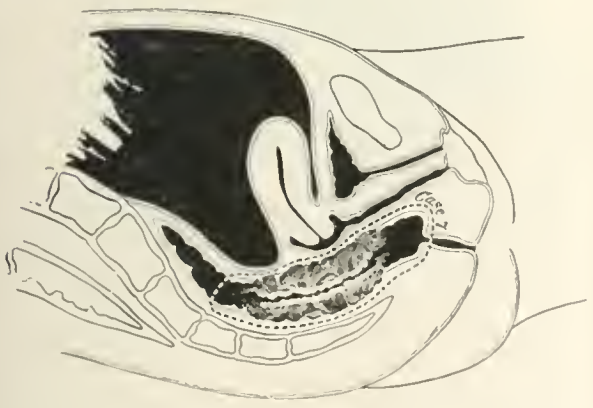

Fig. 4.—Tumor and portion of bowel removed in Case VII.

hepatic flexure, half of the transverse colon, and part of the ascending colon. The obstruction had been complete for four weeks and vomiting had continued during this time. The patient had put off operation until the last moment, and as she was too weak to move, I was called to Grant's Pass (three hundred miles away) by Dr. Loughridge to operate. She was very positive in her demands for a radical operation, even though death resulted, and was very much opposed to an artificial anus. Therefore, we were prepared to take long chances. We found that the ileocecal valve acted perfectly so that gas could not return through it. The consequence was that the cecum was distended to an enormous size. We removed the cecum, portion of the ileum and the colon almost to the splenic flexure, as indicated by the dotted line in Fig. 1. The condition of the peritoneum covering the small as well as the large intestine, was such as to make inadvisable an anastomosis at this time, so the end of the ileum was drawn out through a special opening in the right groin. The patient made very rapid improvement and one month later I went to Grant's Pass and did an ileosigmoidostomy, closing the ileum which had led to the surface. The patient recovered well from the operation, but the growth returned along the posterior abdominal wall, and the patient died three months after the first operation from general cancerous condition.

Case VI.—Referred to me by Dr. Locke, who assisted with the operation. The patient was a lady

Fig. 5.—Site of stricture and portion of bowel removed in Case VIII

about sixty-four years of age. As is seen in the illustration, the cancer developed just inside the sphincter, a small portion of it showing through the external sphincter on the front surface. The vaginal mucous membrane was split after Murphy's method, the entire rectum and anus, including the sphincter muscles, wre dissected out, as shown by the dotted line (Fig. 3), including all fat and glands in the hollow of the sacrum. The upper rectum and sigmoid flexure were dissected up and brought down through the opening and the perineum sutured. The patient made an uninterrupted recovery and was, when last heard from, in very good health. The sigmoid served its function as a container admirably in this case, the bowels acting but once a day as a rule. There was very little soiling of the pads.*

Case VII.—A woman, aged 36 years, was referred to me by Dr. Esther Pohl. She gave a history of having had, as she said, a large ulcer removed just five years before. At this time the rectum was entirely closed except for very thin liquids. There was about two inches between the internal sphincter and the lower growth, so we split the perineum according to Murphy's method, and dissected out the rectum up nearly to the promontory

*This patient died eight months after the operation, but had been greatly relieved during her life.

*January 23, 1908, one year and two months after operation, no recurrence and patient in good health.

of the sacrum (Fig. 4), opening the peritoneal cavity, and drawing the sigmoid down through the original anus (for in this case we left the sphincter) and sutured the intestine to the margins of the skin around the anus. We used drainage back of the rectum in the ischiorectal fossa. The patient did

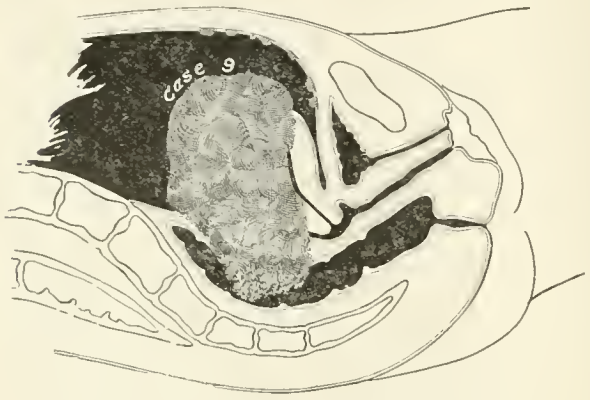

Fig. 6.—Showing the inoperable tumor in Case IX.

well for five days, having no unfavorable symptoms, when she died very suddenly of pulmonary embolism. This case was looked upon as one of the most favorable I had had, from the standpoint of making a cure, had it not been for this complication.

Case VIII.—A woman, aged 44 years, was referred to me by Dr. Gustav Baar. As will be noticed by the drawing (Fig. 5), the stricture was about two inches above the sphincter muscle. She gave a history of more or less obstruction at this point extending over a period of fifteen years, but recently the growth had taken on an active increase and looked very much like malignancy. The obstruction at the time she presented for operation was complete for everything except very thin liquid. The rectum was removed by Murphy's method, the upper segments brought down and sutured to the mucous membrane of the anus. The perineum closed and drainage placed in the ischeorectal fossa. The results were all that could be desired and sphincteric action was quite satisfactory.*

Case IX.—A woman, aged 46 years, twenty years ago had an attack of peritonitis, possibly the result of a miscarriage. Three years ago she suffered from neurasthenic indigestion without pelvic symptoms. Because of her nervous state, Dr. Mae Cardwell examined the uterus, which was apparently normal, but retroflexed and prolapsed and irreducible. She then did not see her until two weeks prior to the operation. Two years prior to the operation, the patient had a severe attack of pain in the stomach resembling indigestion which was treated by another doctor. Constipation had not been a marked symptom. Just before she was seen by Dr. Cardwell the last time, she consulted a doctor for pain in her stomach with symptoms of pressure on bladder and rectum. During this month mucus, tinged with blood, passed at various times from the rectum. Three days before the operation was performed, which was exploratory, Dr. Cardwell gave her three grains of calomel which was followed by a marked hemorrhage from the bowel. No hemorrhage had occurred from the uterus at any time, and no erosion of the cervix existed. An exploratory laparotomy revealed the condition existing. I may here state that while the growth seemed to appear in the rectum, producing hemorrhage, it was thought probable that it was simply a fibroid which had by pressure forced its way through the rectum. Therefore an exploratory operation was thought justifiable. On opening the abdomen, the growth was found to be unquestionably malignant, the tumor itself, which involved a large portion of the uterus and filled the pelvis entirely (see Fig. 6), extended far out into both broad ligaments, and also involved the neighboring peritoneum as shown by the small nodules in front of the uterus. The case was clearly inoperable except by ligating both internal iliac arteries. Inasmuch as the peritoneum and all neighboring tissues were involved, it was seen that such an operation could do no permanent good. The abdomen was then closed and the patient necessarily left to her fate, which must be death. There is no obstruction, therefore an operation of colostomy or curetting of the rectum would do no good at the present time. It might be of value later.*

Case X.—This patient was referred to me by Dr. Rogge, June 6, 1907. The first symptoms were that of hemorrhage. Cachexia was very marked and the patient was rapidly losing flesh and the tumor was large without causing any marked obstruction (see Fig. 7), consequently she was advised not to have an operation performed.†

Case XI.—This was not a cancer case, but is given as an illustration of the removal of the entire colon except the rectum (see Fig. 8), with perfect results as far as function was concerned, redemonstrating the fact that if it is necessary in cases of cancer, the entire colon can be removed without seriously damaging the health of the patient, as has been demonstrated by Mayo and others.

Thus during the year, I have been called upon to treat ten cases of cancer of the large bowel, all but two of which have been of the far advanced type in some one of the three forms of far advanced cancer. Of these patients, eight were operated upon. Two of them died within six days of the operation, one as a result of the stercoremia existing, and the other as a result of pulmonary embolism, which might occur in any surgical operation and is to be classed under the heading of surgical

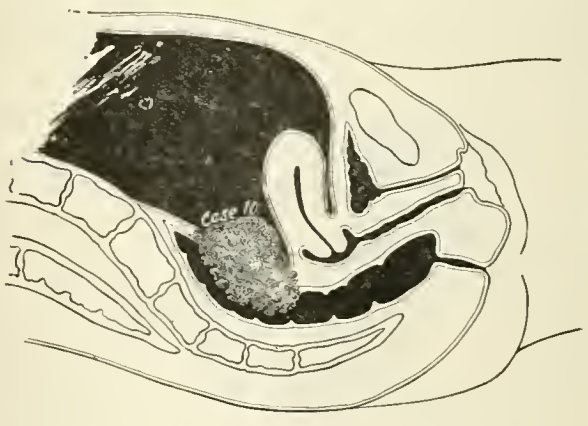

Fig. 7.—Showing the tumor (not removed) in Case X.

contingencies. One patient died of starvation, after four weeks, due to large areas of ulceration involving the mouth and esophagus, thus preventing

*The result is still good now, eight months after operation. Unfortunately the specimen was not examined and was misplaced, so we are not sure it was malignant.

*December 22, 1907, seven months after exploration, was called to do a right inguinal colostomy, as complete obstruction with vomiting had existed twenty-seven days. January 28, 1908, patient much more comfortable and is taking nourishment very well.

†Died about November 6, 1907, without obstruction becoming complete.

the patient from swallowing. This case, if it could have been diagnosed and operated upon six weeks before, would unquestionably have been a successful case for some months if not permanent. Case V. was too far advanced to hope for permanent cure, but by doing the operation in two stages, the patient recovered from the operation and lived three months after the first operation, dying from a direct toxemia of the cancer, instead of drowning in fecal matter. Case III ended fatally as the result of starvation. The life of the patient in Case III, while it was not shortened by the operation, was evidently not appreciably lengthened. In Case IV the patient was made more comfortable. In Case V life was prolonged probably two and one-half months and made more comfortable. Cases I, VI, and VIII are cases which promise to be cures. Case VII was one of the most promising cases, had it not been for the surgical accident. Case II would probably have been cured had the patient been operated on early. Cases IX and X were advised to have no radical operation performed, inasmuch as the disease is evidently beyond hope of cure and as there is no obstruction.

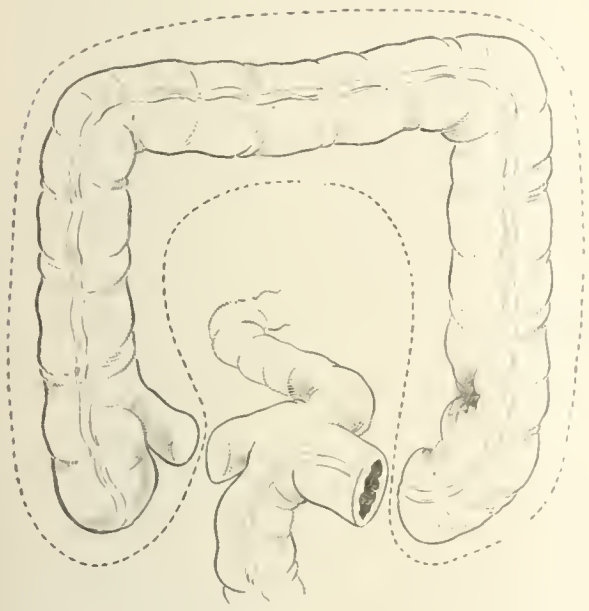

FIG. 8.—Complete excision of colon one year after ileosigmoidestomy performed for cure of ulcer of descending colon in Case XI.

As we have three grades or degrees of far advanced cancers, so we have three methods of treatment for far advanced cancer. Witzel puts it very nicely in a short rule as follows: "Small cancers, large operations, large cancers, small operations." The fact remains that almost all cases of cancer of the colon are best treated by some form of surgical operation, and if by any means we can make it easier to make diagnosis early, we will certainly greatly modify the death rate of this frightful disease.

I have not gone into the methods of diagnosis, as these you will find in your text books. I may simply state that they all fail frequently in the hands of the very best doctors. Therefore the only safe plan in cases of bowel trouble in which the symptoms are marked and withstand all forms of treatment, if accompanied by emaciation out of proportion to the other symptoms, is to advise an exploratory incision which is almost devoid of danger under proper conditions (in case there is no growth) and will allow of a diagnosis of many cases of cancer early enough to produce a radical cure while otherwise the diagnosis would necessarily be postponed until treatment would fail. I have reported the cases here for the purpose of adding to the literature of the subject. There is no part of the large intestine which is beyond the reach of surgical methods, even in the presence of far advanced cancer, for even in this small series, as is shown by the pictures, I have been called upon to remove every single section of the large intestine from the ileocecal valve to the anus, in one year's experience. If a diagnosis can be made early enough, we can certainly produce a remarkable showing in the treatment of cancer of the large bowel, for if we can get such results in cases so far advanced, what can we not do with earlier diagnosis? Then the principal point I would emphasize in answering this question is: first, and above everything, let us study to make earlier diagnosis, and if the family physician suspects the development of cancer and cannot determine positively, it is well for him to call a surgeon in consultation. If they cannot reach a conclusion, let them agree on the one point of an exploratory incision. Those cases which have been allowed to become far advanced cancers, we may treat by some of the methods described, each case being a law unto itself.

Far advanced obstructive cancer, not pathologically extensive, should always be excised. For extensive growths producing obstruction, excision may be used in certain cases with hope of relief, if not cure, but a larger percentage are best treated by some form of entero- or colocolostomy or colostomy.

Extensive growths with marked cachexia and producing no obstruction, should be treated by meeting the medications with curetting, late colostomy, etc. In answer to those who say, "let these far advanced cases die and get out of their misery," I would say that the profession is not ripe for euthanasia yet and I understand our duty to be: (1) Use desperate and radical means to remove cancers in all cases where there is a reasonable hope of cure either temporary or permanent. (2) In irremovable cases, perform such operations as will prolong life or add to the comfort of the patient.

SANITATION OF THE CANAL ZONE.*

By COLONEL WILLIAM C. GORGAS, M.D.,

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A SHORT historical résumé of the work for the prevention of yellow fever and malarial fever, based upon the knowledge that the mosquito is the only means of conveying these diseases from man to man, may be of interest, before passing directly to the work at Panama.

The first real knowledge we had that the mosquito was a conveyor of disease was Manson's discovery that certain species of mosquitos, principally *Culex*, conveyed from man to man *Filaria sanguinis hominis*. Manson made this discovery about 1880. A considerable time after this, about 1896, an English military surgeon, Ronald Ross, discovered that malaria was transmitted from man to man by the *Anopheles*. This discovery was vastly more important, and made a much more universal impression, than Manson's discovery.

Filariasis is almost exclusively a tropical disease and does not cause man a great deal of trouble, unless it produces elephantiasis, and elephantiasis is only an occasional result of filariasis. Elephantiasis

*An address delivered before the New York Academy of Medicine at the anniversary meeting, November 29, 1907.

bears about the same relation to filariasis that phlebitis does to typhoid fever, occurring in about the same ratio. Malaria is a world-wide disease prevailing in the temperate zone as well as in the tropics, and, therefore anything tending toward its prophylaxis was much more important than the discovery concerning the prophylaxis of filariasis.

Some years after Ronald Ross's discovery with regard to malaria our Army Board, consisting of Reed, Lazear, Carroll and Agramonte, made a similar discovery with regard to yellow fever. The discovery with regard to yellow fever was as important to the western hemisphere as was the discovery with regard to malaria to the world. All of these discoveries were more or less assisted and led up to by the work of other men in this same field. Laveran, a French naval surgeon, about fifteen years before Ross's discovery, had proven that a certain plasmodium was the cause of malaria, and the work of Reed's board was assisted a great deal by Finlay's and Carter's work in the field of yellow fever. But Manson, Ross, and Reed stand out preeminently as the men who made the discoveries that have enabled us to do such successful work with regard to the prophylaxis of yellow fever and malaria.

No practical application was made of this knowledge until the year 1901, when the Sanitary Department at Havana, then under the military control of our government, devised and put into execution methods based upon the idea that the *Stegomyia* mosquito was the only means of transmitting yellow fever. These methods at Havana were equally efficacious against malaria, and since that time they have been successfully applied many times against both malaria and yellow fever, and are now universally accepted as the proper prophylactic measures for preventing these two diseases.

When the Spanish-American war broke out the question of protection from yellow fever was of much more importance to the United States than the question of the prophylaxis of malaria. A large part of the United States, every few years during the preceding century, had been ravaged by this disease, and the quarantines which were established between the various localities completely paralyzed business in the affected areas. This caused people living in the affected communities to consider it a very dreadful disease.

A large proportion of the epidemics in the United States had been started by importations from Havana, Cuba, and when Cuba was occupied by the military forces of the United States every energy was bent toward ridding Havana of yellow fever. It was considered at that time that if there was any one disease due to filth and uncleanliness, yellow fever was preeminently that disease; so the military authorities in Havana bent every energy toward cleaning up and putting the city in what was at that time considered first-class sanitary condition. In this they were successful. The streets of no city anywhere could have been kept cleaner than were the streets of Havana during the year 1900, under the supervision of Colonel Black of the United States Army. And other sanitary measures, then believed to be important, were put in force with equal care by the Sanitary Department. Yet the cleaner and in the better sanitary condition we got the city, the worse yellow fever seemed to get, and the very part of the city that we kept in best shape had yellow fever the most extensively.

During the latter part of 1900 Reed's Army Board was sent down by the Medical Department of the army to try to discover some reason for this condition of affairs. You are, no doubt, most of you familiar with the details of the work of this board. It was a very dramatic and, it seems to me, the most mathematical piece of work ever done in medicine, either before or since that time. They took men, put them out in tents in the country, and kept them there under guard for a period of two weeks. As the incubation period of yellow fever was known to be six days, if they remained there free from fever for two weeks it was proof that they had not contracted fever before going there. They would then take mosquitos, which had before bitten yellow fever patients, and have them bite these men, and within from three to six days the men developed yellow fever. There were quite a number of cases of this kind. This proved positively that those men contracted yellow fever from these mosquitos and in no other way.

To make it still more impressive, Reed built a small house, so screened that mosquitos could not get in, and divided this house into two rooms by a wire screen, so that the mosquitos could not pass from one room to the other. He then put a man in each of these two rooms. In one of the rooms he liberated a few infected mosquitos, and the man who lived in the room developed yellow fever after three or four days; the other man, although all conditions were exactly the same, with the exception of the mosquitos, continued to live in good health.

He then built another house close and tight, with no ventilation whatever. In this room he placed the mattresses and sheets and clothing of patients who had died of yellow fever. Two men were kept in this building every night for a considerable length of time, yet none from this exposure contracted yellow fever. It had been universally accepted that yellow fever was ordinarily conveyed by clothing, baggage, and fomites of people who had yellow fever, or from localities where yellow fever prevailed.

In about February, 1901, the Sanitary Department put into operation methods based upon the ideas advanced by Reed's board, and in September, 1901, the last case of yellow fever occurred in Havana. It must be remembered that yellow fever had prevailed steadily and extensively in Havana for the preceding one hundred years without the break of a year or a month. Havana remained entirely free from yellow fever for five years.

The methods devised for the extermination of yellow fever were necessarily directed against the destruction of all mosquitos, and were, therefore, equally successful against malaria. Considering the character of the disease, the disappearance of malaria from Havana was about as complete as that of yellow fever. Within the last eighteen months yellow fever has reappeared in Cuba to a slight extent, but this reappearance is considered as being due rather to laxity in the methods used than to any fault in the principle that the *Stegomyia* mosquito is the only conveyor of the disease. The sanitary work in Cuba was turned over to the Cuban Government in 1902. About the time of the reappearance of yellow fever in Cuba an extensive civil war was brewing, which naturally paralyzed the efforts of the Health Department of the island.

The success of the mosquito work in Havana was so marked and prompt that it attracted universal attention, and since that time there have been many examples in all parts of the world of successful work against both malaria and yellow fever accomplished by the adoption of the methods worked out at Ha-

vana. One of the most striking and important of these examples is that recently accomplished at the Isthmus of Panama, where, as you know, the United States is constructing an interoceanic ship canal. The Isthmus of Panama runs in a general direction east and west, and comes to its narrowest point about the center of the Republic of Panama. The lowest point in the mountain range extending from northern North America to the southern point of South America is located where the canal crosses. The isthmus is probably narrower about thirty miles east of the present location of the canal, but the mountain range is so much higher at this point that it would involve a more expensive route. The route, therefore, for the canal was selected between Limon Bay on the north and Panama Bay on the south. This had been the route of greatest travel for crossing from the Atlantic to the Pacific ever since the discovery of America.

This particular locality had acquired the reputation of being an exceedingly unhealthful locality, and that reputation still clings to it. My attention was recently called to the fact that the general instructions to pilots of the English merchant marine state, under "Climate": "The Panama Canal district is one of the hottest, wettest, and most feverish regions in existence. Intermittent and malignant fevers are prevalent, and there is an epidemic of yellow fever at times. The death rate under normal conditions is large," etc.

I must confess that as far as past evidence goes this reputation is rightly deserved, but I do not believe the Isthmus of Panama is more unhealthy than any other tropical country where the rainfall is heavy. Wherever there is plenty of fresh water with a warm, even temperature mosquitos will readily breed all the year round. Now, if into this locality you introduce the white race and the infection, you will have yellow fever and the malignant forms of malarial fever.

From the location of Panama it happens that these conditions have existed more or less continuously for the past four hundred years. There were always some unacclimated whites crossing the isthmus at this point who contracted this disease, and several times in its history there have been very large numbers brought together here. In no other place in the tropics have these conditions existed so continuously and to such an extent. For this reason the unsavory reputation of Panama has spread over the world.

For three hundred and fifty years the isthmus was used only by Spanish soldiers, officials, and merchants going to the west coast of North and South America. These suffered heavily from diseases, malaria and yellow fever, contracted on the isthmus. In 1849 the isthmus was a favorite means of transit for American miners going to California. They suffered heavily from the same cause. From 1850 to 1855 there was a considerable force at work building the railroad from Aspinwall to Panama. Malaria and yellow fever affecting the constructing force was one of the greatest obstacles met in the building of this railroad. Then the French from 1880 to 1889 had a very large force here constructing the canal. Their losses were about as severe from yellow fever and malaria as anything that has occurred in the history of the tropics, and the health condition was looked upon as being the greatest single factor causing the failure of the French company.

When the United States, in 1904, undertook the construction of the Panama Canal they resolved to profit by the experience of their predecessors on the isthmus for the preceding four hundred years, and also to profit by the knowledge that had been recently acquired with regard to the prevention of malaria and yellow fever. The line of the canal extends from Colon on the north to Panama on the south, in a slightly southeasterly direction, Panama being to the east of Colon. The plan adopted by the United States for getting ships across the isthmus is really the formation of two large lakes. The Chagres is to be dammed near its mouth on the north side, and the Rio Grande near its mouth on the south side. These dams will back the water up to the dividing ridge, the two lakes being about seven miles apart. Through this seven miles of hills we are digging the canal that will connect the two lakes so that ships can pass through one to the other. To get into the lake ships will have to be raised by three locks eighty-five feet; they will then sail south through the lake on the Colon side, through the canal connecting the northern with the southern lake, through the southern lake, and then descend through locks into the Pacific.

The Panama Railroad, finished in 1855, and operated continuously since, runs along about the center of the work from Colon to Panama, Colon being the northern terminus of the road. Between Colon and Panama along the line of the railroad are at present some seventeen towns, with populations ranging from one thousand to three thousand, besides some forty villages for laborers. By treaty the United States controls a strip of territory ten miles wide extending from Colon to Panama. The cities of Colon and Panama are exempt from the jurisdiction of the United States, except with regard to sanitation.

When the United States took charge yellow fever prevailed in Panama and Colon, and in the villages between these points, not to any great extent, but enough to indicate that the infection was there. Malaria was universal. The sanitation of the isthmus really revolved about measures for the repression of yellow fever and malaria. We knew that as the force was increased these diseases would increase and become more prevalent, as they had on all former occasions when the force increased. We therefore resolved to adopt the same measures that had proved effective in Havana, modified as the necessity for applying them varied under the conditions existing at the isthmus. The Sanitary Department had many functions that had very little bearing upon health, but were assigned to us because it was thought necessary to do them, and they came nearer to the duties of our department than to the work of the Engineering Department or to the other organized divisions.

Our attention at first was turned principally toward getting rid of yellow fever, and this work centered mainly about the towns of Colon and Panama. With this in view we adopted the same measures which had been worked out at Panama, but, unfortunately, we were not able to put them into execution until February, 1905, at which time we had been in control of the isthmus some ten months. This was due to the fact that the commission was unable to furnish the necessary supplies, and to the further fact that the legal adviser of the commission thought we could not legally make expenditures in Colon and Panama. In February, 1905, these difficulties were finally surmounted and work was commenced along the indicated lines.

By this time a considerable number of nonimmune whites had come to the isthmus in the employ of the commission, and yellow fever began to affect

the force very generally. In April, 1905, two of the highest officials on the isthmus died of yellow fever, and this caused a widespread panic and a pretty general stampede. Many of the employees precipitately resigned and left. Our people very generally looked upon the mosquito theory as a failure. The natives laughed at us. And the executive board of the commission itself, as late as June, 1905, stated that the sanitary work of the isthmus had been a failure, and recommended that the personnel be changed and other methods tried. But the supreme authorities, who were aware of the handicaps and difficulties by which the Sanitary Department had been beset, gave us steady support, and by the following December yellow fever had disappeared from the isthmus. These were practically the same results as obtained in Havana, and in about the same time.

The malarial problem was quite different from that at Havana. The *Anopheles,* as a rule, is a country mosquito, and breeds only in clear, fresh water containing grass and algæ. It is therefore only in the suburbs of a city that many anopheles breed. The bulk of our force at Panama is scattered for forty miles along the railroad, in a country district, where all the conditions are favorable for malaria.

The plan adopted was to put measures into effect which would prevent the breeding of mosquitos in the neighborhood of the fifty odd villages and camps scattered along the line of the railroad. The anopheles mosquito is not much of a flyer, a hundred yards probably being the limit of its flight. It was therefore believed that if the breeding places could be destroyed within a couple of hundred yards around every village malaria would be controlled. It was not thought necessary to make any effort toward controlling the breeding of mosquitos in the large area of swamp land away from camps and villages. The expense of such measures would be very large, and probably not necessary for the accomplishment of our purpose.

The line of the canal was divided up into a number of divisions, each division placed in charge of a sanitary inspector, and laborers put to work ditching and draining, and oiling where drainage measures could not be carried out. This has been going on for the past three years. We have at present about a thousand men engaged in this work.

The work has been more successful than the most sanguine among us, in the beginning, hoped for. The sick rate during the last fiscal year was twenty-nine per thousand for a force of thirty-two thousand (32,000) men. As this is as low as the sick rate for a similar body of men working in the United States would be, I think we can claim fairly that malaria is under control. The death rate among the five thousand Americans for the same period was 6.4 per thousand from disease. This is about as small a rate as the same number of men would have in New York City.

We still, of course, have malaria on the isthmus, and, therefore, have not been as entirely successful with malaria as we have been with yellow fever. Yellow fever has long been gotten rid of in New York and Philadelphia, but malaria is still not uncommon in the country districts about those cities. The difficulties are inherent in the disease itself. The malarial mosquito breeds much more universally in country districts than does the yellow fever mosquito. A man when he contracts yellow fever will infect a mosquito for only three days, whereas when he contracts malaria he may be able to infect mosquitos for three years.

There has been some criticism to the effect that while our work has been successful, it has been unduly expensive. And there has been some ground for this criticism, when the sums of money expended, only, are taken into account, without considering the work accomplished by this expenditure. Our expenses during the past fiscal year were about $2,000,000, and will be the same in the present fiscal year. It would appear very large if it were announced that the Health Department of New York cost $2,000,000. It would be excessive, and it would be still more excessive on the isthmus, if the Sanitary Department performed only the same functions that the Health Department of New York City does. The Sanitary Department of the isthmus really performs the whole work that the government of the city of New York does, with the exception of the work done by the judiciary and police. The expenditures we make in the field covered by the Health Department of New York City would not cost us more than $30,000 per year out of the $2,000,000.

The Sanitary Department at Panama does the quarantine work at both ends of the isthmus, cares for the sick among the laborers and among the civil population, cares for the insane, the lepers, and the destitute, and in addition pays the expenses of the church.

The commission, in order to encourage the development of church work on the isthmus, appointed some dozen or more chaplains to the different hospitals. These chaplains were encouraged to do work outside of the hospitals, and have gradually built up congregations everywhere along the zone. The Sanitary Department pays the salaries of these chaplains.

Of this $2,000,000 I am sure $500,000 would amply cover the expenditures that bear directly upon the health of the employees; that is, I think that by the expenditure of $500,000 directed solely to sanitary work the present health conditions could be kept up. I do not mean to say I would advise that such a step be taken. The other million and a half of the appropriation is just as necessary, but not for sanitary reasons.

For instance, we spent last year $1,000,000 in the care of our sick. But the care of the sick has little sanitary bearing. It has to be done by somebody in every civilized community, and the Sanitary Department at Panama is the organization best fitted for this work. I wish to emphasize the fact that the words "Sanitary Department" do not at all convey an idea of what our functions really are at Panama.

I think, then, that the Sanitary Department at Panama can justly claim that it has accomplished what it was ordered to endeavor to accomplish. Its members were sent to the isthmus to establish, if possible, such measures as would protect the health of the laborers on the isthmus, so that the canal might be built. Former work on the isthmus had demonstrated the fact that the undertaking could not possibly be finished unless health conditions were ameliorated.

At the end of three years' work the sick rate of laborers on the isthmus is less than that of similar bodies of men at home. The death rate of our American employees is as small as it would be if they were living in New York City. Yellow fever has now practically been absent from the isthmus for two years and malaria is also entirely under control.

A METHOD OF MILK PRODUCTION.

By CHARLES L. [illegible], M.D.,

NEW YORK.

My object in writing this paper is to suggest a practical method by which I am convinced that a large quantity of milk in its natural raw state, obtained from healthy tuberculin tested cows and having a very low bacteria count, can be produced and marketed at a price that will place it within reach of the masses in the city.* The method is not a theory, but is one that has been tested under actual working conditions and that can be put into operation with only slight readjustment of business conditions in the milk industry.

Eight years ago I became possessed with the idea that if I, a physician, went into the business of producing clean milk, other things being equal, my professional training would attract to the enterprise not only the capital necessary, but also the support of the public. But there was a factor even more necessary to commercial success that I had overlooked, and that others who have gone into the same business with an enthusiasm equal to mine have overlooked. It was this—that the milk industry is of a most complex character and one which requires more study and preliminary training to bring commercial success than many of the other great industries. My education of four years on the producers' end of the business was both difficult and costly. By that very fact, however, the lessons in milk sanitation and milk commerce were the more thoroughly taught. These lessons have been emphasized since and form the basis for the suggestions contained here. For this reason, and because they will lead by natural steps to the method of milk production I have to propose, I will briefly outline the series of experiences.

All of the things required by the Certified Milk Commissions on their dairy farms I had in my possession when I began the production of clean milk in the year 1901. I had even more than these, for the plant was a model at that time and attracted wide attention. The care exercised in every detail of the dairy processes resulted in a milk with an extremely low bacteria count, as is attested by the records of the Milk Commission which certified to the excellence of the milk at that time.

But the demand for our milk soon reached a point far beyond the capacity of my new sanitary stable of fifty cows to supply. The operating expenses also made it imperative that the income of the establishment be increased. Unfortunately, I had not the capital necessary for the construction of new stables. In this extremity I decided to experiment with an old barn located on the place at some distance from the dairy house. The walls and ceiling of the structure were covered with strong tar paper and given a coat of whitewash. A platform and drop were constructed of tongued and grooved boards for the cows to stand upon. Twenty cows were then installed in this make-shift stable. The two men who did the milking received sterile milk cans and pails at the dairy house, carried them to the old barn in a wheelbarrow, and returned with the milk in the same way to the dairy house, where it was bottled and cooled.

In my laboratory on the premises samples of all milk produced were analyzed daily for the number of bacteria present. The bottles containing samples were placed under exactly the same conditions as milk sent to market, and analyses made at the end of twelve and twenty-four hours. The bacteria counts represent not the condition of freshly drawn milk, but of milk as it reached the consumer. Appended I present the tables showing the comparative counts of milk from the sanitary stable and from the improvised cow barn, the daily counts being averaged for each month for one year. The routine method of analyses was followed, *i.e.* 1 c.c. of milk was plated in nutrient agar and the

*Statistics of the New York City Milk Supply.—From various sources we learn the milk supply of Greater New York is 1,800,000 quarts daily. The average milk production per cow in New York State is six quarts daily (U. S. Government report). There are about 300,000 cows distributing milk to this city. Each cow is worth about $40, and this represents $12,000,000 invested in dairy cattle. Under present methods the land necessary to support a cow is about four acres, making 1,200,000 acres, worth an average of $40 per acre, the total of $48,000,000 invested in land. The equipment on the farm costs $100 per cow; therefore, about $30,000,000 is invested in this branch of the industry. For the dealers' share in the business there is invested for creameries, bottling establishments, pasteurizing plants, stables, horses, wagons, and the like a sum estimated at $18,000,000. Connected with the business there are at least 50,000 men employed in the country districts and 10,000 at work in town.

The milk sold in the city is of several kinds and may be classified as follows:

Raw milk.....	1,200,000	quarts daily
Pasteurized milk.....	600,000	" "
Certified milk.....	16,800	" "
Inspected milk.....	5,000	" "

Thus it appears that raw and pasteurized milk form 99 per cent. of the supply. Dairy farmers in seven States—New York, New Jersey, Pennsylvania, Connecticut, Massachusetts, Vermont, and Ohio—send in milk. Some milk trains are twenty-four hours on the road. The farmers feel entirely independent, and sell their milk to that dealer who bids the highest price and who offers them the easiest set of sanitary rules. The demand for milk has compelled the large dealers to seek further and further away for their supply and has brought about a competition in the country for the patronage of the farmer, which is just as keen, and in many instances keener, than the competition for the custom of the consumers in the city. For this reason large dealers can exercise only a very limited control over sanitary methods of the dairy farmers, particularly in those regions where competition for the supply is keenest.

When the milk once comes into the hands of the dealer, however, its sanitary surroundings are whatever he chooses to make them. The utmost measures of the dealer are of little avail if the milk placed in his hands by the farmer is already seriously damaged by the advent of dirt and bacteria. It is this fact that has led so many of the large dealers to resort to pasteurization. What they cannot control at the beginning they can at least remedy at the end by the application of a moderate amount of heat.

Certified milk represents the efforts of some physicians to obtain a supply of milk from cows free from disease and produced under sanitary conditions, which will permit it to be marketed in its natural raw state, still having a very low bacterial count. The cattle supplying certified milk are required to pass the tuberculin test. In Brooklyn 2,800 quarts of certified milk are sold daily at 15 cents per quart; in Manhattan and the Bronx 14,000 quarts are sold at prices ranging from 15 to 20 cents per quart.

"Inspected milk" is a second-grade milk designed for hospital use and sold mostly in cans. It is under the supervision of the same Milk Commission which controls certified milk. The bacterial standard and conditions of production are not so severe as for certified milk, and the tuberculin tests of cattle producing it is not required. It sells in cans at 6 and 7 cents per quart. About 5,000 quarts daily are sold in the city. It serves as a good illustration of raw milk of excellent quality which can be sold at moderate prices.

These figures give some idea of the size of the problem confronting those who are interested in the improvement of the milk supply. It at once becomes evident that no private or outside enterprise can do more than serve as an object lesson. Any plans to furnish an improved quality of milk to the city on a large scale and outside of the regular lines of the industry would be foolhardy. The real reform must be wrought from within the industry itself.

colonies counted after growing five days at room temperature.

	Sanitary Barn	Old Barn
1903 September	660	1,950
1903 October	354	331
1903 November	287	425
1903 December	505	457
1904 January	355	1,244
1904 February	1,721	3,910
1904 March	690	4,200
1904 April	3,300	4,600
1904 May	1,950	10,200
1904 June	550	1,900
1904 July	1,260	3,500
1904 August	1,534	4,010
Average for year	1,097	3,102

The extremely small numbers of bacteria in the milk from the old barn were a revelation to me. They indicated plainly the availability of ordinary barns for clean milk production, provided access could be had to a proper sterilizing, cooling and bottling establishment.

Following this suggestion, during the same year, a second old barn still further removed from the dairy was brought into commission. No attempt was made in this instance to change the character of the interior of the building. The ceiling was low, and composed of poles, through which the hay overhead hung down in festoons. The stalls were very crowded and the floors of rough and broken boards. It was just the kind of barn that calls down the severest wrath of dairy experts, and therefore well suited to illustrate the point I desire to emphasize. Appended are the bacteria counts of milk from this building, averaged for a period of four months:

Milk from Second Old Barn.

1904 March	Average bacteria per c.c.	1,920
1904 April	" " " "	6,050
1904 May	" " " "	6,370
1904 June	" " " "	10,530

An analysis of the air in this stable made during milking showed 12,965 colonies of bacteria upon a Petri plate exposed for one minute, while in the same length of time the air of the new sanitary barn showed only 35 colonies. The small number of bacteria in the milk from this old barn were undoubtedly due to the use of covered pails and to the facilities which the dairy house afforded for sterilization of utensils and cooling and bottling of milk.

Early in the autumn of 1904 I directed the attention of Dr. A. H. Stewart, Bacteriologist of the Department of Health in Philadelphia, to the possibility of producing milk with low bacterial counts in common unsanitary cow barns, by the use of sterile covered milk pails and cans. By agreement we arranged to conduct some experiments on dairy farms in my neighborhood, where the sanitary conditions were bad. Following are quotations from Dr. Stewart's paper, "The Contamination of Milk at the Dairy" (*American Medicine*, April, 1906).

EXPERIMENT I—DECEMBER, 1904.

"The experiment was conducted in an ordinary filthy farm stable. The weather was cold, snow was on the ground, and two boys did the milking; there were eight Jersey cows in the herd. No effort was made to cleanse the udders . . . the cattle were fed with dusty hay, as was the custom, during the milking." Four cows were milked in the ordinary wide-mouthed unsterilized milk pails used at the farm. The other four were milked into narrow-mouthed pails carried with us in our buggy. The results of Dr. Stewart's analyses were as follows:

Sterilized Covered Pail

First cow's milk	1,000	bacteria per c.c.	
Second " "	4,900	" " "	
Third " "	500	" " "	
Fourth " "	150	" " "	

Farmer's Own Unsterilized Pail.

First cow's milk	120,000	bacteria per c.c.	
Second " "	140,000	" " "	
Third " "	17,000	" " "	
Fourth " "	138,000	" " "	

EXPERIMENT II, DECEMBER 9, 1904.

"An ordinary dirty barn, with a dark filthy cow stable, was selected for this experiment." Two cows were milked into sterile covered pails and two into the farmer's own, open unsterilized pails. Two cows were milked, first half with covered sterile pails, and the second half into farmer's own pails, to test the effect upon milk of the same cows, of change of pails.

Dr. Stewart's analyses gave the following results:

Sterilized Covered Pail.

First cow's milk	200	bacteria per c.c.	
Second " "	50	" " "	
Fifth " " First half	300	" " "	
Sixth " " " "	120	" " "	

Farmer's Own Open Unsterilized Pail.

Third cow's milk	2,400	bacteria per c.c.	
Fourth " "	34,400	" " "	
Fifth " " Second half	2,000	" " "	
Sixth " " " "	45,690	" " "	

And now in marshaling my array of facts I have arrived at an experience that for my purpose is the most important of all.

The limits of production on my own farm had been reached and still there was demand for more milk. Three and one-half miles from my sterilizing plant lived a well-to-do farmer having a large barn of the better class, containing sixty cows. It occurred to me that though the distance from my dairy house was great, yet milk low in bacteria might be produced on this farm by applying the same principles that had proved efficient in my own old barns. At that time this farmer shipped all of his milk to Philadelphia, and received for it four cents per quart, out of which he had to pay a half-cent per quart for freight. Analyses of his milk showed that it was running several hundred thousand bacteria per cubic centimeter. My offer to him was five cents per quart for his milk, provided he would use my sterile pails and cans, and deliver the milk to my dairy house twice daily. He agreed to the pails and cans but not to the delivery, as the railroad station was close to his farm and he was unused to a long haul. For a period of more than four months thereafter, my wagon went the three and one-half miles to this farm for milk, carrying on each trip a complete sterile outfit for the farmer's use at the next milking.

This herd of cows had been tested for tuberculosis, by the tuberculin test. Daily examinations were made of the milk for bacteria, and the average by the month for the four months of the contract, were as follows:

Milk Delivered From Stable, Three and a Half Miles Distant from Sterilizing and Bottling Station.

1904 September	Average bacteria per c.c.	3,974
1904 October	" " " "	7,892
1904 November	" " " "	2,100
1904 December	" " " "	2,520

The proprietor of the farm often assured me that the additional trouble of milking my way instead of his own was very slight, and that five cents per quart repaid him for this extra care many times over; in fact, at that price he made a profit on his milk, whereas the former price barely paid his expenses.

I was now convinced that this method of milk production could be made to include many farms in my vicinity. My plan was simply to take away from the farmers the whole matter of washing utensils, and to do everything of the sort at my own steam plant, supplying them with sterile milk containers and asking them to bring the milk to me twice daily. A number of farmers in the neighborhood agreed to take part in this scheme. The apparatus and printed bottle caps were completed when disturbance of business conditions prevented us from carrying out the arrangement.

Since the experiences above narrated I tested the same principles again in 1906, with the cooperation of a farmer who was under condemnation by the local board of health in one of the suburban towns. The result was a great improvement in the bacteria counted in his milk, at a very slight expense to him. The experiments of Goler and Roby in Rochester, of Conn at the Storrs Agricultural Experiment Station, of Chapin, Park, Pearson and others, have all gone to show that at a very slight expense in the cow stable, milk with low bacteria count can be produced.

In laying the foundation for the suggestions I have to make regarding milk production, it is necessary to draw attention to another point. During the first two hours after the milk is drawn from the udder of the cow, there is practically no increase in the numbers of bacteria. Some authorities have asserted that this is due to the "germicidal action" of milk; however that may be, the experiments made by a large number of investigators upon milk during the first two hours after it is drawn, without cooling and therefore still containing the animal heat, all go to show that the increase in the numbers of bacteria is very slight, and frequently zero.

It is only necessary to quote the results of a few of these experiments to illustrate this fact. In the annual report of the Storrs Agricultural Experiment Station, 1903-04, is published the result of an investigation of the so-called "germicidal property" of milk, by W. A. Stocking, Jr. Among the results we find these:

Average of 12 milks freshly drawn..	6,832	bacteria per c.c.
" same, after three hours..	6,224	" " "

Again, in another series of tests in the same investigation, we find:

Average of 5 samples of fresh milk..	9,779	bacteria per c.c.
" same after 2 hours.....	9,774	" " "
" " " 4 "	9,813	" " "

In both these series of tests the samples were kept at a constant temperature of 20° C. (68° F.).

Among the many other investigators who have furnished evidence to show the slight increase of bacteria in milk during the first two hours is Dr W. H. Park (*Journal of Hygiene*, July, 1901), in a test of milk kept at a temperature of 90° F., as follows:

Good fresh milk contained.....	5,200	bacteria per c.c.
After two hours.....	8,400	" " "
After four hours.....	12,400	" " "

Freudenreich, Conn, Hunziger, and others have shown that there is only a slight increase, and often a reduction, in the numbers of bacteria in milk during the first few hours after it is drawn, even when kept at comparatively high temperature.

It is these facts that have convinced me that we have in our possession some simple sanitary principles which can be put into operation in connection with the milk supply of New York, and with a very slight readjustment of business conditions.

My proposition, in short, is to elevate the creameries which are now largely used as shipping stations to the position of sterilizing, cooling, and bottling stations, to serve a number, if not all of their farms. Surveying the geography of the milk industry, we find creameries and shipping stations dotted all over the country. They are natural centers of influence in the milk industry. They are naturally adapted to become large sized dairy houses for the cow stables located within an hour's drive. Many of them already contain a steam plant, ice houses, and bottling equipment. Only a slight addition to these would be necessary to enable them to perform the functions of a central dairy house. The plan is in detail as follows:

1. Take the whole matter of washing utensils out of the hands of the individual producer. Concentrate the washing of milk cans, milk pails, etc., in the creamery, where it can be done thoroughly.

2. Insist on the use of some form of covered milking pail. These would preferably be owned by the creamery, and the pails now used by the farmers discarded. Right here I must say that I am indebted to Dr. Roby, of Rochester, for a suggestion that exactly fits into this plan. He recommends a reduction in the number of dairy utensils by substituting small sized milk cans to take the place of both milking pails and the large cans now in use. The farmer can conveniently use a small milk can, both for milking and for carrying his milk to the creamery. A sixteen-quart milk can has a small mouth and is just the correct height from the ground to receive the milk from the cow's udder. Such a can would probably hold the milk from four cows at one milking. When filled, the lid may be firmly fastened in place, and the milk conveyed to the creamery, without the necessity of transferring it to any other form of container.

3. Take all cooling and bottling of milk out of the hands of the farmer. The temperature of the milk delivered by farmers to the creameries, during the warm months, is seldom below 60° F. A cooler of any sort is a dangerous weapon in the hands of the farmer, because of his inability to keep it sterile. The advantages gained by cooling at the farm are lost by the contaminations which occur during the transfer of the milk over cooling apparatus and into several containers. It is a rare thing to find a farmer supplied with ice for cooling, and his common recourse is the brook or spring house, which seldom reduce the temperature of the milk below 60° F. This temperature is not sufficient to prevent the growth of bacteria, which is sure to take place during the twelve hours or more delay to which one of his milkings is subjected before delivery at the creamery. Facilities can be provided for promptly cooling the milk to 40° F., and the creamery is also the natural center for bottling milk. In fact, some of the milk now shipped to New York is being bottled in the creameries.

4. Let the farmer make deliveries of milk to the creamery twice a day, within one hour after milking is completed. Such quick delivery, as has been pointed out, will bring the milk to the creamery in time to forestall any serious growth of bacteria.

5. Let the milk dealer offer financial inducement to the farmer (*a*) for using the small "pailcans," as we may call them; (*b*) for delivering the milk twice daily to the creamery; (*c*) for furnishing milk from tuberculin tested cows. Five cents per quart is sufficient to induce many farmers to produce milk by this method.

6. Let the public offer a financial inducement to the dealer, (*a*) for the slight increase of price he must pay the farmer, and (*b*) for the extra work undertaken by the creamery. Ten cents per quart in the city is, I believe, a price that will prove to be profitable to the dealer for such milk.

In this method of milk production, the sanitary operations are reduced to the very lowest terms. The present method exposes us to all sorts of milk infection. If there are forty farms in a given area delivering milk to the creamery, there are forty kitchens, forty wash tubs, forty sets of strainer cloths, forty sets of milk pails and cans, and forty kinds of water—all these being possible sources of infection. Concentration of all dairy operation at the creamery at once removes all these dangers, and reduces the chances of contamination to those alone which are incidental to the creamery operations. In a well conducted creamery with good water supply and proper sterilizing facilities, the chances for milk infection should be very slight.

I can hear objectors say that conditions in the cow stable should be brought to a higher degree of sanitary perfection. This is certainly true, and is something that we should all strive to accomplish; but let us do first what we can do now; later on we may bring about a more ideal condition. The average farmer is not a sanitarian and he is not a capitalist; we cannot expect him to invest in new buildings or to understand sterilization. Under these circumstances I believe we should relieve him of dairy operations as far as possible, especially of those which he is not well qualified to perform. By the concentration of these in the creamery there would result not only great sanitary improvement, but decided business economy.

The high price of certified milk (fifteen to twenty cents per quart) is chiefly due to the operating expense at the dairy house. The processes of washing, sterilizing, cooling, bottling, refrigerating, and shipping are expensive, and particularly so when done on a small scale. The steam plant, cooling and bottling equipment, etc., on the average certified milk farm, from a strictly commercial standpoint are all out of proportion to the quantity of milk produced on the premises. All of these dairy operations being done on a very large scale, such as would be the case where the creamery was transformed into a dairy house for about forty farmers, would greatly reduce the cost of operation per quart of milk.

A can of milk produced by the method I suggest is not designed to be a substitute for certified milk, or to replace certified milk. The milk produced by this plan could never be so ideal or so perfect as the milk produced upon a certified milk farm or in private dairies.

The point lies just here: the milk produced by common farmers sells in the city for eight or nine cents per quart; and certified milks sell for from fifteen to twenty cents per quart. There is a big gap, both in price and in quality, between the milk as now produced by the ordinary farmer and certified milk. This gap I propose to fill by a method of milk production which is within the powers of the ordinary farmer and milk dealer, and which will send into the market a large quantity of milk of such quality and price, that it will, I believe, prove satisfactory to a large proportion of the public.

I do not flatter myself that any milk dealer will immediately put into practice the suggestions herein made; neither do I imagine that more than a very small percentage of farmers delivering milk to any creamery will consent to the proposition to produce milk in this way; but my experience has taught me that the plan is practicable, and one in which some of the farmers can be interested. I am confident that the method can be started in a small way by any large dealer at his creameries, and gradually extended until a considerable percentage of his milk supply is produced under this system. The sanitary principles and commercial principles involved seem to be the ones along which advance and betterment in milk production can most readily be made.

SUMMARY.

1. The use of sterile covered pails and sterile milk cans by the ordinary farmer will immensely reduce the bacteria in his milk, even though no other sanitary precautions are taken.

2. The dairy house, where washing and sterilizing of utensils and cooling and bottling of milk are done, may be at a distance of several miles from the cow stable without materially increasing the bacterial count, provided the milk is delivered at the dairy house within one hour after milking.

3. Five cents per quart to the farmer will pay him for his trouble of milking in a sanitary way and for making two deliveries a day. In many instances it would compensate him for keeping his herd free from tuberculosis.

4. Increase the functions of the creamery, so that it becomes a washing and sterilizing plant for all the milking pails and milk cans of all the farmers contributing milk to it.

5. Substitute cover milk cans or "pailcans" for the wide-open milking pails now in use.

6. Let the creamery do all the cooling and bottling of milk. Take the cooling out of the hands of the farmer.

7. Let the milk dealer pay the farmer five cents per quart for such milk.

8. Let the public pay the milk dealer ten cents a quart for milk delivered in the city.

9. High prices of certified milk is due to the expense at the dairy house.

10. Concentration of operations at the creamery for a large number of farmers would be business economy, and would likewise eliminate many sources of contamination.

THE IMPORTANCE OF CORRECT DIAGNOSIS IN DISEASES OF THE EYE IS THE CHIEF REASON WHY OPTICIANS SHOULD NOT PRESCRIBE GLASSES.

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In no branch of medicine is a correct diagnosis of more importance than in diseases of the eye. Not only is this statement true as regards errors of refraction, and local diseases directly affecting the eyes, but indirectly as bearing upon many grave general diseases, as Bright's disease, arteriosclerosis, diabetes, etc., which latter diseases are often first manifested by some disorder within the

eyes. In such cases a correct and early diagnosis of the conditions in the eye and a recognition of their significance as an index of some grave disease, together with the institution of prompt and energetic treatment, all are of paramount importance, if we wish to save the sight of the eyes or the life of the patient.

We will, therefore, in the brief space at our command, consider the subject from two standpoints: First, the importance of correct diagnosis in diseases of the eye and errors of refraction as directly affecting the eye itself and indirectly affecting the general health; and, secondly, the importance of correct and early diagnosis of certain diseases of the eye and a recognition of their value as an index to grave bodily diseases, in which diseases both the sight and life are at stake.

In order to impress upon the profession the great importance of correct diagnosis even in errors of refraction, to say nothing of diseases of the eye, we will, as we proceed, cite some unfortunate cases of mistaken diagnosis which have come under our personal observation, which resulted in much suffering, and, in one instance, hastened the death of the patient.

The importance of correct diagnosis in diseases of the eye and errors of refraction as directly affecting the eye itself, and indirectly as affecting the general health.—It goes without saying that an optician who knows but little or nothing of the structure and physiology of the eye or of the body at large, and their intimate correlations, should not be allowed to decide if a patient (a "customer" in his business) should or should not wear glasses, and if he should require them be allowed to guess what glasses ought to be worn. To make an exact and fair comparison, it would be just as wise to allow the druggist to examine a customer and prescribe some remedy which he thought suitable to the case. The optician should stand in the same relation to the oculist that the druggist does to the physician, that is, he should grind and adjust glasses, following the oculist's prescription, just as the druggist should compound prescriptions as ordered by the physician.

Or, again, to give another comparison strictly on mechanical lines, it would be just as sensible to allow an instrument maker to examine a crippled or deformed child and make and adjust a brace to relieve his condition, without the direction of a surgeon, as to allow an optician to examine a patient's eyes for glasses and adjust them without the prescription of an oculist.

The prescribing optician, opticist, optometrist, or whatever he chooses to style himself, claims that the art of prescribing glasses is strictly a mechanical process and needs no knowledge of the science of medicine. This we deny utterly. But granting, for the sake of argument, that the art of examining the eyes properly and prescribing glasses is strictly a mechanical process, the optician is not adequately trained to do even this.

In order to be able to examine the eyes correctly for glasses requires a knowledge of the use of the ophthalmoscope, and this the optician has not. But to go further and grant that the optician could look into the eye with the ophthalmoscope and estimate correctly upon refractive errors, requiring the use of glasses (which he cannot, as a matter of fact), yet he would be totally unqualified and a dangerous person to undertake such work. The failure of vision might not be due to an error of refraction at all, but to some diseased condition of the eye, and the optician, not having any knowledge of medicine, would be unable to detect the diseased condition, or if he was able to detect it, would not know if it had a bearing on the general health. And herein lies the very great danger of allowing opticians to prescribe glasses.

To give a homely but quite plain example, we might just as well have an untrained and color-blind man take the place of the engineer on a passenger train. Such an individual could not, in the first place, see a danger signal; and in the second place, granting that he was not color-blind, nevertheless, not having had the proper training as to the meaning of the signals, he would yet be a dangerous man to have at the throttle, as he would not know what to do. The danger signals of some general diseases (red hemorrhages, by the way) are often manifest in the eyes long before other symptoms show themselves, and obviously how unjust and criminal in a way, is it to allow unqualified individuals to assume the responsibility in such cases, and thus allow patients to go until it is too late to avert or check the general disease.

Incorrect diagnosis of refractive errors.—Perhaps the most common mistake made in ordering glasses, especially by opticians, is in giving patients minus or negative glasses, where, as a matter of fact, positive or plus glasses should be worn. In other words, hyperopia (far-sight) is mistaken for myopia (near-sight) and minus glasses ordered accordingly. It is unnecessary to say that under the circumstances an extra strain is put upon the eye. And in those cases where there is considerable astigmatism, which is overlooked, or improperly corrected, the strain thrown upon the eye, in the effort to see distinctly, is even greater. This feeling of tension, of drawing, of distress in the eyes, is often referred to as "eye-strain." This so-called eye-strain may produce locally and directly irritation and redness of the eyelids, styes, redness of the eyeball, and intense pain in the eyes and forehead; also, at times, it is thought to produce inflammation in the deeper structures of the eye, as the choroid, retina, optic nerve, and even to hastening the formation of cataract in the aged. Eye-strain frequently is the cause of severe headache, and may, according to some authorities, cause many reflex neuroses, and affect the function of organs far removed from the eyes. Indigestion, constipation, epilepsy, curvature of the spine, and even insanity have been credited to its baneful influence. Be that as it may, what we wish to make plain here is, that the examination of the eyes to decide if glasses are needed, and if needed, the correct lens to prescribe, are no light matters, and should never be undertaken by an optician. Only a physician, and one who has been specially trained for such work (an oculist) should attempt to make a diagnosis of refractive errors and prescribe glasses. For, as pointed out above, the optician who is ignorant of the structure of the eye, not only often gives incorrect glasses, thereby causing much distress, to say nothing of much unnecessary expense to the patient by frequent changing of the glasses; but, because of his limited knowledge and inability to use the ophthalmoscope, fails to detect diseases within the eye, which may be the cause of the failing vision that prompts the patient to seek relief. How very, very important a correct diagnosis is in all such cases must be apparent even to the layman. Quite recently I had a patient (Mrs. E. S.) under my care, who had had her glasses changed a dozen times within a year by an optician, un-

necessarily as it turned out, as she had senile cataract forming in each eye. No actual harm was done in this case, save to putting the patient to much useless expense.

But the disease may be much more serious, as glaucoma, and cause complete blindness, if not detected early and treated, and even then the sight is often lost. I have known of cases of glaucoma to be fitted with glasses by an optician and the vision allowed to become almost totally destroyed before the proper advice was sought, when it was too late.

Again, the diseased condition of the eye causing the poor vision may be but a local manifestation of a grave bodily disease, as Bright's disease, diabetes, arteriosclerosis, etc., and only a trained physician is capable of detecting and knowing the significance of such changes within the eye. Not infrequently he detects such changes in the eye in the early stages of the general disease, and makes a diagnosis even before the family physician, and often when the patient never suspects any serious trouble, thinking that he only needs glasses.

And this brings me to a consideration of the second division of my paper:

The importance of correct and early diagnosis of certain diseases of the eye and the recognition of their value as an index to grave bodily disease.—I shall content myself in the discussion of this portion of my paper by reporting two concrete cases, which will speak more impressively than any abstract statement of facts however true they may be.

Case I.—Within the year, May 13, 1907, a young man, L. D., aged nineteen, consulted me on account of almost total loss of vision. The patient gave a history of having consulted an optician, in September, 1906, because of poor vision in the left eye and constant headaches. The optician examined him, told him his trouble was due to "weakness of the focusing muscle," and all that he needed was a pair of glasses, which the optician gave. Although the glasses proved unsatisfactory, the patient persisted in wearing them, as the optician assured him that he would be all right just as soon as his "weak focusing muscle" gained its strength. In the meantime the patient was fed freely with heavy meats, in order to make him gain strength, which was exactly opposite to what he should have had. When he consulted me in May, 1907, I found a marked albuminic neuroretinitis in each eye, there being marked swelling of the optic nerves, numerous retinal hemorrhages, and many white spots of fatty degeneration in the retina. In other words, to the trained observer, who could see and know the meaning of such changes, it was a typical case of retinitis of Bright's disease. What would have been ludicrous in this case, had it not been so tragic, was that the optician examined the patient just before he came under my care, pretended to use the ophthalmoscope, and pronounced the case one of "syphilis of the eye," although the patient had not a symptom of syphilis. Since "weakness of the focusing muscle" would no longer account for the serious condition of this patient the optician thought he would give him something indeed to account for it.

Although this patient was immediately placed on the proper treatment, it was too late, and he died July 8, 1907, just ten months after first consulting the optician.

Case II.—N T., aged forty-three, a prominent man in this city, consulted me first in February 22, 1903, at which time I examined his eyes and prescribed glasses, his vision with the glasses being normal, and the eyes were sound and healthy. December 2, 1907, three and one-half years later, this patient consulted me for a change of glasses, his right eye especially bothering him. He had no headaches and was apparently in perfect health. In testing him the second time for glasses, while making the examination of the fundus of the eye with the ophthalmoscope, I noticed the characteristic white stippling in the retina of each eye which is often present as a forerunner of Bright's disease. This patient's vision was but slightly reduced in the right eye, and was perfect in the left eye, and when I told the patient that I suspected Bright's disease, he simply laughed and ridiculed the idea, and said it couldn't be so, as he never felt better in his life and did not have a pain or ache of any kind. It was with some difficulty that I had him send a specimen of urine to the laboratory. The examination of the urine showed the presence of albumin and casts in the urine and unmistakable signs of interstitial nephritis. With proper diet, treatment and hygienic surroundings, this patient's life should be prolonged for years. How different the prospect had he fallen into the hands of our friend the optician.

In order to prescribe glasses intelligently and correctly, it is necessary not only to make a correct diagnosis of the error of refraction but to be able to detect or exclude the presence of disease within the eye. The optician is not qualified to do either the one or the other. His sins of commission made in prescribing incorrect glasses in errors of refraction, thereby causing much unnecessary suffering and injury to the sight, are surpassed only by his sins of omission in failing to detect diseased conditions within the eyes, thus allowing the patient's sight to be lost and even life itself sacrificed by his ignorance.

Correct diagnosis is the first and most important factor in the treatment of errors of refraction and diseases of the eye, and physicians only should be allowed to examine or test the eyes for glasses.

PHTHISIS IN OUTDOOR AND INDOOR LIFE AND IN ISOLATED AND COSMOPOLITAN RACES.

By NORBURNE B. JENKINS, M.D.,

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While outdoor life may cure consumption in the individual, it may lead to susceptibility to tuberculosis in the race, for North American Indians and members of other outdoor races when exposed to civilization are unable to resist the disease.

On the other hand, while indoor life may cause tuberculosis in the individual, it may tend to immunize the race, for Jews and members of other indoor races have marked resistance to consumption. Possibly in time indoor life will eliminate tuberculosis by destroying the susceptible and selecting the adaptable to indoor environment, and thus humanity may be finally immunized not only against consumption, but also against other infection.

Indoor races, in centuries of environment favorable to tuberculosis, in order to survive have probably acquired especial aggressiveness against or resistance to the disease. This immunity has been acquired, since individuals and finally races, favored through variation and by heredity with resistance would escape or overcome the disease and in turn

leave more strongly immunized offspring as racial survivors. On the other hand, individuals without resistance to the disease would tend to perish without offspring, thus eliminating the susceptible. Chinese have been long indoors and have much tuberculosis, but their unfavorable environment rather than lack of immunity seems to account for this, and any other race, however immune, if placed in such environment, would probably have widespread tuberculosis. China, with plenty of food and favorable indoor environment for her people, might become comparatively free from tuberculosis.

In centuries of indoor contact with tuberculosis, phagocytes, enzymes, and opsonins may have acquired power or become trained to resist and overcome the disease. Again, the body may have selected superior tissue or certain as yet undiscovered bactericides with which to resist or arrest the disease. Such means of defense would be transmitted to the body's offspring, and thus not only the body itself but also its successors would survive even in the unfavorable environment of indoor life.

Outdoor races in their natural environment probably escape tuberculosis without the especial resistance which indoor peoples require in order to survive contact with tuberculosis in indoor life. The agents which destroy, expel, transfer, or absorb the *Bacillus tuberculosis* may be partially or entirely absent, may be latent or rudimentary, may be in inherent or acquired weakness from centuries of nonuse or may be unable to combat unaccustomed infection and, in confusion or weakness, are inactive when tuberculous invasion occurs. Outdoor races, when in unchanged environment and at the same time exposed to the *Bacillus tuberculosis*, may resist the disease more successfully than when exposed to both the disease and the more or less unaccustomed environment of civilization.

Biologically speaking, in tuberculosis of immune races, pulmonary structure and function, as well as the agents which dispose of the *Bacillus tuberculosis* and complicating or parasitic bacteria, may be in unfavorable variation, in arrest of evolution, or in reversion; and while such changes may allow invasion, they may result from disuse, tuberculosis or other disease. In suitable environment variation would probably tend to evolve to the normal type and arrested evolution or even reversion might return to the original type.

Race isolation, common in outdoor peoples, may be the chief cause of racial tuberculosis. Segregated races when exposed to the diseases of other peoples are appreciably susceptible. Billings' statistics, U. S. Census, 1890, show that reservation Indians have proportionately more than one hundred times as much tuberculosis as wealthy Jews, but the latter may have more tuberculosis than these statistics indicate. While the races of men in America differ in immunity the Jew and the Indian represent the extremes and are here considered. Jews have been long accustomed to all manner of contact with diseases of civilization, and have probably developed a natural immunity against tuberculosis and other infection. They have been scattered all over the earth, but, owing to the racial exclusiveness of the women, have not been appreciably amalgamated within, therefore the race has not acquired susceptibility from other peoples. As a consequence, the law of the survival of the fittest has had the greatest opportunity to make them the most immune of peoples. Other races after generations in civilization will probably more slowly acquire equal immunity.

The unhappy mental changes resulting from changed environment undoubtedly play a part in tuberculosis in foreigners and in Indians and other wild or semi-civilized races of men, as it does in animals in captivity. This psychological factor, though neglected, is entitled to prime consideration. In civilization many of the instincts and functions and structures of the body and mind of the Indian are in disuse and become susceptible to disease. On the other hand, the Jew has been so long indoors that these susceptibilities, superfluous in civilization, have been eliminated. Centuries of natural selection have fitted the Jew for the indoor environment of cosmopolitan civilization, while, on the other hand, by the same law the Indian has been fitted for an environment of isolated savagery.

Application of the law of the survival of the fittest to tuberculosis has been the aim in writing the above. Perhaps the law of the survival of the fittest was first explained by William Charles Wells, M.D., who was born in Charleston, South Carolina, in 1757. In a paper setting forth the causes of the differences in color and form between the white and negro races of men, read before the Royal Society in 1813, the theory of natural selection as accepted by science of to-day was given to the world by Wells. While indispensable amplification and application of Wells' theory may be found in the writings of subsequent genius, the thought and language of the giant intellect of Wells has seemingly not been improved upon nor simplified, even after a century.

Draining Circumscribed Abscesses of the Pancreas.—Brewer has found the following method suitable for such cases: The following method was employed: A median incision, about 10 cm. in length, was made through the left rectus muscle, and the abdomen opened. The transverse colon with its mesentery was turned upward, and the body of the pancreas palpated through the transverse mesocolon. As soon as the indurated area was appreciated, the intestines were walled-off by gauze-pads, and an exploring needle plunged through the inferior layer of the mesocolon into the center of the mass. A syringeful of creamy pus was withdrawn, and the needle opening cautiously enlarged by introducing a closed pair of thin-bladed dressing forceps and withdrawing them partly opened. About two ounces of pus were evacuated and the cavity syringed out with peroxide of hydrogen. A long, rubber drainage tube, 15 cm. in diameter, was then introduced into the small opening and tightly packed about with a thin strip of folded gauze tape, to prevent leakage of the pus along the side of the tube. The tube and gauze packing were then secured in place by a single stitch of plain catgut. The distal extremity of the gauze tape and the long drainage tube were then brought out, at the lower angle of the wound, leaving ample space for the transverse colon and small intestines to fall into their accustomed places, and form adhesions around the 25 or 30 cm. of the drainage tube, which passed from the abscess to the lower angle of the cutaneous wound. After cleansing the contaminated area of peritoneum, the external wound was tightly closed around the tube and tape by layer suture, and a sterile dressing applied.—*Surgery, Gynecology, and Obstetrics*

Bleeding Hemorrhoids.—Chloride of calcium is recommended by Boas as a hemostatic in this condition. Every morning after the bowels have moved 20 c.c. of a 10 per cent. solution of this agent is injected into the rectum and retained for a little time. If the tendency to hemorrhage is pronounced a second injection should be made at night. If the drug is not chemically pure it may produce burning, pain, and tenesmus.—*Therapie der Gegenwart.*

MEDICAL RECORD.

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CONSUMPTION AND SANATORIA.

A VERY important report has been issued recently by the medical department of the British Local Government Board on "Sanatoria for Consumptives and Certain Other Aspects of the Tuberculosis Question." Dr. Timbrell Bulstrode, one of the medical inspectors to the board, is responsible for the compilation of the report, which was begun in 1902. The result of his labors is a movement of careful investigation, and one which may cause our comprehension of tuberculosis to differ somewhat from the views now generally held.

Opinions as to consumption have varied considerably during the past forty years. Dr. William Budd was probably the first to recognize, about the year 1867, that the disease was infectious with a long period of incubation. Koch's discovery of the tubercle bacillus, while confirming Budd's views with regard to its infectivity, also opened up an era of much apprehension concerning the degree and source of this infectivity. Fears of extensive infectivity led to the establishment of sanatoria in all parts of the civilized world, in which sufferers were educated with respect to the precautions to be taken against disseminating the malady and were treated by open-air methods. At the same time tuberculosis was represented as a kind of plague, which unless it were checked would be the means of decimating any community in which it might have gained a foothold. Bulstrode now states that in his opinion, based upon his experiences of the past few years, that the menace of tuberculosis has been greatly exaggerated, and that instead of increasing it is steadily decreasing. In England and Wales during 1838 consumption killed 59,025 persons, a death rate equal to 39.9 for each 10,000 individuals living. In 1906, 39,746 died from the affection, a mortality equal to 11.5 for each 10,000 persons living. It has been computed that if the rate of decrease for the past thirty years were to be continued for thirty more, the disease would be extinct at the end of the period.

Another highly important point brought out by Dr. Bulstrode, or rather it should be said gathered by him as a result of his inquiries, is that the liability to direct infection through the air passages has been greatly overestimated, and many pathologists are of the opinion that the infection more often reaches the lungs through the alimentary canal and by the agency of disease germs swallowed in the mik or flesh of bovine animals. The conclusions which are in line with the conclusions come to by several other authorities are that tuberculosis milk and meat, more especially milk, may be the principal sources of danger to mankind. If this be so, a fresh sanitary problem is presented, the solution of which must be effected in order to cope successfully with the disease.

Sanatoria in England and Wales, according to Dr. Bulstrode, have not produced any perceptible effect upon the rate of decline of the consumption death rate. At best sanatorium treatment can form only part of the means whereby the ravages of tuberculosis generally may be stayed. At any rate, this report is yet another refutation, if such were needed, of Koch's dictum that the bovine tubercle bacillus was comparatively harmless to man. The results of almost all recent investigations go to show that milk and meat supplies require far more careful supervision than has been given to them up to the present time.

The MEDICAL RECORD has always taken the view that in the fight against tuberculosis the milk supply as a possible prominent factor in its dissemination should be stringently safeguarded. The milk supply of New York State and of America as a whole is better supervised than that of England, but there is no doubt that in both countries there is abundant room for further far-reaching reforms in this direction. It cannot be denied that sanatoria play an important part in checking the inroads of consumption, particularly in the early stages of the malady; but, on the other hand, a pure milk supply is at least of equal importance.

CARCINOMA OF THE PENIS.

SINCE carcinoma of the penis constitutes only from one to three per cent. of all carcinomata met with in men, statistics regarding it are not abundant, hence any report of a large number of cases giving the treatment and end results obtained is of value. In the December number of the *Annals of Surgery*, J. D. Barney reports one hundred unselected cases which he had examined and followed to the end. He found that this affection occurred most frequently in the fifth, sixth and seventh decades of life, and that man's civil state, occupation, contact with a carcinomatous cervix, and heredity played but little part in the etiology. It is worthy of note that the Hebrew race did not figure in the list of nations, and that out of forty-two cases, in which a note was made of the presence or absence of phimosis, the latter was present in thirty-six. He found the cauliflower type of growth to have been more frequent than the ulcerative with indurated edges, though the former was also usually ulcerated; there being a sanguino-purulent discharge in all. In sixty-nine per cent. of the cases the starting point was in the glands, while the remainder had their origin in the mucous membrane of the prepuce. Outside of a discharge and enlarged inguinal glands, the symptoms were usually late, consisting of disturbances during urination and of pain, although the latter was never particularly severe. The inguinal glands were pathologically enlarged in seventy-five per cent. of the cases, usually only on one side, but in only sixty per cent. were they cancerous; the others showed simply hyperplasia from septic absorption. Internal metastases in the pelvic organs and glands

were at times present without any enlargement of the inguinals; in fifteen per cent. of the cases there were deposits in the abdominal and thoracic organs. Seventy-four of Barney's patients had not been previously operated upon, twenty-six had been. As regards duration, from the first symptom to the final operation one to three years had elapsed, though it was over five years in eleven cases; this is quite natural when we consider that the disease entirely lacks severe initial symptoms and that one is not likely to detect any growth of small size under a congenitally tight prepuce. Of the recurrent cases six per cent. recurred between three and four years, and twelve per cent. five years after operation. The operations were usually only palliative, such as circumcision and excision; amputation alone was performed seven times. No recurrence was observed after amputation with excision of the inguinal glands.

In the twenty-six recurrent cases in which operation (amputation alone, sixteen cases; amputation with dissection of groins, four cases; palliative, six cases) was performed there were eleven definite cures, the average length of life being twenty-four years after operation; five of the men died from various causes, and ten from cancer, on an average of four years after the final operation.

Of the seventy-four primary cases, twenty-seven resulted in cure, *i. e.* life was prolonged for five years or more after operation and was terminated by other causes than cancer. The operations performed upon these twenty-seven cured cases were as follows: Amputation, twenty cases; amputation with dissection of groin, five cases; palliative, two cases. Twenty-two patients died of cancer, the average length of life after operation having been two years; the operations performed upon these were: Amputation, thirteen cases; amputation with dissection of groin, five cases; palliative, four cases. Fifteen of the seventy-four patients died of other causes and ten could not be followed; the operations performed upon those in these two groups were: Amputation, thirteen cases; amputation with dissection of groins, six cases; palliative, six cases.

It is important to recall the fact already mentioned that there was not a single Hebrew among the one hundred patients, and that phimosis existed in eighty-five per cent. of the patients, a most convincing argument in favor of circumcision in an adult whose prepuce cannot be easily and completely retracted. As our only hope of curing cancer lies in its early diagnosis and since carcinoma of the penis causes no marked symptoms until far advanced, the possibility of cancer should always be borne in mind in the case of an elderly man with phimosis and a foul discharge under the prepuce, even without the presence of induration. The prognosis is best when the inguinal glands are not involved, but it must be remembered that they may not be involved while the pelvic glands and organs are, so that a rectal examination should never be omitted. Barney urges early amputation of the penis at the pubes, with thorough cleaning out of the inguinal region, as the operation of choice, but he does not believe that total emasculation offers any greater hope of cure. He warns especially against the practice of leaving a dorsal flap, since in that case the main lymphatic trunks are not removed.

The Surgical Treatment of Pulmonary Embolism.

At the meeting of the Association of German Men of Science and Physicians held in Dresden last September Trendelenburg of Leipzig proposed a procedure that his hearers must have thought bordered on the impossible, namely, the operative treatment of pulmonary embolism. Starting with the fact that patients in whom this fatality occurs frequently do not succumb immediately, but may live for minutes or hours, Trendelenburg by work on animals and cadavers has attempted to devise a technique by which the pulmonary artery may be opened and the thrombus extracted from the main trunk or its larger branches. His first idea was to effect the removal of the clot by means of a special aspirating syringe, and he actually tried this in the case of a human subject, but failed, as the patient, a woman of sixty-two, suffering from carcinoma of the colon who suddenly went into collapse from pulmonary thrombosis, was found to have the complication of an old adherent pericardium, so that the exposure of the base of the heart was rendered very difficult. He now describes (*Zentralblatt für Chirurgie*, January 25, 1908) a somewhat different mode of procedure which he thinks ought to prove practically applicable. The heart is exposed by making a large osteoplastic flap of several ribs and the soft parts which is turned back so as to allow free access to the upper part of the organ. The pericardium is incised over the base of the heart, and a specially formed blunt hook somewhat resembling a metal catheter is passed around and behind the aorta and pulmonary artery. The vessels are pulled forward, the pulmonary artery is compressed with the finger by pressure against the hook, and is opened by a longitudinal incision a little higher up. The thrombus is then sought for by means of a polyp forceps or similar instrument, and if found is extracted. The wound in the vessel is closed with a long narrow clamp applied parallel to its long axis and the blood is again allowed to circulate. The cut edges are caused to protrude several millimeters when the clamp is applied, so that the incision can be sutured at ease while the instrument is in position. This operation has not yet been tried on the living human subject, but in an eight weeks old calf Trendelenburg was able to remove from the left branch of the pulmonary artery an artificial thrombus consisting of a piece of lung taken from another animal and introduced into the circulation through an incision in the jugular vein. The compression of the great vessels, which lasted something over a minute, did not seem to embarrass the heart's action and the animal recovered from the operation.

The Effect of Athletic Contests on the Health.

The point at which athletic contests cease to be beneficial or even commence to damage the organs of the participators is difficult to determine and has led to a great deal of discussion between the advocates of intensive exercise and more sober minded medical advisers. On numerous occasions the competitors in feats of endurance have been subjected to careful medical examination before and after the event, nearly always with the result that

a warning has been uttered against indiscriminate efforts to obtain the fame that is to be gained in this way. Early in last September the city of Kiel opened a new municipal athletic field and among the games with which the inauguration was celebrated were a walking contest of 100 kilometers (62½ miles) and a bicycle race of 187 kilometers (117 miles). Pfeiffer in the *Berliner klinische Wochenschrift*, January 20, 1903, describes the results of a medical examination of the contestants in these two events before and after. There was quite a difference in the condition of the finishers in the two races, for while a number of the walkers passed urine containing albumin and casts, had elevations of temperature that in some cases reached 39° C. (102.2° F.) and exhibited cardiac dilatation and irregularity or inequality in the pulse, the bicyclists showed no such evidences of the strain they had undergone. In both sets there was a moderate drop in blood pressure. These differences are probably due, however, to the fact that the bicyclists were in a better state of training than the walkers and more accustomed to endurance rides than the others were to forced marches. To the disappointment no doubt of faddists of various sorts it is also chronicled that although a considerable number of the contestants were vegetarians of one type or another or were believers in total abstinence, no noteworthy differences between their condition and that of less high minded competitors could be detected. The author's results emphasize the lesson that has already been learned under similar conditions, that while such feats of endurance may not necessarily be followed by directly injurious consequences they involve the risk of producing districts of lessened resistance which at a later time may invite serious organic disease, and that these hazards are especially great in youthful individuals.

Open Windows and Adenoids.

Commenting on the increased prevalence of adenoids, J. Louis Wallace contributes to a recent issue of the *Lancet* some new ideas as to the etiology of this affection. He notes that it is difficult to find evidence of many cases indicating the previous existence of adenoids among people of forty years of age and upwards, whereas it seems to be comparatively rare to find a family of children without at least one of its members having suffered from the disease. He took a census in a number of families whose habits he knew with regard to keeping the windows open in the sleeping rooms of their children. He found that of those who kept the windows shut at night there were five families, having twenty-six children in all, and not one of these twenty-six children had ever suffered from adenoids. While of five families, having nineteen children in all, who kept open windows at night throughout the year, eight of these children had suffered from adenoids sufficiently badly to have required operation. The writer is not disposed to lay too much emphasis on the showing of this particular census, but feels that a more complete knowledge on this possible effect of open windows on the growth of adenoids is worthy of further study. He seems, however, to be an adherent to the ancient opinion that the night air has a peculiar deleterious quality which the atmosphere in the daylight hours does not possess, and that it is of such a poisonous character that the air even of an hermetically closed room, laden with the exhalation from one or more bodies, is preferable.

News of the Week.

Colonel William C. Gorgas, Assistant Surgeon-General, U. S. A., who delivered the anniversary address at the New York Academy of Medicine on "The Sanitation of the Canal Zone" (see page 259), has been elected an honorary fellow of the Academy.

Civil Service Examination for Penitentiary Physician.—The State Civil Service Commission will hold an examination on March 7, 1908, for the position of physician, Onondaga County Penitentiary, salary about $480. Full information with application forms for this examination may be obtained by addressing Charles S. Fowler, Chief Examiner of the Commission, at Albany, N. Y.

Civil Service Examination.—The United States Civil Service Commission announces an examination on March 4, 1908, to secure eligibles from which to make certification to fill a vacancy in the position of acting assistant surgeon, Public Health and Marine-Hospital Service, for duty at St. John's River Quarantine Station, Mayport, Fla., at $125 per month, and vacancies requiring similar qualifications as they may occur. For the specific vacancy mentioned applicants must be expert in the diagnosis and treatment of yellow fever, and persons who are immune to that disease are preferred. Age limit, 20 years or over on the date of the examination. The medical certificate on the application form must be executed by an officer of the Public Health and Marine-Hospital Service, except when this requirement would work a hardship upon an applicant because of his distance from such officer he may have the certificate executed by any physician, in which event, however, he may be required to pass a physical examination before an officer of the Public Health and Marine-Hospital Service before appointment. Applicants must be competent physicians and surgeons and graduates of recognized medical colleges, and must furnish satisfactory evidence of their moral character and ability. This examination is open to all citizens of the United States who comply with the requirements. Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., for application Form 1312.

The Antituberculosis Movement in Chicago.—The annual meeting of the Chicago Tuberculosis Society was held January 28, 1908, when the following physicians were elected directors: Drs. George W. Webster, George F. Shears, William A. Evans, Charles L. Mix, Henry B. Favill, Frank Billings, E. A. Gray, Nathan S. Davis, Theodore B. Sachs, John A. Robison, Edwin W. Ryerson, Arnold C. Klebs, Ludvig Hektoen, and Robert H. Babcock. The Illinois Steel Company, South Chicago, through Dr. James Burry, surgeon-in-chief, has offered to give to the Chicago Tuberculosis Institute one of its buildings, rent free, for the use of its dispensary and local headquarters. The Open-Air Sanatorium for Jewish Consumptives has been incorporated, to establish a sanatorium near Chicago, to consist of an administration building and smaller buildings or tents for patients.

Tuberculosis Exhibit.—The tuberculosis exhibition, which has been held in the Metropolitan Life Building on Twenty-third street, has had more than 100,000 visitors during a little more than a month. Next week it is to be moved to the Cathedral School and early in March it will be transferred to the Natural History Museum.

Moritz Schmidt's Will.—An instance of the thoroughly scientific spirit animating the late Moritz Schmidt, the well-known laryngologist, who died a few weeks ago, is afforded by a provision of his will. As he considered that through his coming into close contact with so many tuberculous patients the condition of his organs might throw light on the question of the direct transmission of this disease he left directions that an autopsy be performed with especial reference to this point. This was done and no signs of tuberculosis were discovered.

Typhoid Epidemics.—An epidemic of typhoid fever is causing considerable alarm in Boswell, a Pennsylvania mining town with a population of 1,000. Over 175 cases have already been discovered. An epidemic of smaller proportions has also been reported from Peekskill, N. Y. In both instances the water supply is thought to be the source of infection.

Diphtheria in the Rahway Reformatory.—Over 200 cases of diphtheria have been reported in the Rahway Reformatory and not even the officers are allowed to leave the institution. It is thought that the epidemic is under control, as no new cases have been discovered for several days.

Diphtheria Death in Christian Science Family.—The nine year old daughter of a Christian Scientist living in Danville, Ill., died last week of diphtheria, and as the health officer refused to issue a burial permit an inquest was held at which the jury declared the parents responsible for the child's death. Four other children, an infant of two years, a daughter of twelve, and two sons of fourteen and sixteen years, respectively, are also dangerously ill with the same disease.

Vital Statistics of New York State.—During 1907 the average birth rate for the State was 20.8 per 1,000. Five cities had a rate of over 25, Dunkirk coming first with 35.9, New York City having 29.3 and New Rochelle 28.3. The total number of births reported was 195,735, divided as follows: Males, 100,495; females, 95,187; sex not stated, 53. The white babies numbered 193,059, negroes 2,625, Indian 26, and Chinese 25. Estimating the population at 8,386,000, the death rate was 17.5. Of the total deaths, 147,442, tuberculosis of the lungs was responsible for 14,406, an increase of 379 over 1906 and 802 over the average for five years, and the greatest number for any one disease, while heart disease came second with 17,072, and pneumonia third with 10,990. Leprosy caused one death. From tuberculosis of other organs than the lungs there were 2,164 deaths. Typhoid fever deaths increased over the previous year by 100, making a total of 1,668. The mortality from measles was decreased from a five years' average of 1,035 and the total in 1906 of 1,369 to 995 in 1907. Scarlet fever, on the other hand, was more fatal, the total in 1907 being 1,029, while in 1906 it was only 690, and the five years' average was 976. There is a gain of about 100 in the deaths from diphtheria over those of last year, 2,600 deaths being due to this cause. The five years' average was 2,784. There were 2,372 deaths from influenza and 483 from erysipelas. Only 225 deaths from cerebrospinal meningitis were reported; the year before the total was 1,178. Cancer deaths also show an increase, last year's totaling 6,400, an increase of 727 over the five years' average. Diseases of the nervous system were responsible for 14,468, and those of the circulatory system for 16,893 deaths. The deaths under 1 year were 27,957; from 1 to 5 years, 12,142; from 5 to 10 years, 3,249; from 10 to 20 years, 5,206; from 20 to 40 years, 24,830; from 40 to 60 years, 29,539; from 60 to 80 years, 34,516; and over 80 years, 9,838. Of males, 76,904 died; of females, 67,476.

Caring for the Insane.—In an address recently delivered before the Chicago Society of Anthropology on the Duty and Function of the State University in the Legislative and Administrative Affairs of the State, Dr. Bayard Holmes said that the State University should provide professors and students for work in the asylums. He said that "there is one person in every five hundred in Illinois crazy and shut up. The proportion of crazy persons is larger than that, but we are not all shut up yet." His leading idea was that the university should be auxiliary to the legislative and administrative laws of the State, especially in reference to its charitable institutions. Every professor is, or should be, a master in his line, and when any bill affecting the State wards is before the legislature, the university professor best informed in the matter should be called in to aid in framing it.

The International Vivisection Union is an organization with offices at 50 East Twenty-ninth street, which has been incorporated for the purpose of investigating animal experimentation.

Smoking in Great Britain.—The British authorities propose to make smoking illegal under the age of sixteen and to prohibit the sale of cigarettes and tobacco to children under that age. Tobacconists who violate the law will be subject to fines and parents who permit children to smoke will be liable to prosecution.

Busts of Dr. William E. Quine and Dr. Robert L. Rea were presented to the College of Physicians and Surgeons in Chicago on February 1. Dr. A. H. Ferguson made the introductory address. The bust of Dr. Rea was presented by Dr. Frank Billings and accepted for the College by Dr. Oscar A. King. Dr. William Allen Pusey presented the bust of Dr. Quine and it was accepted for the college by Dr. Daniel A. K. Steele.

The New York Psychiatrical Society.—The first of a series of public lectures will be delivered by Dr. Pearce Bailey, Saturday, February 15, 1908, at the Academy of Medicine, at 8:30 P. M., on "Alcoholism."

The Sisters of St. Augustine, who for thirteen centuries have served as nurses in the Hôtel-Dieu of Paris, have finally been obliged to leave the hospital in consequence of the recent anti-clerical measures. On their departure from the building they were accompanied by thousands of persons assembled to testify to the gratitude in which they were held and numerous members of the municipal council as well as the director of the Assistance Publique expressed their esteem and regret in person.

The Late Dr. Henry P. Loomis.—The following resolutions were adopted by the Medical Board of Bellevue Hospital at its meeting held on February 1, 1908:

"The Medical Board records with sorrow the death on December 22, 1907, of its late colleague, Dr. Henry Patterson Loomis, who for twenty years was actively connected with the Visiting Staff of Bellevue Hospital. During this long period of service Dr. Loomis was always zealous in promoting the highest interests of the hospital, both ethical and scientific. He several times served as President of the Medical Board and was an efficient member of its various committees. His work as a clinical teacher did much to broaden the influence

of the institution, and, among the many researches which he conducted, his contributions to the study of tuberculosis are especially commendable."

It was moved that this expression of appreciation of the faithful work of Dr. Loomis for the hospital be recorded upon the minutes of the Medical Board, and that copies be sent to his family and to the Trustees of the institution.

Obituary Notes.—Dr. Fayette E. Schley of this city died suddenly of heart disease on February 8 at the age of fifty years. He was born in Canandaigua and was graduated from the Albany Medical College in 1881. He immediately began practice in this city and continued in active work until about two years ago, when he retired.

Dr. William Dana Gross of Philadelphia died on February 8, at the age of forty-seven years, of septicemia, contracted at an obstetrical operation. He was born in Philadelphia and received his medical degree from the University of Pennsylvania.

Dr. Washington West of St. Louis, Mo., died on January 31 of heart disease at the age of sixty-one years. He was born near Belleville, Ill., and was graduated from the medical department of Washington University in 1868. For some years he was assistant surgeon in the U. S. Army and was stationed in the Sioux Indian reservation in Dakota.

Dr. Charles A. Wilson of San Antonio, Tex., died on January 26 at the age of fifty years. He was born in Warren, O., and was graduated from the Cleveland Homeopathic Medical College in 1883. After practising for a time in Ann Arbor he went to Pittsburg, where he remained until failing health compelled his removal to San Antonio in 1892.

Dr. Charles C. Holcombe of Lee, Mass., died on February 2 at the age of seventy-eight years. He was born in Granville, and was graduated from Yale Medical School in 1850. He practised for a time in Granville and in 1853 removed to Lee. He was the first medical examiner of the Middle Berkshire District, holding the post for almost twenty-five years. In 1899 he was made president of the Lee National Bank, and he had served several terms as president of the Berkshire Medical Society.

Obituary.

HENRY NEWTON HEINEMAN, M.D.

BAD NAUHEIM.

Dr. H. Newton Heineman, who died suddenly of heart disease on February 11 in Paris, was well known to the older members of the profession in New York, having lived and practised in this city for many years. He was not quite sixty years of age, and was a graduate of the College of Physicians and Surgeons in the class of 1874. He practised here for about twenty years, being at one time a visiting physician at Mt. Sinai Hospital. Ten years ago he went to Germany, passing the Staats-Examen and gaining the right to practise despite the opposition of some of his future colleagues. He settled in Nauheim and became favorably known to Americans for his success in the special treatment of heart disease by the methods in vogue at that watering place. His winters were passed in Paris. Dr. Heineman was recognized by his professional brethren both here and in Germany as a diagnostician of much acumen and also as a successful therapeutist. In social life his cordiality and sincerity won for him a large circle of warm and enduring friends.

THE SIXTH HARVEY SOCIETY LECTURE.

The sixth of the present series of lectures given under the auspices of the Harvey Society was delivered at the Academy of Medicine on Saturday, February 8, in the presence of a large audience. The speaker was Professor Joseph Jastrow of the University of Wisconsin and the subject "Subconsciousness."

Professor Jastrow began by pointing out that the possession of a real consciousness had formerly been denied the lower animals. In the philosophy of Descartes, animals behaved very much like machines, and even Huxley held views resembling these. At the present time, however, the conceptions regarding consciousness had undergone considerable change, and while the subject presented many difficulties, it was impossible for the psychologist to escape defining and studying the nature of consciousness.

The speaker then discussed the utility of consciousness, and remarked that in a healthy individual the attention went where it was needed. It was not always necessary, however, for the attention to be directed. In fact, normal conditions required that the consciousness slumber, as it were. It was impossible for anyone to continue for any considerable time focusing his attention along a given line. But although we might not really have the sense of awareness, it could be shown that the consciousness did not really slumber. It continued to perform a whole host of actions almost without our knowledge. But there were stages between this acute awareness and the subconscious actions, and we all were familiar with this stage, commonly spoken of as reverie, day dreaming, or in slang parlance, "pipe dreaming." This kind of thinking was the easiest because it lacked all restraint. It was surprising to find the amount of this subconscious material in our daily mental activities. To be sure, it did not always come to the surface, being controlled largely by the higher, directing consciousness. Our true self, Professor Jastrow said, was made up not only of our ordinary conscious selves, but of the sum of all our subconscious selves as well. In fact, the latter was the most free from restraint and was the self which we most often revealed to our intimates.

In the investigation of the subconsciousness the study of various pathological states had proven of enormous value. The speaker illustrated this by a case of hysteria in a young woman. She complained of complete anesthesia of the hand. On asking her to concentrate her attention on a number, and then gently tapping her hand, say seven times, she would be surprised to be told that she had been thinking of the number seven. As a matter of fact, her subconsciousness had received the impression made by the tapping on the supposedly anesthetic hand. Similar results could be obtained by examining subjects during hypnosis. It was interesting to note that in this state the subjects still maintained a partial orientation with their surroundings. The actions performed by a person in the hypnotic state did not make an impression on the real consciousness, and on merging from the hypnosis there was no recollection of those actions.

It was possible to inhibit the higher consciousness by means of drugs, such as ether or nitrous oxide. The loss of this restraint created a feeling of seeing deeper than ever before. The speaker recited the experiences of Holmes, Sir William Ramsay, and others, with experiments on themselves. They all felt as though they were seeing

into the real world for the first time. Now at last they had learned real truth. Holmes had even felt the impulse to save a glimpse of this real truth, and had written it down. On emerging from the effects of the anesthetic, he discovered that his writing consisted of a few very commonplace sentences.

Professor Jastrow then described the conditions in a normal individual, stating that temperament was an important factor in determining the degree to which the subconsciousness manifests itself. Most interesting were the cases of handicapped, altered, divided, or distorted consciousness. A careful study of these cases had shed considerable light on the action of the mind. One of the famous cases of this kind was that of Helène Smith, a shop-girl of Geneva, Switzerland. This young woman had gradually elaborated a marked alter ego. She gave seances, in which she appeared in either of three rôles. The best developed of her dramas was a Martian one. In this she had gradually constructed a Martian language, which, while it was at first entirely unintelligible, had been found to have a syntax closely resembling the French, her mother tongue. Her other rôles were, respectively, a Persian one, and one in which she took the part of Marie Antoinette. While in the trance she still maintained a partial orientation with her surroundings. Once, in the rôle of Marie Antoinette, she had smoked a cigarette, an act which was objected to as being out of keeping with the character. The act had never been repeated.

The speaker then gave a short sketch of the wonderful case of multiple personality reported by Professor Prince, the case of Miss Beecham. This young woman was a college girl, twenty-three years old, and of a highly nervous temperament. Her personality changed frequently, often from hour to hour, three characters being involved. Two of these had no knowledge of the other personalities. The third, however, knew all about the other two, and, curiously, was very antagonistic to them. In her character of Miss Beecham she was fearfully afraid of reptiles, mice, etc. Yet in her third character, Sally, she delighted to prepare all kinds of horrible surprises with such animals for her other self. Once or twice Miss Beecham had penetrated in her mind to the doings of Sally, but this was exceptional. On the other hand, Sally always knew every thought that Miss Beecham had. Careful study of the case in the hypnotic state had shown that "Sally" was the subconscious self of Miss Beecham. By a great deal of very painstaking effort it had been possible gradually to force the "normal" self in the ascendency, and so effect a cure. In connection with these cases, it was to be remembered that the conditions were dream *states* in normal individuals, but dream *selves* in abnormal ones.

Professor Jastrow also referred briefly to the case of Rev. Mr. Hanna, who after an accident had lost a completely developed personality, and had to begin all over developing a new one. In certain dreams which this patient had, incidents and scenes from this former personality frequently made their appearance. These, stored up by his subconsciousness, were not accessible at other times. In the case of Brown, reported by Professor James, the patient became his former self during hypnosis. By this means his lost personality had gradually been restored.

It was evident from all that had been said that the states and conceptions of subconscious functions must be derived from normal outside life. We should conceive that there were two states of mind, one an active, controlling state, the other a dreaming, wandering one. Both were important. It was necessary at times to relax from the discipline of the former, otherwise nervous exhaustion, insomnia, and other forms of breakdown followed. Hysteria was very instructive for the psychologist. In this mental and emotional instability dominated; the directing side of the consciousness was weak. It was possible to strengthen this, however, and this was the function of the psychologist. Medical science would have to give mental therapeutics more recognition than it had in the past. The speaker therefore regarded it as a good omen that the Harvey Society had asked a psychologist to address this audience.

The next lecture of the series will be delivered on Saturday, February 22, by Professor Otto Folin of Harvard University, the subject being "Problems of Chemistry in Hospital Practice."

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

SANATORIA—ACTION FOR LIBEL—CEREBRAL HEMORRHAGE AND ECLAMPSIA—ANOTHER PARASITE OF MAN—ANKYLOSTOMIASIS—DIPLOMAS FOR WOMEN—DR. NEWSHOLME SUCCEEDS M. POWER, C.B.—ITEMS.

LONDON, January 24, 1908.

YESTERDAY a report on sanatoria was issued by the Local Government Board. It is a bulky volume of 670 pages, written by Dr. Thos. Bulstrode in continuation of the report of the Medical Officer on Tuberculosis for 1905-6. It is fully illustrated by charts and diagrams, and deals with various aspects of the tuberculosis question as well as with the points of importance concerning sanatoria. Thus the declining death rate from consumption, the communicability of the disease, its duration before the sanatorium treatment became established, statistics of those treated as to immediate and later results, and as to the early or advanced condition of the patients, the need of after-care, and many other points are considered by Dr. Bulstrode. Though it is not possible, or perhaps desirable, to lay down definite conclusions from the evidence at present available, there is little doubt that the immediate result to individual consumptives is in the main encouraging, and Dr. Bulstrode confirms the general view that the best results are seen in early cases, and that when improvement occurs in advanced cases it is commonly less durable, although remarkable temporary amendment is often observed in such patients. Respecting "after-results," Dr. Bulstrode is cautious—not to say hesitant. The statistics do not give him, save in exceptional instances, data as complete as is requisite, immediate and after-results being too often confused, while the latter are apt to be affected by the method of selection of cases for admission and by the after-care available for patients after discharge.

In reference to the vexed question of notification, Dr. Bulstrode does not consider that the time has arrived for judging of its value in the light of phthisis death rates, but he notes the fall in these rates which has been going on for many years throughout this country has not been obviously accelerated in towns which have adopted some form of notification. The attention drawn to phthisis of late has given rise to an impression among the public that the disease is increasing, whereas it has undergone a phenomenal decline which, if continued for years, might result in its total extinction.

I am sorry to say the *Lancet* has lost the action I mentioned as pending last week and has been cast in heavy damages. Quacks are, of course, in high glee to find that a denunciation of secret proprietary preparations may expose a journal to an action for libel. The *Lancet's* defence was fair comment on a matter of public interest, and further that the indiscriminate distribution of dangerous poisons is indefensible. It was shown and not denied that the medicine contained atropine and cocaine; and the president of the College of Physicians, supported by Sir L. Brunton, Professor Pepper, and other distinguished authorities, testified

that these medicines ought not to be used indiscriminately. But, of course, as I reported, there were practitioners ready to come forward and declare that the quantity of the poisons was too small to be dangerous and that they had recommended the remedy. Plaintiff's counsel argued that to impute fraud was to attack a person's character and had a cheap jibe at the profession which could not cure a disease, but attacked his client for curing it. The judge ruled that if the jury found that the attack was on the man—not on the system—plaintiff was entitled to a verdict, as the defendant had not pleaded justification. In view of this ruling, I could wish a plea of justification had been put in, though of course the defence had to be under the advice of counsel. It would seem possible to convince plain business men, such as jurymen mostly are, that a trade consisting of the sale of a specific for eight shillings an ounce, which would cost the seller two or threepence, was not a just commercial transaction.

Cerebral hemorrhage as the cause of death in puerperal eclampsia has been recognized for a long time. The occurrence was discussed at the Royal Society of Medicine (Obstetric Section) in connection with a paper by Drs. Norman Carver and J. S. Fairbairn, who related a case of an unconscious patient with a history of edema and albuminuria. She was deeply comatose with Cheyne-Stokes respiration. Rapid dilatation of the cervix was done, and a fetus of five to six months extracted. She died a few hours later, and at the post mortem an extensive hemorrhage into the pons varolii was found. The authors considered the case as primarily one of eclampsia, and quoted four analogous cases.

Dr. Herbert Spencer (President) had not met with a case of hemorrhage into the pons, but had seen two into the substance of the brain, one at a post mortem, the other with recovery. He thought apoplexy a well known cause, and the intravenous injection of saline solution risky.

Dr. MacNaughton-Jones considered that weak doses of pilocarpine afforded the best means of controlling the increase of blood pressure in the threatening hemorrhage and further were of use in checking the convulsions. If necessary its full physiological action could be neutralized by atropine (1-100 grain). He had seen eclampsia fatal as early as the fourth month.

Dr. Lionel Smith had seen three cases of cerebral hemorrhage complicating eclampsia, all confirmed at post mortem.

Dr. Amand Routh had not seen a post mortem of such a case. He doubted if saline infusion should be given on account of the increase of arterial pressure. Pilocarpine was fraught with danger in the usual doses. It ought not to be given where apoplectic symptoms or coma were present. He had seen patients suffocated by the enormous quantity of ropy mucous secretion it provoked.

Dr. Rayner had a fatal case in a patient in her eighth month of her third pregnancy. The convulsions were frequent, more marked on the right side, pupils unequal, urine albuminous, the coma deepened with death in a few hours. Extensive hemorrhage into the corpus striatum and optic thalamus was found post mortem.

Dr. Hodgson thought the practical lesson was to empty the uterus in all cases of eclampsia in pregnant women. He had done this in six cases and all recovered—five rapidly. In one slight convulsions persisted for five days, but she was well after a single injection of pilocarpine.

Dr. Fairbairn, in reply, said they had not collected all cases of apoplexy, but only those of hemorrhage into the pons or base of the brain, without unilateral symptoms suggesting apoplexy. Large cerebral hemorrhages were not frequent in eclampsia, as shown by statistics. The cases he and Dr. Carver submitted were undoubtedly rare. Of course the possibility of a deeply comatose and cyanotic eclamptic patient having also a cerebral hemorrhage should not be forgotten, especially in giving a prognosis.

Dr. Leiper has described a new intestinal parasite of man at the Society of Tropical Medicine. This *Physaloptera morcleus* differs from the *P. caucasica* by its greater size in the disposition of the papillæ of the male bursa and the contrast in the size of the spicules; in the female in the position of the vulva and smallness of the egg. An additional pair of teeth and two pairs of papillæ are also seen.

At the same meeting Dr. T. F. Macdonald related his experiences of ankylostomiasis in Australia. In the Johnstone district a jungle of scrub 50 miles square with a rainfall of 200 inches and frost unknown, the conditions were ideal for the incubation of parasites, and there ankylostoma duodenale spread from family to family. Recently the Federal Government has voted a sum for establishing a research institute in Townsville (in this district).

As to the disease, he said in children there was an extraordinary appetite for earth-eating—not a casual impulse, but an irresistible craving. Babies would pick dirt from seams in the floor or from boots left uncleaned; older children preferred to suck stones rather than sweets; adults craved for pickles, curries, and alcohol. He also observed psychopathological symptoms characterized by what he termed a "spectrum of deeper and deeper immoral qualities" growing with the progress of the disease. It was difficult to determine whether there were moral and mental changes parallel to physical abnormal appetites or accidental aberrations. He believed they were as definite symptoms of positive nerve poisoning as anemia was of blood destruction. Schoolmasters had consulted him as to the demoralization among children. He thought two factors were necessary to produce these effects, viz., a weakened physiology of the victim and an exciting nerve toxin. Thymol was the treatment for the individual, but how was the disease to be stamped out in a community? He had treated households with thymol and regarded as "contacts" all under one roof, but new centers continually arose.

Dr. Sandwith said thymol was not safe for the aged or the very young. It was better to give eucalyptus (10 minims of oil and 45 of chloroform) in 10 drams of castor oil.

Dr. Elliott found it better to prepare the patient with podophyllin before the thymol.

Sir Patrick Manson, President, spoke favorably of the eucalyptus, castor oil, and chloroform, and mentioned that he also noticed the development of immorality in children who were victims of the disease.

Dr. Macdonald, in reply, agreed that thymol was dangerous and welcomed the statements as to the value of eucalyptus.

While the College of Surgeons is preparing to take a plebiscite of its members as to the admission of women, the College of Physicians has taken a step in that direction. After discussing the proposal, it was resolved on Friday last to admit them to the examinations. This, however, does not settle the question altogether, as the license is only given in conjunction with the College of Surgeons, which could therefore so far make the resolution of no effect, and this double qualification is a general practitioner's one. On the other hand, the membership is a physician's diploma, and candidates holding a university degree are eligible, so that the College of Physicians is unhampered as to this and its resolution can take effect. As the fee for admission is 30 guineas, not every female university graduate will take it, but a few will no doubt be willing to contribute that much for the pleasure of becoming M.R.C.P., especially as that practically carries the privilege of being eligible for appointment on the medical side of hospitals—and the ladies will certainly next demand such positions. The Fellowship is a matter of election, and women are not likely to lack in the art of securing votes.

Dr. Arthur Newsholme, F.R.C.P., has been appointed Medical Officer to the Local Government Board in succession to Mr. W. H. Power, C.B., F.R.S. You will recognize the name of Dr. Newsholme as of one who has attained a distinguishable position in the public service and as an authority on all sanitary questions. Mr. Power, whose ability has so long been conspicuous, carries into his retirement the hearty good wishes of his professional brethren.

Professor W. J. Simpson, who has had great experience of plague in India and other parts, has been appointed to go to the Gold Coast to deal with the outbreak at Accra, and left on Saturday, accompanied by Dr. J. A. Haran of the East African Medical Service, who has also had experience of plague in the protectorate.

The Hospital Saturday Fund collections for 1907 reached £27,168, and at a meeting of the delegates on Saturday it was resolved that £24,708 be distributed among the 200 participating medical charities.

Mr. H. A. Wills has promised £100,000 towards the endowment of a university for Bristol, provided a charter be obtained within two years.

Microorganisms on Coins.—A recent French investigator states that the average Parisian copper has 11,000 bacteria; gold pieces from 1,600 to 3,500; while silver coins have only from 450 to 2,100.

OUR BERLIN LETTER.

(From Our Special Correspondent)

HYDROCHLORIC ACID TREATMENT OF GOUT—INFANT FEEDING—MALIGNANT GROWTHS—THE MATERIAL POSITION OF PHYSICIANS.

BERLIN, January [illegible], 1908.

In the Berlin Medical Society Falkenstein presented a paper entitled "A Retrospect of Five Years of Treatment with Hydrochloric Acid in Gout." According to the author, gout is an hereditary disease involving the glands of the gastric mucosa which atrophy to some extent, and therefore are unable to supply a sufficient quantity of hydrochloric acid. The patients accordingly must receive comparatively large amounts of the acid for months or years. The acid deprives the tissues of alkali and in this way prevents uric acid from being precipitated as monosodium urate. The speaker said he had treated 390 gouty individuals by this method and in one-third of the cases prompt relief had resulted, in one-third there was improvement, while in the remainder the treatment was without effect. It is unnecessary, according to this theory, to insist on a nuclein-free diet.

At the previous session the problem of infant feeding was discussed by L. Langstein. He first compared the composition of cow's milk with that of human milk, pointing out that, as was well known, the former had a larger albumin content, whereas the latter was richer in sugar. Little attention had heretofore been paid to the fact that cow's milk is about three times as rich in salts as human milk, and Biedert's assumption that the crux of the entire question lies in the differences in the amount of albumin of the two milks was no longer to be regarded as tenable. In infants nourished with cow's milk, flocculent masses were frequently found in the stools and considered as curds. It had been found, however, that these masses were composed of fat derivatives, and the statement that the high albumin content of cow's milk was injurious to the infant was no longer justified. The more recent biological laws were also applicable to infant feeding. The child fed on breast milk received homogeneous albumin, but that of cow's milk was heterogeneous and could give rise to a precipitin reaction; that is, it resembled a poison, and the conclusion had been drawn that cow's milk was toxic. Homogeneous albumin could be absorbed without difficulty from the gastrointestinal canal of the infant, whereas the foreign proteid could be broken down in the intestines only as the result of the activity of the intestinal cells. It had been shown, however, by Heubner's disciples that the homogeneous albumin also first required to be broken down and therefore the toxicity of the heterogeneous albumin could no longer be maintained. There was now no more room for doubt in regard to the toxicity of the fat in cow's milk. White and curdy stools were signs of disorder that were best combated by diminution in the fat and increase in the carbohydrates, and in this connection buttermilk was especially valuable. Finkel had shown that overfeeding with carbohydrates could cause fever in infants and in general it might be said that an excess was injurious. The speaker considered that boiling the milk did not interfere with the nutrition of the infant.

At the same meeting Lewin described experimental contributions to the morphology and biology of malignant growths. While heretofore experimenters had concerned themselves chiefly with mouse tumors, he had succeeded in investigating a primary adenocarcinoma of the breast of the rat. On transplantation this tumor caused the development of cancroids and spindle and round-celled sarcomas. Clinically the tumor manifested all the signs of human carcinoma. When parts of the growth were transferred to the abdominal cavity of a rat new growths of the abdominal organs and ascites resulted, the animals dying of cachexia. Young animals were particularly susceptible to the inoculations. In both carcinoma and sarcoma there was a congenital and acquired immunity. If the tumor began to retrogress in an animal after a preliminary period of growth immunity followed. The same thing was true in the animals inoculated without results. Lewin found that in rats well marked immunity followed the injection of normal serum, as Bashford had already shown in mice. It was possible to render mice resistant to very virulent mouse cancers by previous treatment with rat tumors and to protect the rats against rat carcinoma by inoculation with mouse tumors.

In the Society of Social Medicine and Hygiene Leo read a paper on the material position of mental workers. While this did not possess any direct bearing on practical medicine, a short summary of his statements may be of interest, as he discussed particularly the condition of the medical profession in Germany. For example, taking into consideration the greater demand in time and money required in his education, the income of a physician was not very much higher in proportion than that of the mechanic. The tax lists of Berlin showed the following in regard to the incomes of physicians during the year 1905: 25 per cent. of the physicians had incomes of less than 3,000 marks, 17 per cent. from 3,000 to 5,000 marks, and only 50 per cent. had more than 5,000 marks annually. In Austria the conditions were still worse. The German physicians had begun to take action against this state of affairs by the formation in the year 1901 of the Leipsiger Association of German Physicians for the Preservation of Material Interests, generally spoken of as the Leipsiger Association. The object of this organization was to unite the physicians in an effort to improve their economic position and particularly to assist those physicians who were obliged to make sacrifices in the combat against the lodges. This object was attained through the establishment of a relief fund, a registration bureau, through the collection of statistics in regard to the relation between physicians and lodges, and the appointment of commissions to conduct negotiations with the lodges. The physicians pledged themselves in case of dissension between lodges and the Leipsiger Association not to accept any position with such lodges. The association at present had 124 sections and in the past year provided positions for 3,374 physicians. Of the 32,000 medical men in Germany, about 20,000 were members of the association. Strikes and boycotts were resorted to just as was done by the labor unions. The results were already noteworthy and the association believed that it had through its efforts increased the annual incomes of German physicians by about 8,000,000 marks.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 30, 1908.

An Insidious Type of Nontuberculous Pyelonephritis.—Two case histories are presented by A. L. Chute. The type referred to does not present the usual renal pain, kidney tenderness, temperature. Symptoms are more apt to be solely those of a cystitis. This was true in the two cases presented. In the first case it was supposed that the removal of infected tubes and uterus would relieve the cystitis and valuable time was lost. This type represents a group in which infection with a nontuberculous organism either ascends to the kidney or if it does not ascend begins as a surface infection of the kidney pelvis and leads to a slow erosion of secreting tissue. As the symptoms of cystitis persist, but without the great increase in frequency and pain that is often seen in tuberculous cystitis, the patient gets accustomed to the discomfort, and the process extends insidiously, in that there is the addition of no new or startling symptoms until the renal tissue is destroyed to such a degree that the patient has a deficient power of elimination. The duration of this insidious progression may be several years. The failure of the power of elimination and the appearance of symptoms that mark the true character of the process occurs only when both kidneys are involved to such an extent that they have a combined power of elimination that is less than that of one normal organ. At this time it will be too late to attempt operative measures successfully. We rarely have in these cases the usual renal pain, tenderness and enlargement. Of great significance is the presence of casts in the urine. The employment of the cystoscope is the only reliable means of differential diagnosis. The author finally declares that in cases that are apparently chronic cystitis, but which persist without evident cause, we should consider that the burden of proving that the condition is *not* renal rests on the physician. Early treatment by means of drainage is probably our most efficient means of treatment.

Adenoids and Tonsils.—H. G. Longworthy considers this subject from the standpoint of the general practitioner and with special reference to an examination of the throat in chronic systemic infections and a consideration of the question of status lymphaticus in these cases. The work of investigation in the matter of the tonsils as portals of infection is briefly reviewed. The author does not believe that the question as to whether in a particular patient the throat is a point of entrance for joint infections

can be truthfully answered. It is wise to thoroughly extirpate enlarged tonsils if they are present and thus replace a structure of at least lessened resistance by a sound wall of tissue. Undoubtedly a tonsil which becomes infected on slight provocation constantly menaces the patient with lesions which range all the way from a lacunar tonsillitis to endocarditis and pulmonary tuberculosis. Adenoids undoubtedly are responsible for many of the febrile attacks of childhood. They may become suddenly inflamed, cause earaches from temporary closure of the Eustachian tubes, and are more common than even the laryngologist has supposed.

New York Medical Journal, February 1, 1908.

Noma.—The results of a bacteriological study of seven cases are presented by R. C. Rosenberger, who summarizes some of the recent literature on the subject. He is of the opinion that this affection is due to a symbiosis of a number of bacteria, the principal ones of which are the symbiotic organisms of Vincent. It is well known that the fusiform bacillus of Vincent is found in healthy mouths, and it is also a well known fact that the spirillum of Vincent is also seen in spreads from healthy persons. In the ulceromembranous stomatitis of Vincent both of these bacteria are present and generally in abundance. The reasons advanced by the author to substantiate his view are that the disease is first evidenced by a membranous or ulcerative process; that in this stage the fusiform bacillus and the spirillum of Vincent are present in great numbers; later, as the process goes on to gangrene, other organisms like the diphtheria-like organism, streptococci, or other microorganisms, make their appearance, and from this latter invasion toxemia develops, and the disease goes on to a fatal termination. These facts are borne out by the study of these cases and the bacteriological findings.

Tuberculosis Among Medical Students and Its Prevention.—According to W. J. Wile, the medical student is exposed to tuberculosis in the clinical laboratory, the postmortem room, and the hospital ward. Exposure in the former is probably a nominal one, as the ordinary technical routine taught sufficiently obviates danger from this source. The student should receive special instruction in regard to the matter at the commencement of his course. He should be cautioned against overwork, underexercise and overstimulation. He should have his attention called to the widespread incidence of slight tuberculous infection among the healthy. Finally, proper hygiene, which is after all the best prophylaxis, should be strongly emphasized. Unfortunately in large cities, where clinical opportunities are good, proper hygienic surroundings for the student are not equally good. He should be urged, however, to spend at least one hour each day in the open air, to retire and to rise at regular hours, the morning to be well initiated by the cold tub or sponge. Using his mind constantly, the student should, above all things, have good food, and it is indeed poor economy to frequent, as many of the students do, the cheap boarding houses usually found in the proximity of the hospital or college. House infection is without doubt a factor in some cases. The author lays down certain practical rules in regard to personal habits in the ward and laboratory and believes that their observance will greatly lessen the incidence of the disease among this special class of patients.

Anesthesia by Nitrous Oxide, Nitrous Oxide and Oxygen, Nitrous Oxide and Ether, Chloroform and Oxygen, and Ether Administered per Rectum.—P. L. Breton summarizes his experience on over 300 cases and figures an apparatus for the administration of nitrous oxide and oxygen for prolonged anesthesia. Nitrous oxide was given alone 18 times, nitrous oxide and oxygen 15 times, and ether by rectum 15 times. There was a large proportion of throat cases, 114 in all, the majority being given nitrous oxide and ether for the excision of tonsils and adenoids. In many of the cases the choice of the anesthetic and its administration were of importance on account of such conditions as endocarditis, myocarditis, nephritis, diabetes, empyema, a preceding pneumonia, anemia, etc. In one instance, that of a man of 45 years with an irreducible hernia, death resulted from the anesthetic. The patient had had since youth a rapid pulse, always over 100, and usually running 106 to 110. There was some increased tension. The heart sounds were apparently normal. The urine had showed some time previously albumin and casts, but nephritis at the time was absent. An asthmatic condition had existed for years, causing the patient to sleep at night in a chair until early morning, when it was possible for him to lie down. While asleep he showed Cheyne-Stokes breathing, there being in the interval a cessation of respiration for thirty seconds. Nitrous oxide and ether were chosen, and the patient was fortified by extra feeding, strychnine, and strophanthus the night and the morning before operation. From the beginning of the anesthesia the man did not relax well, but remained rigid and somewhat cyanotic. Eight minutes after the nitrous oxide was started and four minutes after the operation had begun, the heart suddenly stopped and deep cyanosis and dilatation of the pupils appeared. Artificial respiration, cardiac massage, and stimulants were of no avail. Ten gallons of nitrous oxide and three drachms of ether had been used. The indications for the respective choice of the various sequences mentioned in the title are carefully given.

Carcinomatosis of the Meninges.—D. J. McCarthy and M. K. Meyers give the details of a case, adding considerations on the diagnosis of multiple carcinomatosis, tuberculosis of the nervous system, disseminated syphilis, and multiple sclerosis. A careful search through medical literature has revealed only 11 cases. These are commented on by the authors, who then present their own case, the patient being a colored woman of 38 years, who died after being under observation some six weeks and whose symptoms had begun some three months before she came under observation with pain in the right elbow and hand and temporal and occipital headaches. Two days later the pain extended to the left hand. Several days later she complained of pain in the lumbar region and in both lower extremities. There was persistent cough with pain in the chest and back. Motion and sensation were normal. The right pupil reacted sluggishly to light. The right knee jerk was absent; the left knee jerk was present, but diminished. The Achilles jerk was present on both sides and decreased. There was no ankle clonus and no Babinski reflex. There was flexion of all the toes to plantar irritation. The superficial abdominal reflexes were normal. The biceps and triceps jerk of both upper extremities were exaggerated. Examination of the chest revealed impaired resonance over the left chest posteriorly, below the angle of the scapula. Over this area there was bronchovesicular breathing and moist râles, more marked on expiration. Vocal and tactile fremitus were increased over the same area. The patient gradually developed palsies of the ocular muscles, and died. Autopsy revealed chronic pleurisy, hemorrhagic infarct of the lung, carcinoma (primary) of the lung, chronic diffuse nephritis, secondary carcimona of the liver, and primary carcimona of the pancreas. A cavity was found in the left lung—upper lobe. Gross examination of the brain revealed its entire surface covered with minute white areas varying in size from a pin point to a pin head. These areas were most frequent along the course of the blood-vessels, and occurred in scattered points over the entire meninges. They were most marked and occurred in the greatest numbers over the base of the brain, and especially in the interpeduncular spaces. The same condition was present over the spinal meninges, and most marked over the cervical enlargement. There was a tumor mass the size of a split pea on the tenth dorsal root. The second and third spinal ganglia were increased to the size of a small bean (5x7 mm.), were of hard consistence, and protruded as tumor masses on the inner side of the dura. The same miliary tumor formation was present on the inner surface of the dura as far down as the middorsal area. The gross appearance of the brain when removed at autopsy, studded closely as it was with small tubercles, gave the impression at the first glace of a syphilitic meningitis. The more careful examination and the finding of the tumor masses in the other viscera led to a correct diagnosis. The microscopical examination presented a typical picture of carcinoma. The involvement of the cortex was unquestionably an extension from the meninges, and was more a displacement of the cortex, and could, in no sense, be considered a true infiltration. The spinal ganglia involvement in this case is a rare lesion and the authors have been unable to find a recorded case in which this condition has been definitely stated. The involvement of the cranial nerves is explained by the presence of miliary carcinomata in the piaarachnoid, surrounding their points of exit. There were no tumor masses on the nerves themselves.

Journal of the American Medical Association, February 1, 1908.

Cleft Palate.—G. V. I. Brown cites the advantages of the operative relief of cleft palate; the relief from a distressing deformity, the more healthful conditions of the nose and pharynx thus made possible, the possibility of gradual permanent speech improvement throughout life and of some degree of immediate change for the better from the operation. No person with cleft palate need be utterly discouraged; however bad his condition, in nearly every case and at almost any age, operation is advisable. In one of Brown's most satisfactory cases the patient was fifty years old at the time of operation. No unnecessarily

forcible methods should be employed in early infancy, and bad results of early operation, which are frequent causes of slow speech, may be much benefited by corrective operations. The correction of deformities of the dental arch is also a matter of importance. He attributes considerable importance to heredity, not necessarily of obvious palate defect but often of some peculiarity of speech which seems to have been transmitted to the offspring in an exaggerated form and with manifest anatomical deformity. The avoidance of specially technical and complicated methods of speech training is also a point emphasized by him. He has seen better results from the simpler methods. The use of the voice in singing is mentioned as one of the easiest and most natural ways to overcome unfortunate speech habits.

The Antimicrobic Action of Bromine.—G. C. Kinnaman reports the results of experiments made in order to test the antimicrobic efficiency of bromine. The following organisms were employed: *Bacillus prodigiosus, B. anthracis* and spores, *B. tuberculosis, Staphylococcus pyogenes aureus, Streptococcus pyogenes, Blastomyces dermatidis, Actinomyces bovis.* The methods are given in detail. In order to approach as nearly as possible conditions in the tissues, solid media were employed exclusively and a large number of tubes were used. The results with each separate organism are given in tabulated form and analyzed and discussed. The final deductions are given substantially as follows: 1. In a solution of bromine we have a germicidal agent with a peculiar selective action for certain groups of microorganisms and that acts more or less indifferently toward another group. On cocci and fungi a 1 to 300 solution exerts a marked germicidal action, but on bacilli, especially spore-forming ones, its action is disappointing, a 1 per cent. solution having to act for a considerable period of time before causing death. 2. It differs from an ideal antiseptic in that (*a*) it is hard to prepare, being very irritating to the eyes and mucous membranes; (*b*) it is very unstable, having to be kept in a glass container, and even then it gradually loses its power and fresh solutions are required; (*c*) it is not markedly penetrating; (*d*) it has to act for a considerable time to be effective on all microorganisms; (*e*) it coagulates albumin. 3. It approaches an ideal antiseptic in that (*a*) it is nontoxic and nonirritating in effective strength; (*b*) it does not produce an appreciable stain. 4. Lastly, it is needful to state that in order to be effective on all classes of microorganisms a 1 per cent. solution must be used for the period of one hour.

Landry's Paralysis.—An interesting case of Landry's paralysis is reported by J. K. Mitchell, who considers that the disease is probably due to some toxin produced by organisms, as yet unidentified, in the blood and tissues, and possessing a selective action on the spinal cord. Other analogous conditions, multiple neuritis, migratory neuritis, and family periodic palsy, may be similarly explained. The resemblances of these to the condition in question are remarked and the history of the case is given in full. The case was a typical one: the paralysis of the patients involved all four extremities, was entirely motor, all the reflexes were absent, and there was a distinct reaction of degeneration in the anterior tibial and calf muscles of the right leg and a less marked one in the left anterior tibial muscles. It later appeared in all the leg and arm muscles except those of the left thigh. The breathing apparatus was very slightly involved, if at all. He improved under treatment with galvanism, hot and cold applications to the spine, and small doses of ergot, and was discharged, walking well, early in July, 1905, after a stay of eighty-two days in the hospital. His improvement continued through the summer, but he was reported as having a slight relapse, possibly hysterical, in October. This lasted less than a week, and he has been perfectly well ever since. The only antecendents mentioned that could be considered causative were exposure to cold and wet.

Nervousness.—J. Punton considers a large class of psychopathic neuroses on the borderland of insanity, the subjects of which, he thinks, are often a puzzling problem to the physician and the sociologist. They cannot be managed or classed with the ordinary insane, and are not properly taken account of in our social organization. From a study of 1,200 cases observed by him during the past six years, he includes this class of patients under five heads: 1. The adolescent, made up of young persons of both sexes, suffering primarily from the various neurotic complications of the developmental period, and including the incipient cases of dementia precox. 2. The emotional or phrenasthenic class, presenting every degree of emotional weakness, lack of will power, etc. The chief pathologic conditions represented are the so-called hysterias or phrenasthenias, the hypochondrias, and the morbid jealous and erotic states. 3. The exhausted or psychasthenic class, including the neurasthenics, incipient melancholiacs, paranoiacs and confusional cases following toxic infections, and the various sexual perversions. The chief clinical characteristics, however, are seen in all the degrees of exhaustion of the nervous system, the morbid self introspection, selfishness, suspicion, etc., and all degrees of morbid fear. 4. The prodigal or dissipating class, which includes the inebriates, the drug fiends, etc. 5. The impulsive or vicious class: the kleptomaniacs, pyromaniacs, etc., who come perhaps nearer to actual insanity than do the members of the other classes named. Still another might be added: the senile or decadent class. Members of all these classes fall within the borderlands of insanity and require special treatment adapted to their cases. Drugs and surgery fail here or serve only as adjuvants to moral treatment, healthful suggestion, together with judiciously used hygienic measures, massage, etc., and for these to have their best effect there should also be a change of environment, isolation, mild discipline or restraint, together with the removal of the causes of the condition whenever possible. Punton pleads for legal provisions for securing the needed restraint and isolation of these patients without their having to be committed as insane. This necessity, which now exists in most parts of the country, is not only a hardship to individuals but also to their families, and is a serious embarrassment to their proper treatment. Many of these patients absolutely refuse treatment or the measures needed for their welfare and there is no way to compel them. As a result they finally too often pass into a hopeless condition and recruit the ranks of the incurable insane.

Iodoformic Acid in Phthisis.—H. Stern describes his method of using iodoformic acid in chronic ulcerative phthisis. He employs two solutions: a 1 per cent. solution for hypodermic use (from 10 to 30 drops, beginning with smaller dose and gradually increasing to the higher dose, or even to 40 drops in some cases) and a weaker solution made from this (1 part in 150) for internal use. Of the latter, one tablespoonful representing 1 c.c. of the stronger solution is an average dose. Some stomachs will not bear this and it should then be given still further diluted. In other cases sometimes larger doses can be tolerated; the behavior of the stomach can be taken as a guide. The solution may be given from two to five times daily, after breakfast, but before the other meals. It should never be combined with other drugs, but should be taken at least an hour apart from any other medicine. The intramuscular injections are, however, the most rational method and the only one by which we can directly influence the phthisical process in the lungs, and he usually injects into the thickest portion of the interscapular muscles. Full directions are given as to details, antiseptic precautions, etc. Stern's theory is that the formic acid is the more effective or more important component, and that the action of the iodine is that of a catalyzer, and in many ways analogous to that of a ferment. The specific effects of iodine are never observed from the ingestion or the injections. The primary therapeutic effect seems to be a local one, relieving pain, lessening cough and expectoration and improving the character of the latter, and checking ulceration and caseation. Constitutionally it appears to affect assimilation in a rather direct way and the patient begins to gain in weight before any appreciable local changes have been produced. The accessory treatment with drugs, diet, fresh air, etc., is described, the yolk cure in particular.

The Lancet, January 25, 1908.

Fenestration of the Anterior Faucial Pillars.—P. Watson Williams describes and figures the throat of a boy of 18 years without any symptoms whatever. He considers the case one of congenital defect on account of (1) absence of any cicatrices or unevenness in the margins of the fenestra; (2) bilateral symmetry of the malformation; (3) arrangement of the strands of mucous membrane and the muscular fibers and that they obviously corresponded to the anterior faucial pillars, and (4) the fact that although the posterior faucial pillars did not show fenestration, yet the palatopharyngeus muscles were collected into a separate bundle of fibers on each side, with only a thin layer of mucous membrane in continuity with the lateral walls of the pharynx.

The Effect of Exercise on the Opsonic Index of Patients Suffering from Pulmonary Tuberculosis.—From careful observations made by A. C. Inman, it would appear that the opsonic index has shown that the exercise has supplied the stimulus needed to induce artificial autoinoculation, and that its systematic graduation has regulated this in point of time and amount. This cooperation with the natural efforts of the blood has enabled Dr. Latersen to

send his patients back to their accustomed work, however hard it may be. But the investigation has done more than explain a successful mode of treatment. Dr. Paterson states that with the aid of the opsonic index he can regulate the stimulus with scientific accuracy and obtain his results more certainly and more rapidly. This, of course, involves work in the laboratory. But it also means a more rapid and more certain discharge of the patient, which is the main object of the sanatorium, and as a consequence of this the power to meet a larger number of patients. An elaborate system of charts is included in the paper, presenting results in a graphic form. Exercise must be most carefully graduated and the temperature chart be most carefully watched, work being at once stopped when fever appears.

Graduated Labor in Pulmonary Tuberculosis.—M. S. Paterson details the methods pursued at the Brompton Hospital Sanitarium. The points so far determined appear to be as follows: (1) Suitably selected patients can be gradually trained to do the hardest navvy work for six hours a day, the result being that their general condition is much improved whilst some lose both their sputum and their tubercle bacilli. (2) Certain patients who do not improve on light work show marked improvement on harder work. 3. Patients who have slightly overexerted themselves and are kept at rest for the few following days are subsequently not only not worse, but may be in their own opinion better. Observations so far lead to the conclusion that graduated labor is a definite medical treatment for cases of pulmonary tuberculosis and raises the general health and resisting power of the patients. Finally, the author strongly expresses the opinion that the combination of rest, pure air, and overfeeding is not the only treatment for chronic pulmonary tuberculosis, and equally strongly advises those physicians who may adopt these suggestions contained in this paper to pay particular heed to the word *graduated* and to remember the importance of the temperature of 99° F.

British Medical Journal, January 18 *and* 25, 1908.

Some Physiological Aspects of Gastroenterostomy.—H. C. Cameron presents the following conclusions: 1. On a purely milk diet, in non-malignant cases, after gastrojejunostomy there is a slight but definite diminution in the power of digesting and absorbing fat. 2. On a mixed diet, rich in fat, for the most part in the form of butter, this diminution in power disappears. 3. On a milk diet and on a mixed diet, rich in fat, the results are the same, whether there is obstruction at the pylorus or not. It is therefore improbable that the diminution in power of digesting milk depends upon whether the duodenum is or is not short-circuited out of the alimentary canal. The cause must be common to both obstructed and non-obstructed cases, and is probably to be found in the regurgitation of alkaline bile and pancreatic juice into the stomach and in the consequent reduction of gastric acidity, together with the inhibition of the rennin. 4. That in cases of recurrent intractable duodenal or gastric ulceration, an operation is indicated which will ensure the complete loss of the acid reaction of the stomach, while the benefit at present conferred in ulceration by gastroenterostomy is due to the partial loss of that reaction. That such an operation would consist in closing the proximal end of the bowel and implanting the distal directly into the stomach. That where gastroenterostomy is performed the opening should be near the cardiac end of the stomach, and that the anastomosis should be simple, not Y-shaped, nor with enteroenterostomy. 5. That the complete digestion of fats on a mixed diet is due to the specific stimulating effect on the pancreas of a hormone produced by the fats themselves. 6. A case of malignant pyloric obstruction, after partial gastrectomy and posterior gastrojejunostomy, showed complete power of dealing with fats.

The Conveyance of Whooping-cough from Man to Animals by Direct Experiment.—H. A. Macewen reports the following experiment: A full-grown and in every way healthy cat was placed in confinement in a building far removed from the wards in which whooping-cough patients were isolated. Sputum and vomited material were then collected from selected cases of typical whooping-cough without bronchopneumonia or other complications. These substances were mixed with milk and administered to the cat, which took to the new diet with a fair degree of relish. For seven days this emulsion of sputum, vomited material, and milk formed the animal's sole source of nutriment. At the end of that time it was put upon ordinary milk once more. After about fourteen to seventeen days, it was noted that the cat was getting into a languid condition; it lay at the back of its cage, and took little note of what went on around it. It had little appetite; when milk was placed before it, it would lap a little without any of the zest which characterized its attitude towards food at the commencement of its confinement. About a month after the beginning of the experiment it was noted that the animal had a choky cough, which was always followed by vomiting. Some time later it developed a spasmodic cough, accompanied by a well-marked whoop, which even persons unacquainted with the nature of the experiment at once pronounced to be whooping-cough. When these spasms came on, the animal, rising and clinging to the bottom of the cage with its claws, coughed and whooped in a manner which left no doubt as to the nature of its complaint. The conclusions to be drawn from the above experiment would seem to be: (1) That whooping-cough is beyond doubt an infectious disease. (2) That the specific virus is contained in the sputum or vomited material or both. (3) That infection may take place either during the process of swallowing or by ingestion of the infective agent. (4) That cats are susceptible to whooping-cough and may therefore occasionally be the means of disseminating the disease.

Hypersensitiveness to Antidiphtheritic Serum.—R. T. Thorne has had occasion to inject himself on several occasions with the serum and finds that he is peculiarly sensitive to its effects. These generally assume the form of urticarial rashes and general malaise. On the last occasion, seven days later his suboccipital glands were large and tender and his malaise was so great that he felt compelled to stop work. A few hours after retiring, he awoke feeling sick and vomited until quite exhausted. The rash was by this time quite general and in some places on the abdomen raised fully half an inch. At 3 P.M. the next day he was again seized with vomiting, which lasted quite half an hour. By this time his tongue had swollen, due to the urticaria, and he found some difficulty in breathing. At 4 P.M. the joints below the hip and shoulder were attacked, and became so swollen that he could not bend his fingers. By 8 A.M. the rash had almost gone, and he felt better, but on getting out of bed found that he could not stand, and fainted. By the evening he felt well, but very shaken and weak. Temperature was normal during the week preceding the attack. Nothing had been eaten which could have upset him, and he believes that the vomiting was due to urticaria of the stomach. He also experienced some thoracic and abdominal pain during the height of the attack. Injections of the same serum practised by him on several patients gave no such unpleasant results. The cure is of further interest in that it presented progressive increase of reaction to serum with more than two injections at long intervals.

Formaldehyde in Alopecia Areata.—J. J. McInerny records the case of a young girl with a circular patch 3 inches in diameter on the scalp at the side of the occiput, hairless, smooth, and shining. The treatment consisted in painting it with a 20 per cent. solution of formaldehyde. This was done every day for the first week or two, until signs of inflammatory reaction appeared. The treatment was then suspended, and a sedative ointment applied. When the inflammation subsided the formaldehyde was again continued, stopping the application as soon as inflammatory trouble appeared. This routine of treatment was persevered in for about six or nine months. About this time a growth of hair made its appearance, continued to grow, and in every way corresponded with the surrounding hair. One year after cessation of treatment the growth of hair was continuing in a perfectly normal way.

Status Lymphaticus in Relation to General Anesthesia.—W. J. McCardie gives a general summary of our knowledge on this subject dating back to Plater's original observation in 1614 that the thymus was enlarged in certain cases of sudden death. According to Kundrat, these cases are characterized by the presence of a thymus of greater or less size, by an enlarged spleen with varying degrees of prominence of its follicles, by tumescence and hypertrophy of lymphatic glands in various regions (especially of the mesenteric, retroperitoneal, and cervical), by noticeable prominence and multiplication of follicles at the base of the tongue and in the pharynx, by enlargement of the tonsils and swelling of solitary follicles and Peyer's patches in the intestine, by a dilated heart (especially is the right ventricle dilated), and extremely flaccid cardiac muscle. In addition, there is sometimes found a small heart, contraction of the aorta, and dark fluid blood in the heart cavities. To Kundrat's pathological complex may be added less constant features—namely, great pallor of the skin, enlargement of the tongue, enlargement of the thyroid gland, infantilism, edema of the lungs and brain, fatty changes in the liver, and alterations in the bone marrow. As Kundrat remarks, similar more or less definitely characterized cases making the hypothesis of a lymphatic constitution probable are found scattered through the statistics of chloroform deaths. The author has examined the rec-

ords in thirty cases of status lymphaticus deaths and finds that chloroform was used in 17, ether in 6, and C. E. in 5. Two were doubtful cases and the anesthetic was nitrous oxide. Two S. L. deaths have been recorded under local anesthesia. It is most important to diagnosticate the lymphatic status before operation. We may gain some information by examining the upper air tract, for it has been noted that in some of the S. L. cases the lymphatic follicles in the pharynx, sinus pyriformis, and on the anterior surface of the epiglottis, as well as on the pharyngeal walls, have been much enlarged. In one case the follicles in the vault of the pharynx formed lobular soft rolls sprinkled with white dots formed by the numerous follicles. In many cases, probably, these enlarged follicles have been overlooked. In most cases also the tongue follicles have been enlarged. The author regards enlargement of the tongue, which he believes has not hitherto been mentioned in the literature on the subject, as an important aid to diagnosis. Enlargement of the organ was noted by him post mortem in 2 of the 5 fatal cases he has recorded. Another important matter concerns the relation of enlarged tonsils and adenoids to this diathesis. These lesions have been noticed in practically every fatal case. The author states that he does not look on enlarged tonsils and adenoid growths as merely local manifestations, but as indicating a marked tendency to general lymphatic enlargement; and, more than this, he believes that if patients in whom these lesions were present could be examined post mortem there would be a very large proportion of them in whom much more evidence of lymphatism would be found. Adenoids and tonsils do not stand by themselves, but are associated with a lymphatic condition elsewhere. Hochsinger examined three children with adenoids radiographically and found in all of them an enlarged thymus.

A Fatal Case of Status Lymphaticus.—The patient of H. Hilliard was a very nervous man of 21 years, slim, with a weak heart, and a great cigarette smoker. Operation for circumcision was done at noon, the patient having breakfasted at 8 A.M. and smoked cigarettes all the morning. Nitrous oxide and ether were used and the operation begun while the patient was lightly under the anesthetic. Just as the prepuce was severed the patient turned ashy and stopped breathing. Under artificial respiration, nitrite of amyl inhalations, and rhythmic tongue traction, he was quickly restored. Operation proceeded, but a second attack came on, in which the patient died. Autopsy revealed the thyroid gland was enlarged, and with degenerative changes. The thymus gland was persistent, and weighed 24 grams; it extended downwards towards the pericardium. The heart was dilated, with thin, flabby walls, showing on microscopic examination considerable fatty degeneration of the muscle fibers. The spleen was greatly enlarged, and there was a supernumerary spleen; both showed on section very great overgrowth of the follicles and connective tissue. In the intestines the Peyer's patches and solitary follicles were excessively developed. The mesenteric glands were all enlarged.

Berliner klinische Wochenschrift, January 6, 13, and 20, 1908.

An Unusual Case of Stone Cough.—Bickel and Grunmach report this remarkable case in which the patient, a woman of thirty-five years, coughed up at intervals concretions of considerable size, which apparently were formed in the large bronchi. Seven years before she had suffered with pleurisy and erysipelas. Since this time the cough had persisted, with occasional periods of remission. In 1902 and 1906 she had several hemoptyses. The paroxysms of cough occur suddenly, are very severe, and, with or without other sputum, sandy particles or concretions of varying size are brought up singly or several at a time. Such attacks occur two to three times a year. The first one was six years ago. Examination of the chest showed evidences of a tuberculous process, although the sputum contained no tubercle bacilli. Examination with the Roentgen rays showed the presence of numerous large areas of calcification. The chemical analysis of the concretions, of which more than three dozen had been preserved by the patient, ranging in size from that of the head of a large pin to that of a pea, showed that they contained lime, mucin, bronchial epithelium, crystals, and leucocytes.

The Value of Wassermann's Syphilis Reaction in Surgical Diagnosis.—Karewski describes twenty-eight cases in which the method of fixation of the complement was resorted to as a test for the presence of syphilitic infection, ten of the number proving negative and eighteen positive. The results of the tests accord so well with the clinical diagnosis that the author speaks very favorably of the value of the measure as a deciding criterion in doubtful cases, though its complicated nature renders it unsuitable for routine use. A negative serum reaction of itself is not decisive, but from the differential standpoint may be of value in making it probable that suspected lesions are of nonsyphilitic origin. A positive result affords the quickest and most reliable proof of the presence of the disease. It is therefore especially valuable to the surgeon, since it gives him a definite basis for action in cases in which all other signs are absent, and under these circumstances it should never be omitted. If the history or the evidences of previous lesions establish the diagnosis it is unnecessary to resort to this test, since it throws no new light on the character or activity of the manifestations under observation.

Specific Precipitin Formation on the Injection of Human Feces.—Fuerstenberg was able to produce the formation of specific precipitins in rabbits by treating them with extract of human feces. For this purpose the material was triturated with about five times the amount of physiological salt solution, the mixture allowed to stand over night and then centrifuged for fifteen minutes. The supernatant fluid was filtered several times through paper and in one series of observations was heated for half an hour to 58 degrees in order to kill most of the intestinal organisms. In another series the fluid after filtration through paper was filtered through a porcelain filter. In a third series the extract was concentrated by exsiccation over calcium chloride to about a third of its volume. These preparations were injected into the animals subcutaneously or intravenously. The intravenous injections, particularly of the porcelain filtered fluid, were best borne. Eight injections of 2 to 3 cm. were given intravenously at intervals of about a week. The serum of these animals had then acquired a specific precipitin which reacted only to extracts of human feces and not to those of rabbit or sheep dung. Monkey dung was not tested.

Tuberculin in Renal Tuberculosis.—Pielicke considers that the tuberculin treatment of tuberculosis of the kidney has its indications, and describes a case which was arrested if not cured by this means. He concludes that in dealing with isolated tuberculosis of the kidney tuberculin sometimes appears to effect a cure. When the disease is bilateral and is complicated with pulmonary tuberculosis the tuberculin treatment is indicated. The question of whether a kidney is to be extirpated or tuberculin is to be used must be decided from case to case; if the condition is advanced and is unilateral extirpation will certainly prove the best treatment. If, after a nephrectomy, it is found that the second kidney is tuberculous, the tuberculin treatment is to be recommended. Tuberculin also appears to yield particularly good results in cases of tuberculosis of the bladder.

French and Italian Journals.

Neurasthenia from the Point of View of Pathogenesis and Clinical Manifestations.—Dr. Renzi says that the name neurasthenia corresponds to a proteiform affection having diverse etiological elements and associated with other affections. It is not simply a condition characterized by fatigue, loss of tone, and exhaustion, but there are other symptoms due to an increase of energy and functional disturbances. In neurasthenics the cardiovascular pressure, muscular force, and memory are preserved and are even better than in a normal condition. Neurasthenia is the disease of modern life and due to cerebral fatigue. It is most variable in its clinical syndrome and may vary from an insignificant manifestation to the gravest psychosis. By its generalization in modern times and the psychical nature of the affection it deserves to be called the new psychosis.—*La Riforma Medica*, December 7, 1907.

Primary Malignant Tumors of the Ovary.—P. J. Dreyfus tells us that cancer of the ovary occurs once out of every ten affections of the ovary that require laparotomy. There are two periods of maximum appearance, puberty and the menopause. It is not very rare in children, and those moreover who have genital malformations are subject especially to its appearance. It is very frequently bilateral, a condition which may be accounted for by transference of cancer cells from one side to the other. The important symptoms are amenorrhea, pain, tumor, and ascites. Histologically we may distinguish epithelioma, sarcoma, and endothelioma. Epithelomata may arise from the epithelium of simple or dermoid cysts, germinative epithelium, follicular epithelium, and Wolffian epithelium. The sarcomata are polymorphous. They may originate from a fibroma, ovarian stroma, theca externa of a follicle, or a corpus luteum. Endotheliomata arise at the expense of lymphatic endothelium and blood-vessel endothelium. There is no other treatment for this kind of growth than removal early and complete. It is always advisable to remove the uterus and all the adnexa.—*Archives Générales de Chirurgie*, October and November, 1907.

Book Reviews.

The Medical and Surgical Knowledge of William Shakspere. With Explanatory Notes. By John W. Wainwright, M.D., New York: Published by the Author, 1907.

One of the greatest of English essayists—the late Walter Bagehot—has left us a most illuminating paper on, to use his own title, "Shakespeare—the Man," in which he argues with the hot lucidity typical of his style that, contrary to the commonplace assertion, we *do* know a great deal of the real Shakespeare. He says among other things that "to a great experience one thing is essential—an experiencing nature;" and to those sceptics who think an author's character cannot be deduced from his works he says that presumably "people do not keep a tame steam-engine to write their books." In the volume before us the writer has, by his own road, come round to this identical point, and made it clear to his readers by a most abundant and interesting array of quotations from the whole field of Shakespeare's work, that if he had not actually studied medicine (and there is no evidence that he did beyond this one of deduction from his works) his mind was yet a storehouse of the medical knowledge of his day. In the scholarly preface to this delightful little book the author points out that the same may be said of his knowledge of theology, or law, or astronomy, and sums up in words that cannot be bettered: "It is reasonably certain that he was accustomed to associate with all classes of men and women; that he was a keen observer, had an exceptionally retentive memory, sought knowledge from whatever source, could intuitively grasp a thought and put it to immediate use, mentally finish what was only begun by others. All people with whom he came in contact contributed to his knowledge, unconsciously, perhaps, more often than otherwise. He learned from all stations of life, from the Court to the gutter."

The extracts are grouped under the several headings of Medicine, Surgery, Mental and Nervous Diseases, Obstetrics and Midwifery, Therapeutics, Pharmacy, and Toxicology, Anatomy, Physiology, Hygiene and Dietetics, Ethics, and Medical Jurisprudence. Many of the quotations are striking, but not the least interesting feature of the brochure will be found in the running commentary following the quotations themselves. The frontispiece is an excellent photogravure from a photograph of the portrait which was the original of the Droeshout engraving in the first folio edition edited by Heming and Condell.

The Conquest of Cancer; A Plan of Campaign. Being an Account of the Principles and Practice Hitherto of the Treatment of Malignant Growths by Specific or Cancrotoxic Ferments. By C. W. Saleeby, M.D., F.R.S. (Edin.), Author of "Worry," "Heredity," "Evolution," "Psychology," "Sociology," "Ethics," etc. New York: Frederick A. Stokes Company, 1907.

The title of this work, it is needless to say, is intended to be prophetic rather than historical, for even Dr. Saleeby, enthusiastic as he is, and somewhat "previous," has modified his earlier statement, founded, we believe, on the result of one experiment in a mouse, that the cure of cancer has been found. His position now is that the nature of cancer has been discovered and that it is only a step further to fix upon a definite cure. We fear the step will have to be taken in seven-league boots, notwithstanding the undoubted fact that cancer has in a few cases apparently been cured by injections of trypsin. The book is a popular presentation of Dr. Beard's seductive theory, expounded by him so interestingly in the Medical Record, of the personality of cancer—a warring "lævoman" inclosed in the tissues of the normal or "dextroman"—and of the destructive action of the pancreatic ferments upon this unwelcome twin. The book bears evidence of having been hurriedly written, dogmatizes unwarrantably on uncertain and debatable points, and is lamentably wanting in the scientific calm which becomes a writer on as yet unproved theories. If it were addressed to professional readers these faults, while calculated to create an unfortunate prejudice against the subject, would not matter so much, but the lay reader, to whom the appeal is made, has not the technical knowledge or the training necessary for a judicial weighing of the evidence presented. The day of secrecy in medical science is past, but the time for presenting theories as facts and thereby arousing hopes which may prove to be vain in the minds of sufferers from mental disease has not come, and we hope, for the sake of these sufferers, that it will never come. The excuse which the author gives, or implies, for appealing directly to the laity is that the professional channels of publicity have been closed to him and to Dr. Beard. We do not know how far this charge is justified in England, but it is certainly not so in this country. The medical journals in the United States have freely opened their columns to the author of the theory and to other writers who have reported cases of cancer treated with trypsin, and we venture to say they will always be open to anyone who has theories or facts to present contributing to a solution of the problem of cancer or of any other of the diseases of mankind. The medical journal is the place for such presentations and discussions, but not the secular magazine or a book addressed to the laity.

Dr. Saleeby's book, however, despite its faults and its injudicious appeal to the laity, is worthy of consideration by the medical reader. It states Dr. Beard's theory in fairly readable fashion, and those who have not seen the originals can get a very good idea of the subject from this paraphrase and elaboration of Dr. Beard's articles. The author endeavors, though strugglingly and not always successfully, to treat of his subject judicially, and he admits that there are therapeutic problems not yet worked out, though he has no doubt that the solution will be reached in time. Doubtless it will in one way or another, but we fear Dr. Saleeby's premature appeals to the laity will not further the cause of which he has constituted himself the champion.

A Textbook of the Practice of Medicine. For Students and Practitioners. By James Magoffin French, A.M., M.D., Formerly Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Third Revised Edition. 135 Illustrations, 25 Being Full-Page Plates in Tints and Colors. New York: William Wood & Co., 1907.

The third edition of this excellent work on practice appears greatly enlarged, and whereas the first edition was stated to be chiefly for the use of students, the present work appeals to the practitioner as well and takes its rank with any of the other standard treatises on internal medicine. The general arrangement of the subjects remains the same, however, and, despite the amplification, the very clear and simple descriptions retained from the earlier editions preserve the character of the work as one especially adapted to the needs of the student as well as to those of the practitioner. Parts I and III, which are particularly serviceable to the student, dealing with general pathology and clinical methods of examination, have been retained substantially as before, except for the necessary revision and slight enlargement, the most extensive alterations being in the sections on practical medicine. Special attention has been devoted to tropical diseases, and the chapter on animal parasites made more complete and more modern, a new classification and nomenclature having been adopted in place of those which have descended through successive generations of medical textbooks. The sections on treatment are particularly good, the author being a moderate optimist, seeing the possibility of the arrest and cure of many diseases, yet not being carried away by an unreasoning belief in specifics. To the young practitioner especially French's practice may be safely recommended as one of the best of the modern textbooks, a sound instructor in pathology, and a trustworthy guide in therapeutics.

Nouveau Traité de Chirurgie, publié en fascicules sous la direction de A. Le Dentu, professeur à la Faculté de Médecine de Paris, et P. Delbet, professeur agrégé à la Faculté de Médecine de Paris. 33 fascicules grand in-8, avec figures.

I.—Les Grands Processus Morbides. Par P. Delbet, Chevassu, Schwartz et Veau. Paris: J. B. Baillière et Fils, 1907.

This is the first volume of the new edition of Le Dentu and Delbet's well known surgical treatise which represents for France what "Deutsche Chirurgie" is for Germany and Bryant and Buck's Surgery is for this country. The French work is not profusely illustrated, at least this first volume contains but 53 figures in the text and no plates. As the title of this first part indicates, it deals with the great morbid processes which are at the basis of most surgical conditions, in other words, with general surgical pathology—traumatisms, infections, vascular and tropic disturbances, and scars. The subjects receive a broad and all-sided treatment, though chiefly from the surgeon's viewpoint. The book is chiefly of value as a theoretical treatise on surgical pathology, but there are under each heading sections on diagnosis and treatment which add considerably to its practical usefulness. It is amusing to see Lord Lister's name printed "Listre" (on p. 21) in a Gallicized form. An excellent summary of the serum treatment of tetanus is included in the chapter on infections.

Society Reports.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, Held at St. Louis, Mo., December 30 and 31, 1907.

THE PRESIDENT, DR. CHAS. W. OVIATT OF OSHKOSH, WIS., IN THE CHAIR.

AFTER a brief address of welcome by Dr. JOHN YOUNG BROWN on behalf of the local profession, which was responded to by Dr. CHARLES E. BOWERS of Wichita, Kan., the reading of papers was begun.

The Largest Common Duct Stone on Record.—Dr. WILLARD BARTLETT of St. Louis, Mo., reported this case and exhibited the stone. The patient was a man, 46 years of age, with a history of gallstone disease extending over twenty years, which was plainly referable to the common duct. The stone in the duct could be palpated through the abdominal wall; still the man was jaundiced only at times. The stone measured four inches in length by one inch and a half in diameter, and weighed two and one-half ounces. The duct was partly sutured and drained for one month. Five months later the patient was in better shape than he had ever been in his life before.

The Pathological Gall-Bladder.—Dr. B. B. Davis of Omaha, Neb., in a paper with this title, said that because a patient had lived through an operation it did not necessarily mean that he was cured. Unless the gall-bladder continued to functionate normally and painlessly, the patient was not willing to consider himself cured. Many patients in whom drainage was instituted had a recurrence of the symptoms and a secondary cholecystectomy became necessary. This usually produced a relief of all symptoms. The following conditions in the writer's experience called for extirpation: (1) Adhesions between the gall-bladder and the stomach, colon, or omentum. (2) Stenosis, or even narrowing of the lumen of the cystic duct, due to old inflammation or pressure necrosis from an impacted stone. (3) Gall-bladders with thickened walls due to long-continued cholecystitis. (4) When external fistulæ or fistulæ between the gall-bladder and the stomach or colon were present. (5) When the gall bladder wall was made up of scar tissue largely displacing the normal muscular coats. (6) When the gall-bladder was found filled with mucus, clear or tarry, and there was no fresh bile. (7) In gangrene of the gall-bladder. (8) In perforation of the gall-bladder. (9) In empyema of the gall-bladder, the mucous membrane being usually destroyed over large areas. Cholecystostomy in the presence of the conditions given as a rule did not relieve, and extirpation had to be done later. In most cases the cholecystectomy could be done as a primary operation, without adding to the operative risk. The writer disclaimed taking too radical grounds, since he believed in the retention of every gall-bladder that would not be a menace to future comfort.

The Differential Diagnosis of Duodenal Ulcer from Gallstones.—Dr. W. D. HAINES of Cincinnati, O., said that prominent symptoms in common were pain, vomiting, and flatulence, together with the deleterious influence which these symptomatic manifestations exerted on the general health of the patient. Both complaints were referred to the upper right quadrant of the abdomen, and while the pain in cholelithiasis, which was sharp, decisive and of sudden onset, was referred to a point opposite the right ninth costal cartilage, it might radiate over the entire right side of the abdomen, and not infrequently found expression in the right shoulder joint. Again, the pain might be most intense in the region of the tenth dorsal vertebra. Vomiting, if present, was characteristic in that the ejected matter was bile-stained, consisting largely of mucus, and afforded no relief to the patient. Hot fomentations might give temporary relief, but full doses of morphine were usually required to allay the terrible suffering. In duodenal ulcer the pain recurred at intervals, was less sudden of onset and severe in character. It was described as a burning or gnawing sensation, which might last a few days or continue for months after the primary attack. Unlike the lancinating pains of gallstones, pain in this disease was markedly influenced by the presence or absence of food in the stomach. A certain degree of relief invariably followed the ingestion of a full meal, lavage of the stomach, or the drinking of a quantity of alkaline fluid. The spasm of the pylorus was a frequent accompaniment of ulcer, but wholly unknown in early gallstone cases. Spasm of the diaphragm was evidence of severe pain, which, if referred to the region under consideration, indicated gallstones, as ulcer pain, in the absence of perforation, was not of sufficient severity to produce this symptom. Gaseous distention spoke for ulcer, and the accompanying pain quickly subsided after expulsion by eructations or vomiting. Muscular rigidity and local tenderness were present in both ulcer and stone cases. Pain in duodenal ulcer was due to the passage of acri-acid stomach contents and to distention by gas. Vomiting was of less value as a symptom than either pain or distention, but it was well to remember that vomiting was full and free, followed by marked relief, and ceased promptly in ulcer cases, leaving little depression and no nausea. In late or recurrent gallstone histories, vomiting was a prominent feature, and the same might be said of chronic ulcer. The slight transitory disturbance of the one and the invalid-dealing influence of the other would materially assist in putting one right in the diagnosis. Hemorrhage occurring during an attack of gallstones was accidental, but it was prominent as one of the late manifestations in ulcer. Jaundice, like hemorrhage, was a late symptom and might be present in either of the conditions under consideration. Jaundice following lancinating pain of sudden onset, localized in the upper right quadrant of the abdomen, radiating over the right chest wall or accompanied by pain in the right shoulder, would warrant a conclusion of the presence of gallstones. Constipation was one of the early effects of duodenal ulcer. In a certain percentage of the chronic and some of the acute cases of stone and ulcer, differentiation would be reserved for that erstwhile, much-used, sometimes abused, method of diagnosis—exploratory incision

Peptic Ulcer of the Jejunum.—Dr. F. GREGORY CONNELL of Oshkosh, Wis., reported one case of this character, in which a secondary gastroenterostomy was performed three years after anterior gastroenterostomy for pyloric ulcer with stenosis. After a consideration of the subject and an analysis of thirty-nine cases, he concluded as follows: (1) Peptic ulcer of the jejunum was a possible result of gastrojejunostomy. (2) It was probably of more frequent occurrence than the 30 reported cases indicated. (3) It followed the long loop operation more often than the no loop operation. (4) The symptoms might be latent until either acute hemorrhage or perforation occurred. (5) The symptoms might be chronic and simulate those of gastric or duodenal ulcer. (6) Peptic ulcer of the jejunum should be considered in all cases of return of symptoms after gastrojejunostomy. (7) A symptomless period after the operation was necessary to eliminate a continuation of the condition for which the gastrojejunostomy was performed. (8) A differential diagnosis could rarely be made before operation. (9) Prophylactic treatment, aiming to reduce the excess of acidity, should be instituted after all gastrojejunostomies for benign conditions, and should be continued for at least six months. (10) Treatment would be either medical or surgical, similar to that for gastric or duodenal ulcer. (11) The possible occurrence of ulcer of the jejunum was

an additional reason for performing gastrojejunostomy only where it was positively indicated, namely, by pyloric obstruction.

Acquired Atresia of the Common Duct Due to a Gall-stone.—Dr. John C. Hancock of Dubuque, Ia., after referring to the literature, reported the case of a woman, aged 66, who gave this history in connection with her illness, which had existed two years and nine months: Family history was negative. Previous history also negative, except for severe headaches and occasional palpitation. Her present illness began October, 1901, with sudden and severe pain in the abdomen in the region of the ninth and tenth ribs, vomiting, purging, chill, and fever. The attack lasted from one to two days, and subsequent prostration delayed the patient's return to her home for two weeks. Three weeks after her return home she began to experience excruciating soreness in the same region as before, and extending around the ribs to the right shoulder blade and shoulder. This condition, with variations in severity, lasted all winter. April, 1903, patient experienced a sensation of pushing and grinding, starting in the right side. This extended across the back and abdomen, and lasted two weeks. With this girdle pain the patient was confined to bed and jaundice set in. This had persisted. From a weight of 116 pounds patient gradually lost 36 pounds, but the loss of strength was not as great in proportion as the loss in weight. With the jaundice there was loss of appetite, itching, dullness of the sensorium, many slight chills, and once a severe attack with high fever. The stools, which had been dark, became clay colored. Urine had been scanty and high-colored most of the time since jaundice set in, and the patient had to micturate as often as four times a night. April, 1904, her feet began to swell slightly and later the body. The bowels, irregular and costive before, began to be irregular and loose, moving three to four times in twenty-four hours, and accompanied by pain in the lower abdomen. At present the patient suffered no longer with headaches, but faint at times, had enjoyed fair appetite until the last few days, was not troubled with belching or heartburn, had some shortness of breath, but no cough, occasional palpitation, which, however, antedated the illness in question. Stools watery and cream-colored. Examination revealed a short, jaundiced woman, with spare body above the waist, prominent abdomen, and slightly edematous lower extremities; pulse 90; temperature 99.2°; respiration 16; sclera bile-tinged; lungs negative; heart apex beat third interspace inside the nipple, and no murmurs. Liver dullness extended from the fifth rib in the mamillary line to four fingers' breadth below the costal margin. Ascites was present and prevented the examination of other abdominal viscera. No tumor was made out, nor tenderness, except near the costal margin on a line between the ninth rib and umbilicus. The circumference of the abdomen at the umbilicus was 96 centimeters; urine high-colored, acid, sp. gr. 1,032; bile present; albumin, slightest possible trace; no sugar; occasional hyaline casts; some small round epithelial cells, probably from the kidney; a few abnormal red blood corpuscles, abundance of various forms of large epithelial cells, probably from the bladder and pus corpuscles. The next day six quarts of ascitic fluid were removed, having a specific gravity of 1,011, and a trace of albumin. The abdomen was now soft and permitted satisfactory palpation. The liver was felt to be hard and smooth for three fingers' breadth below the costal margin on the right, and to reach more than half way to the umbilicus, thence across the epigastrium transversely, where the edge could be easily grasped between fingers and thumb of the same hand. In the epigastrium, slightly to the right of the median line below the liver margin, numerous hard nodular masses, slightly tender and movable, were made out. The liver itself was not tender, but the region of the gall-bladder was still markedly so. Spleen was enlarged. The abdomen otherwise was negative. After carefully considering the hazards of operation in the presence of jaundice, and more particularly ascites, the patient decided upon operation. Accordingly, through a vertical incision through the right rectus the abdomen was opened. The residual ascitic fluid was removed. Viscera were found congested, and in addition in the upper right quadrant densely adherent. So far hemorrhage was not extraordinary, but upon separating the adhesions the fresh surfaces bled freely and continuously, in spite of ligatures and the fact that no demonstrable vessels were severed. A hard, cirrhotic liver and several enlarged lymphatic glands were readily found, and a small contracted gall-bladder identified. From this stage on further exploration had to be done almost entirely by palpation on account of hemorrhage. A movable stone, the size of an olive, was felt in the common duct, but no evidence of malignant growth was made out. By this time the hemorrhage had become alarming and had so obscured the field that the attempt to incise the common duct to allow for bile drainage had to be abandoned. The field was packed and the abdominal wound partly closed. Patient left the table showing signs of shock and hemorrhage and died fourteen hours later from complete exsanguination, in spite of calcium chloride, etc. Shortly after death a partial autopsy was made. The abdominal cavity was found entirely free from clots, although the pelvis contained free blood. The findings at operation were confirmed. The gall-bladder was contracted to the size of an olive. The common and hepatic ducts were greatly enlarged. At the junction of the cystic and common ducts was found a cicatricial contraction of cystic duct. In bladder and duct were several small flat concretions. Upon removal of the large stone from the lower end of the common duct the condition of atresia of this duct was discovered. The lower end of the duct was perfectly smooth, without a sign of opening into the duodenum, and might be likened to the blind finger end of a rubber glove. The bile tract, a portion of the liver, the duodenum and pancreas were removed *en masse* and examined both macroscopically and microscopically. Macroscopically the liver presented the appearance of hypertrophic cirrhosis, but under the microscope the changes of atrophic cirrhosis were present. Macroscopic examination showed atresia of both the common duct and that of Wirsung. The duct of Santorini could not be found, and there was entire absence of the papilla on the duodenal side. Microscopically the ductus choledochus, that of Wirsung, the pancreas, and duodenum showed chronic inflammatory changes, but no malignant elements. Bile was present in the common duct. The stone was found to be a mulberry calculus, composed almost entirely of cholesterin, with the poles made up, superficially at least, of bile pigment and calcareous salts.

Dr. Charles H. Mayo of Rochester, Minn., said that he and his brother had done twenty-two hundred operations on the gall-bladder and ducts. Of this number there were over six hundred cholecystectomies and about three hundred operations on the common duct. A few years ago they had a leaning towards the removal of the gall-bladder if there was any disease of the mucosa perceptible, while now they were inclined to leave the gall-bladder if the cystic duct was open. The operation, however, of the removal of the gall-bladder as a secondary operation was not as serious as operations on the common duct which might be necessitated later, after the removal of the gall-bladder. They believed that the removal of the gall-bladder resulted later in a majority of cases in the distention of the common duct. They have had five cases of the reformation of stones in the common duct, and three of them after the removal of the gall-bladder. In all of the series he only recalled two cases in which, after the primary operation of removing gallstones from the gall-bladder, stones reformed in that viscus.

Dr. C. H. Wallace of St. Joseph, Mo., reported the

case of a woman upon whom he operated some two years ago for the removal of stones in the gall-bladder. The gall-bladder itself was found in a fairly good condition; the mucosa was not diseased, not very much enlarged, and the walls not much thickened. A number of stones were removed, and drainage established. Some two or five weeks ago this woman began to have attacks again. In the third or second attack she passed three or four small gall-stones. This was a case in which the question arose as to whether in doing a second operation the gall-bladder should be removed or drainage again tried. He thought surgeons got the impression from those who did a large amount of gall-bladder surgery that if in a given case there was a healthy gall-bladder, with stones in it, where the mucous membrane was not diseased, if the stones were removed and the gall-bladder drained, the patient could be assured that he or she, as the case might be, would get well. Occasionally, however, such patients returned, and the guarantee of such a prognosis cannot be given now with as much assurance as in former years.

Dr. J. E. Summers of Omaha, Neb., said that seven or eight years ago he reported a case in which there was a tight stricture at the lower end of the common duct, and also of the cystic duct, the common duct acting as a reservoir. The liver was very much hypertrophied, as was also the spleen. The technique employed was to open the common duct and to make an anastomosis between this and the duodenum. The patient made a nice recovery after a long time. Mayo Robson had also reported one or two of these cases, which Dr. Hancock did not mention in the literature of the subject, and he thought Dr. Wm J. Mayo had reported one or two others.

Dr. James E. Moore of Minneapolis said that within the past six months he had seen two cases of gallstones of great interest. One was the case of Dr. Mayo, and the other a case of his own. Both cases had practically the same symptoms. In his case there were, first, the ordinary gallstone symptoms. The patient was operated on, the stones removed, and the gall-bladder drained. Later the patient had a recurrence of symptoms, and at the operation gallstones were found in the gall-bladder; the gall-bladder was found diseased, and cholecystectomy was performed. The interesting feature about his case and that of Dr. Mayo is that these women are at the present time suffering again from gallstone colic. What should be done? The only hope was that there was a stone or stones in the common duct that might be reached. He had not yet operated upon a case of that kind. He thought, however, it was quite possible that these stones might be in the hepatic duct, because in the case on which he operated and removed the gall-bladder the stones were many, small, and soft, looked like millet seeds, and evidently came down from the gall-bladder at the time. He had the feeling that this woman would surely have trouble some time in the future. It was only two years since he did the cholecystectomy, and now she was having serious symptoms and very grave attacks, but without jaundice.

Dr. John C. Morfit of St. Louis, Mo., reported two cases of bowel obstruction due to gallstones, which had occurred within sixty days of each other in the last year. A woman of 80 had acute obstruction of the bowel, with finally total obstruction when he saw her. The bowel was obstructed at about 18 inches above the ileocecal valve by a stone an inch and a quarter in diameter, and an inch and a half long, which evidently came from the gall-bladder. She made a very satisfactory immediate operative recovery. Pneumonia, however, developed on the eleventh day and she died on the fifteenth day after operation. A post-mortem examination was not made, but the question arose as to the pathological anatomy in the region of the gall bladder. How did this stone get into the intestine? Did it come through the common duct, or did an inflammatory anastomosis occur between the gall-bladder and some portion of the alimentary canal? He believed that there was, as a result of pre-existing inflammation, an ulceration or anastomosis between the gall-bladder and duodenum or possibly some portion of the small intestine. Within a few weeks thereafter another woman, 56 years of age, presented herself with exactly the same condition. He was able to strike a stone in practically the same situation at once, the stone being of the same size and same consistency. The intestine was opened by a linear incision, the stone liberated, the incision closed, and the patient made an uneventful recovery.

The Use of Harrington's Solution in the Treatment of Suppurative Inflammations of the Knee Joint.—Dr. J. E. Summers of Omaha, Neb., said that it had been proven experimentally and clinically that Harrington's solution would kill all of the common germs met with in surgical practice in from twenty seconds up to one minute, and was not caustic. After thorough washing of the hands in hot soapsuds and then immersing them for two minutes in this solution, if cultures were taken, there should be an entire absence of germs. Even when there was no preliminary washing of the hands before their immersion in the solution for two minutes, the results were remarkable. The author reported an interesting case in which this solution was used, and said that while his experience with Harrington's solution was not great, it could be used very advantageously in infective wounds where it was applicable. After thorough surgical cleansing of a wound or abscess cavity, the solution was allowed to remain in contact with all its surfaces for from three to five minutes; it was then irrigated or sponged away, and the particular wound dressed as required. Anyone who would try Harrington's solution would like it. It had, besides, its established antiseptic property, the power, when applied to a raw surface, to produce a copious discharge of serum, thus aiding the washing away of noxious elements from the wound.

Dr. Charles H. Mayo emphasized the value of Harrington's solution as an antiseptic, and said that it was one of the best and least destructive in use for suppurating wounds.

The Removal of Gallstones in the Common Duct Through the Lesser Omentum.—Dr. M. L. Harris of Chicago said that the gall-bladder and its contained stones might be enucleated without much difficulty, but should the common duct harbor stones it might be impossible to reach them by the usual route. He did not now refer to those cases in which a stone was lodged in the ampulla of Vater, and which could be reached by the transduodenal route, but to those in which the stone was in the upper part of the duct or movable within the duct, and which, owing to the pyloric end of the stomach having been drawn to the right by the adhesions, lay behind this portion of the stomach as well as the duodenum. In two cases of this kind which came under his care, after a somewhat prolonged fruitless effort to reach the common duct in the usual way, he succeeded in reaching and removing the stones by following a new route through the gastrohepatic or lesser omentum above the pyloric end of the stomach. These two cases he reported in detail. The advantages of this route in these cases were the great saving of time over attempting to work one's way through an almost impossible mass of adhesions, and the lessened dangers of injuring the duodenum or other structure.

Removal of the Whole or a Part of the Humerus.—Dr. E. M. Sala of Rock Island, Ill., said the removal of the whole or a part of the humerus was a comparatively safe operation, and one which should be carefully thought of in all cases where amputations were formerly the first aid to the injured in serious disturbances of the humerus. He thought too many arms had been sacrificed in the past that might have been saved had the surgeon cared to try

an extirpation of only the diseased portion of bone. Almost any kind of an arm was better than no arm. Before the days of aseptic surgery there possibly was some excuse for amputating anything in the shape of an arm that looked bad, but to-day, with the aid of aseptic and antiseptic methods, we were expected to attempt greater feats in surgery. That it was possible for a whole or a part of the humerus to be extirpated, and the patient given a useful arm and forearm, was beyond doubt. One-third of the upper end of the humerus might be removed and the patient appear as though nothing had ever happened to the upper extremity, except shortening on that side. The whole humerus might be removed without serious disturbance to the hand and wrist, especially if care was exercised in saving the muscle-spiral nerve in its separation from the bone. Dr. Sala reported the cases of two patients, operated on some thirteen years ago, in which the results of conservative surgery were remarkable.

Dr. Roland Hill of St. Louis, to show what can be accomplished by conservatism in the treatment of lesions of the humerus, said that about two weeks ago he presented a case before the St. Louis Medical Society, in which the upper part of the humerus was involved, and which was removed. This man had been taken ill in 1892, with a septic condition involving the upper part of the humerus and also the glenoid part of the scapula. In the winter of 1905 he came to the city and Dr. Morfit opened the joint, removed some dead bone from the upper part of the humerus, and also from the scapula. The patient returned home at the end of five weeks in a much better condition, but in the summer he began to be septic again. He came to the speaker in July, at which time there was a constant discharge of pus. He opened up the parts freely, removed the head of the bone, cleaned out the cavity and packed it. The patient improved very much, went home, but the joint did not heal up. There was a constant discharge, and in March, 1906, the patient came back with the idea of having the arm removed. Dr. Hill made one more effort to save it, opened it up, curetted the diseased tissue, and found there was some necrosis at the head of the bone extending down to the medullary cavity, which was removed. He thoroughly dried it and sterilized the parts with carbolic acid and alcohol, and then filled the cavity with Moorhof's bone mass. The arm was not dressed again for a week. In about six weeks thereafter healing had taken place. The arm was kept in a sling for four months, at the end of which time the patient was able to use it, and had been using it ever since.

Dr. W. D. Haines of Cincinnati mentioned a case in which he removed almost the entire humerus from a boy, ten years of age, in 1898, who had a number of sinuses along the outer surface of the arm. No attempt was made to save the periosteum; the entire bone was removed down to within two inches of the condyles. The patient has to-day a useful arm. He endorsed this method with reference to primary amputation, and said that amputation, if really necessary, could be done later.

The Surgical Treatment of Hallux Valgus, with Bunion.—Dr. Charles H. Mayo of Rochester, Minn., recommended for this condition a curved incision, base down, over the metatarso-phalangeal joint. The bursa of the bunion was preserved, and left attached to the base of the first phalanx. The head of the metatarsal bone with the greater part of the bunion was removed. The bursa was turned into the joint in front of the cut end of the bone. Thus was utilized a ready formed bursa to prevent joint fixation, a result which was obtained in other joints with difficulty by turning fatty tissue into a joint to develop such bursa. The general function of the joint was nearly perfect and continued to be so after many years.

Early Restoration of Function After Excision of the Elbow in Tuberculous Cases.—Dr. G. G. Cottam of Rock Rapids, Iowa, related the history of the case of a young farm laborer who suffered from tuberculosis of the capitulum humeri, with ankylosis of the elbow, in which it was very desirable to secure early use of the arm. Excision by Kocher's incision was used, and through this means and by radical modification of the after-treatment from that usually employed, together with the fact that the operation was done before the soft parts were extensively involved, brought about the desired result, the patient being able to do the heavy work of his occupation after the eighth week. The paper concluded with the following summary of the points involved in producing such an outcome: (1) Early operation, that is, as soon as it was certain that the disease was present and not yielding to conservative treatment. (2) Choice of a method of operating which preserved the integrity of all the important nerves and muscles. (3) Removal of sufficient bone to insure free mobility. (4) Immobilization in the extended position, with maintenance of the angle of deflection. (5) Active motion at the end of three weeks.

Anesthesia Fatalities in Iowa.—Dr. L. W. Littig of Iowa City, Iowa, sent a circular letter to 3,500 physicians practising in Iowa. Eight hundred replies were received, many of them containing information which led to reports of fatalities by men who did not reply to his first letter. He had rejected reported chloroform fatalities occurring from two to four days after anesthesia, because he did not think it was possible to secure anything like reliable data in this class of cases. He had rejected ether fatalities occurring at the close of a long and difficult operation. He had excluded cases in which he thought that the operation itself was of sufficient magnitude to cause death on the operating table, or soon thereafter. He had excluded obstetric fatalities in which placenta previa or severe hemorrhage complicated delivery. He had excluded cases in which pneumonia or other lung complications followed gall-bladder or other abdominal work. The report contained 63 chloroform fatalities. Of these 63 fatalities 10 occurred in dental practice. One fatality was due to choking during anesthesia. There were 5 fatalities in confinement in which chloroform was used, and in which the reporter blamed the chloroform. There was one confinement fatality, in which ether was used and in which the reporter blamed the ether. There was one hyoscine-morphine, ether, chloroform sequence, and one chloroform ether sequence. There was one late chloroform fatality, with jaundice. The author concluded that (1) chloroform was vastly more dangerous than ether, and especially so in minor work, and at the beginning of administration. The chloroform ether sequence was especially bad. (2) In the class of work mentioned, chloroform was so much more dangerous than ether that its use should be most emphatically condemned, and that "the surgeon (quoting H. C. Wood, writing sixteen years ago or earlier) is not justified in using chloroform except under certain circumstances and for very definite reasons." (3) Chloroform was especially dangerous in dental work and should not be used. (4) Chloroform was not free from danger in obstetric practice.

The Abdominal Incision.—Dr. Clifford U. Collins of Peoria, Ill., read a paper on this subject, in which he drew the following conclusions: (1) Abdominal incisions should be placed so they will pass through both oponeurosis and muscle. (2) The incision in the aponeurosis and the split in the muscle should run in different directions. This could be done in a large majority of abdominal operations. (3) A longitudinal incision should not be made through the linea alba or the sheaths of the rectus at a right angle to the combined pull of the three side muscles when it was possible to avoid it. (4) For very large tumors in cases where the character and location of the pathology was in doubt, the longitudinal incision was probably necessary. (5) If the longitudinal incision was necessary the split in the rectus should not be continuous

with the aponeurotic incision, but should be placed to one side, and preferably through its inner half to avoid the intercostal nerves which entered the outer half. (6) It would take longer time and more experience to demonstrate the correctness of these conclusions.

Arthrodesis and Tendon Transference in Paralytic Club-Foot.—Dr. John Prentiss Lord of Omaha, Neb., advised arthrodesis and tendon transference in cases of paralytic club-feet for the following reasons: (1) To prevent the return of the deformity, which so often occurred where braces alone were used. (2) To avoid loss of time during which the child became confirmed in the habit of deformity. (3) Because younger children learned to walk anew much easier than did those of more advanced years. (4) Where the patient was financially unable to meet the expense of prolonged treatment with braces. (5) By preventing return of deformity, the parents did not fall into the habit of thinking nothing could be done. (6) It utilized to best advantage the remaining muscular power and gave the best possible results to be obtained in these cases. The degree of work done depended upon the amount of deformity. Ordinarily, removal of the articular surfaces from the tibio-astragaloid, astragalo-scaphoid, and calcaneo-cuboid was done to effect arthrodesis. In addition, transference of the tibialis anticus to the common extensor for toe-drop was done, while in extreme equino-varus astragalectomy with removal of the joint surfaces from the calcaneo-cuboid articulation, and even suturing the tibialis anticus to the periosteum on the outer side of the cuboid, might be demanded. In some cases, even the flexor longus hallucis was brought through the inter-osseous membrane and sutured to the common extensors. In the rare cases requiring muscle-splitting, he said we should avoid severing the transverse nerve fibers in the body of the muscle. Dr. Lord had used catgut sutures, except where the tension was heavy, when he used fine silk, boiled in bichloride, dried and reboiled in paraffin, before operation. In more than 40 consecutive cases the results had been very satisfactory. In joint cases cigarette drainage was used to take away oozing. This was gradually removed, no suppuration taking place. Heavy casts were applied as long as six months, the use of the foot being gradually increased after three or four months. The results had been very gratifying, the majority of patients having been able to discard braces or crutches within a reasonable time.

President's Address.—Dr. Oviatt did not deal with any concrete surgical problem, but his address consisted of a few thoughts bearing on the practice of surgery that naturally came to one who had spent the most active years of his life in the work. No attempt was made to take up the history further than to show that previous to the year 1800 but few discoveries were made that marked any distinct advance. The evolution of surgery in the past century had kept pace with the development of science along other lines, wonderful as this had been. With the perfected technique of antisepsis and asepsis, it seemed that the acme of surgical science had been reached; but in the light of discoveries it would be rash to attempt to place a limit to the future of surgery. The ambitious medical student did not usually get far into his college work before he decided to become a surgeon. This decision was brought about largely through what he saw in surgical clinics and from his observation of the position held by the surgical leaders of the profession. Young men who elected to become surgeons should make sure that they possessed the special aptitude and then be willing to devote a long period to preparation for the work. Attention was called to the fact that there was much that passed under the name of surgery being done by incompetent and ill-trained men. Some of it was honest and well-intended, but much was for purely commercial ends. A spirit of graft had pervaded the profession that was undermining morals and ethics. A partial explanation for the existence of this condition was found in the fact that this was an age of commercialism. We were known to the world as a nation of dollar chasers. This, and the overcrowding of the profession with men from inferior schools, were in large part responsible for fee-splitting and the commission evil. The existence of this class of medical colleges was less excusable when it was considered that the better schools ranked with the best in the world, and that they were ample to afford instruction for all who should enter the profession. Enough well-prepared men of character were entering the field to insure the upholding of the lofty ideals that had characterized the profession in the past. We might, therefore, take a hopeful view of the future. Another aid in the elimination of the graft evil was coming from the people themselves. The public mind was especially active at this time in combating graft in all forms. The moral standards set for professional men and men in public life were going to be higher in the future, and with the limelight of public opinion turned upon the medical and surgical grafter, the evil would cease to exist. Hand in hand with this reform, it was hoped that an established standard of qualification would be established for those who assumed to do surgery.

The Significance of Abdominal Tenderness in Locating Lesions of Viscera.—Dr. T. C. Witherspoon of Butte, Montana, referred to the physiology of the sensory nerves of the abdominal viscera, and discussed at length the effect of lesions of the viscera in the production of pain. The somatic areas of pain referred from the viscera and their significance in diagnosis were pointed out and expatiated upon; likewise the character of visceral pain. He spoke of disturbance of the sensory function of the somatic nerves, with coincident disturbance of visceral function. Lastly, he called attention to those pains of central origin which were referred to the abdomen. Pott's disease, tabes, and tumors in the spinal canal illustrated this class. Usually the subjective pain was not accompanied by tenderness, at least not of any acuteness.

Etiology of Epithelioma.—Dr. Arthur E. Hertzler of Kansas City, Mo., began with the hypothesis that the limitation of epithelial cell development was set by the chemical difference in the basement membrane and epithelial cells. Experiments proved that those chemicals which unite (stain) connective tissue *in vivo* caused an atypical epithelial cell proliferation resembling closely a beginning epithelioma. The development of atypical cells was limited because the action of the chemical upon the connective tissue was limited. This resulted in constancy for stains having these characteristics. It was negative for connective tissue stains which did not stain *in vivo*, or for nuclear stains. Areas in which atypical cell proliferation had been brought about by such means the fibers, after fixation, did not stain with the ordinary fibrous tissue stains, while the fibrous tissue in regions not so treated stained in the characteristic manner. Applying facts so deduced clinically, the general statement was ventured that epitheliomas occurred in those regions where alkaline secretions were permitted to come in contact with the fibrous tissue by irritation, thus producing the resistance of the connective tissue to the invasion of epithelial cells or to some change primarily in the connective tissue, *e.g.* prolonged exposure to leucocytes, as in chronic inflammation, or to some overstimulation of the epithelial cells. Either of these conditions would lead to a disturbance of chemical balance and permit the invasion of the epithelium.

Preparatory and Postoperative Treatment.—Dr. James E. Moore of Minneapolis said that as a rule preparatory and post-operative treatment, aside from the sterilization of the operative field and the dressing of the wound, had more to do with the comfort of the patient than with his recovery, for emergency cases very commonly did well, and surgeons frequently performed suc-

cessful operations away from home and left the after-treatment to a physician little skilled in the care of surgical cases. In all but exceptional cases, where some organ, the bladder, for example, had to be prepared for operative procedures, prolonged preparatory treatment was unnecessary and inadvisable. It was not in keeping with modern surgery that surgeons should operate their patients off the street, but it was sufficient to have the average patient enter the hospital on the day preceding the operation. In weak patients and where a very severe operation was to be performed, a hypodermic of 1-30 grain of strychnine just before operation was helpful. The operative field should be shaved, thoroughly disinfected, and a sterile dressing applied the evening before the operation. Every operating room should have an experienced anesthetist, because it added to the patient's comfort and safety, and allowed the surgeon to give his undivided attention to the operation. He pointed out the many things pertaining to the operation itself which had a decided bearing on the after-treatment. The patient always thought the stitches and bandages were too tight, and it was very important that the surgeon should know that they were not so. Most stitch abscesses were caused by tight sutures, and tight bandages were the cause of untold suffering. Thirst was the greatest source of suffering after operation, and in the management of this symptom many mistakes were made. His patients all got water after operation, and they convalesced much more comfortably than those who were deprived of it. All surgeons agreed that the patient was better without food for a time after operation, for he did not suffer from hunger, and an effort to force feeding would surely disturb his stomach. Aside from opiates and mild cathartics, medicine had very little place in post-operative treatment. His patients got it only to meet definite indications. Attention should be given to the relief of pain after operation. The proper care of the bowels after an operation had much to do with the patient's comfort. In every case the question naturally arose, When shall the patient get out of bed? All were agreed that old people should get up at the very earliest period possible for reasons well understood, but there was still a great diversity of opinion as to when a younger patient should get up. Every abdominal operation was of sufficient importance to justify the patient in remaining in bed for from one to three weeks, owing to circumstances, and he was usually content to do so. There was no crying need for getting the patient out of bed the day after an abdominal operation. He was safer and more comfortable in bed for a few days at least. He recently operated upon a colleague for chronic appendicitis, who made the statement that he intended to get out of bed the day after operation; that staying in bed for a week after such a simple operation was all nonsense, to all of which the speaker readily acceded with a mental reservation. On the first day the patient quietly curled up on his side, and Dr. Moore smiled without comment. On the second day he was still in bed, and when he asked him why he was not up, he mildly suggested that he go to a warmer climate, and very emphatically stated that his viewpoint had changed.

The Appendix as a Femoral Hernia Content.—Dr. Charles S. James of Centerville, Iowa, reviewed the literature, after which he reported the case of a female, aged 77 years, who for four days had noticed a painful lump in the right groin. The patient was in usual health previously, but had noticed a small lump at this point for several years. Symptoms were negative, except that the pulse was 96 and temperature 102°. The abdomen was not distended. There was nothing noted indicating intraabdominal lesion. There was a prominent brawny swelling, three and one-half to four inches in diameter, indurated and semi-fluctuant, presenting the characteristic appearance of a suppurative gland over Poupart's ligament. There was no impulse. A diagnosis was made of a local suppurative process, with probable femoral hernia. Operation was performed at the Centerville Hospital one hour later under spinal anesthesia. The abscess cavity was dissected up with difficulty and found to extend through the femoral hernia opening as far as the appendix. A separate abdominal incision disclosed an incarcerated loop of ileum, gangrenous, and two perforations. He resected five inches of the intestine, and resorted to end-to-end anastomosis with suture. The appendix was ligated, severed, and removed with the closure of the stump in the usual manner. Both incisions were closed with continuous catgut suture. The time of the operation was one hour and a quarter. The patient was conscious, but suffered no pain throughout the operation. Convalescence was pleasant, and recovery excellent. He presented photographs and specimen.

The Association or Confusion of Appendicitis with Other diseases in the Female Pelvis.—Dr. A. E. Benjamin of Minneapolis said that any inflammatory disease within the abdomen primarily involving one organ might from continuity or contiguity result in other tissues or organs being involved. The blood supply of the abdomen and pelvis was such that infectious microrganisms might be carried from one diseased organ to another, thereby starting a similar disease in a part through which this infected blood flowed. The lymphatics might also convey disease to organs in the line of their distribution. The nerve supply of the organs of the lower abdomen and pelvis and their sympathetic relationship was such that pain might be referred to localities not affected. It was possible for more than one form of disease to exist within an abdomen simultaneously, and the symptoms to become quite complex thereby. Besides actual disease, there might exist a misplaced position of one or more organs, thereby changing the symptoms considerably in the presence of disease, or resulting in contiguous organs being affected because of this displacement. Also the misplaced position alone might cause distress, which resembled some actual form of disease. The character of the disease, the variety of each form of disease, the number of organs involved, the associated displacement of organs, the temperament, environment, and avocation of the individual sufferer were all factors to be considered in summing up the case. A careful personal history, a thorough physical examination of the individual, with the aid of chemical, bacteriological investigation, and a searching examination with all the apparatus at command, *i.e.* cystoscope, proctoscope, microscope, and *x*-ray, would clear up the majority of cases. In certain cases if no positive diagnosis could be made, there might be clear indications for operative interference to cure the disease. In complicated cases a thorough search through a proper-sized opening should be made to terminate the symptoms complained of, and a record of all findings for future reference made.

Torsion of the Omentum.—Dr. W. W. Grant of Denver, Colo., reported an interesting case of torsion of the omentum, and said that in view of the most common association of this diseased condition with hernia, it became a matter of unusual interest in this particular case as to its possible connection with hernia in earliest childhood. He was positive, from the nature and character of the adhesion, the condition of the intestine and absence of any indication of disease, past or present, of every other organ or part, that it was of long standing. It seemed possible that it could have dated from the existence of hernia in childhood without causing intestinal obstruction or torsion at an earlier date. The vomiting might have been due to a momentary obstruction from volvulus due to the adhesion and intestinal peristalsis. In the intra-abdominal cases the symptoms closely resembled those of acute appendicitis. The tenderness and dullness at an

early period covered a wider area than in appendicitis; yet, if on the right side, both subjective and objective symptoms simulated those of acute appendicitis. If hernia existed, one should especially be on guard as to the differential diagnosis.

(To be continued.)

NEW YORK PSYCHIATRICAL SOCIETY.

Stated Meeting, Held November 6, 1907.

DR. ADOLF MEYER, PRESIDENT, IN THE CHAIR.

Preliminary Report on the Significance of the Ocular Signs and Symptoms of Dementia Præcox as Observed in a Series of 115 Consecutive Cases.—Drs. H. H. TYSON and L. PIERCE CLARK presented this communication. The cases were from private practice, clinics, and the metropolitan asylums. Definite changes were invariably found. The fundus changes as seen clinically were divided into three stages, in the order of their occurrence. First stage, congestion of the discs, hyperemia, and edema, dilated veins, contracted arteries, and blurring of the edges of the discs, of varying degrees, constituting a low grade perineuritis of the optic nerve; second stage, congestion of the nasal side with temporal pallor of discs, dilated veins, and contracted arteries; third stage, pallor of discs, dilated veins, and contracted arteries, constituting partial or complete atrophy of the optic nerve. All forms of dementia præcox were under study. The more rapidly deteriorating forms showed the most marked changes. The cases embraced both users of alcohol and tobacco, and abstainers. Theoretically, the changes are probably due to a vascular toxin from liver or intestinal autoinfective origin. A vascular alteration with edema took place, resulting in disturbances of nutrition and slow degeneration of the nerve fibers. Cases in the first stage had shown fundus improvement under the usual treatment for intestinal autoinfection. Other eye symptoms found uniformly were: Enlarged pupils, negative sensory reflex, negative psychic reflex, negative Piltz reflex, diminished corneal sensibility, and concentrically contracted visual fields. No other psychosis presents similar conditions. The findings should be found useful in differential diagnosis, to a certain extent in prognosis, and possibly in the study of the pathogenesis and pathology of dementia præcox. Cases illustrative of the three stages were demonstrated to those members who used the ophthalmoscope.

Dr. C. E. ATWOOD had followed the investigations of Drs. Clark and Tyson, having seen nearly all the cases examined by them, and now looked for the changes in the optic disc and the other eye symptoms in every case of dementia præcox which came under his observation. In no case so far had he found the symptom-complex wanting. Recently, at the suggestion of Dr. Clark, he had been studying cases of infection, *e.g.* lead poisoning, quinine poisoning, and cases of typhoid fever, pneumonia, etc., in the hope of finding some similar changes in these conditions which might be of similar origin. In five men with typhoid infection averaging about twenty-six days' duration, four of whom smoked and drank, all showed haziness of the disc with some blurring of the edges and fullness of the veins. In one (the non-drinker and non-smoker) there was limitation of the fields to about 30°. In one only (of six weeks' duration) there was an appearance of central fullness (edema?), the cup not showing. In four women with typhoid fever averaging twenty-six days' duration, the discs in two cases were normal and in the other two anemic, the vessels being less full and the surface pale. In three men with pneumonia, all of whom smoked and drank moderately, the fundus in one was normal, and in the other two there was haziness of the edges of the disc with fullness of the veins, but no edema. In two post-operative septic cases, one a gangrenous appendicitis, the other an intestinal perforation, both exhibited haziness and venous enlargement but no edema. Both of these patients used alcohol and tobacco. A man with partial amblyopia from quinine poisoning who neither drank nor smoked, showed haziness, congestion, and edema of the nasal side, with fullness of the veins and pallor on the temporal side. Central scotoma was also present. The last case reported was one of infection from lead. A man, aged forty-four, born in Germany, drank beer, had slight arteriosclerosis, and had the occupation of making white lead in a factory. For seven months he had had double wrist-drop, and been under treatment in a neighboring town for this and lead colic, etc. Both discs exhibited central edema, pallor, and enlarged veins. The fields were contracted to 15° for red, 10° for green. There was central scotoma principally for red. V. = 20/30. The examination of seriously ill patients, *e.g.* with typhoid fever, etc., at Roosevelt Hospital, was facilitated through the kindness of Professor James, and made possible by the use of the electric ophthalmoscope.

Dr. WILLIAM MABON read the report of the findings in examinations of the fundi of twenty-five patients with dementia præcox and twenty-five with manic-depressive insanity at the Manhattan State Hospital. These examinations had been made by Dr. Holden, whose report was as follows: "Blin has reported in a series of observations of dementia præcox patients, a persistent congestion of the optic disc in 10 per cent, a persistent anemia in 8 per cent., and an alternating congestion and anemia in 6 per cent, with intermittent congestion or anemia in 45 per cent. more. However, I wish to say that the color of the optic disc varies within wide physiological limits and many of us do not like to speak of congestion or anemia of the disc unless the condition is pronounced and palpably abnormal. In none of these one hundred eyes examined did I find a congestion or an anemia that seemed to me significantly abnormal. The color of the disc may be said to depend largely upon the personal equation of the examiner. In the twenty-five patients with dementia præcox, the outlines of the discs were blurred more than in the average normal eye in eleven patients. In six of these eleven the large veins of the disc and retina were appreciably dilated. In the twenty-five patients with manic-depressive insanity, on the contrary, there was a blurred outline of the discs in but four patients and in but two of these were the large veins appreciably dilated. This blurring of the outline of the discs is in many cases of dementia præcox too pronounced to be considered physiological and must be regarded as pathological. It is due to cloudiness of the nerve-fiber layer of the retina and optic nerve, which in some cases seems to be caused by a cloudy swelling of the nerve fibers which can be individually made out, and in other cases perhaps to an edema of this layer without swelling of the fibers, or in other cases perhaps to both of these causes combined. In half of the cases in which the outline of the discs was blurred the veins of the retina were, as compared with the arteries, abnormally dilated. The condition may be analogous to the circulatory changes and edema found in other parts of the body in dementia præcox. In some cases it is so pronounced as to give rise to a characteristic picture, and from the examination of these twenty-five patients and of about an equal number previously examined, of which complete statistics were not kept, I should judge that the condition was to be found in about half the cases of dementia præcox and rather exceptionally, and in a less pronounced degree, in manic-depressive insanity." In view of Dr. Holden's statement that the condition was to be found in about half of the cases of dementia præcox

and exceptionally in manic-depressive insanity, it would seem advisable to make further investigations before reaching the conclusion that these conditions are of diagnostic significance.

Dr. P. C. Knapp of Boston called attention to the importance in these cases of refraction errors. In a considerable number of cases of brain disease, especially in cases of headache, he had found such a congestion of the optic disc as had been described, with blurring of its outline so great as to suggest beginning neuritis, but due, as further investigation showed, to a considerable degree of hypermetropia. It would be well to eliminate the possibility of refraction error before assuming changes in the optic disc. Dementia præcox was not the only mental disease, as suggested by Dr. Tyson, in which these changes were noted. They occurred in general paralysis in a number of cases, although they were less frequently seen than conditions of optic atrophy. He had seen a number of cases in which there was congestion of the disc and haziness of outline in which the changes were indubitably those of low-grade neuritis.

Dr. Adolf Meyer remarked that in order to prove that we are dealing with an inflammation and subsequent atrophy of the optic nerve, it would be very desirable to have sufficiently strong evidence of functional disorders of vision. In the absence of visual defect in cases of remission, etc., it remains to be shown that the appearance of the disc is not merely an incidental phenomenon of a general vasomotor difficulty.

Dr. Clark, in closing the discussion, said that in a number of cases at the Vanderbilt Clinic followed independently by Dr. Holden and by Dr. Tyson and himself, the results tallied exactly so far as the disc changes were concerned. In the report just presented Dr. Holden seemed to take it for granted that the only changes were congestion and haziness, whereas these formed only a part of a series of changes. These changes would not be noted unless the entire series were followed. Careful analyses in other types of mental disease had failed to reveal changes which could be confounded with those described. The different phases of the changes described, ranging from the congestive stage to the terminal one of general diffused atrophy of perineuritis, should be borne in mind, otherwise it was impossible to arrive at statistics. Of course there were optic changes in paresis, but this was not often to be differentiated from dementia præcox. He had made it a point to look for the physiological cupping of the disc, and if this could not be noted, to look for other features that go with dementia præcox. One hundred and fifteen cases, the number studied, would not establish any of these changes for diagnostic purposes. The work, as stated, was but a preliminary communication and must be verified by more exhaustive studies by many different observers before this eye syndrome could be finally considered as definitely established. The significance of these clinical features was tentative, and might undergo modification, but after two and a half years of investigation he was convinced that there was a characteristic toxic change going on in dementia præcox which must be recognized as a feature of the disease, possibly rendering it a somatic disorder with a mental accompaniment.

Dr. Tyson, in closing, said, with reference to errors of refraction, that it was only in high degrees that congestion of the disc was found, and that high hypermetropia was found in only one per cent. In atrophy it was only by contraction of the field and diminution of visual acuity, with cupping and pallor of the discs and contracted arteries, that the diagnosis was made; and finally in using the ocular signs and symptoms to aid in making a diagnosis, the entire eye symptom-complex should be used and not only the appearance of the fundus oculi.

The Anxiety Psychoses.—Dr. George H. Kirby read this paper. The effect of anxiety was of wide occurrence and appeared in a variety of psychoses, yet our clinical experience taught that there was a group of cases in which the anxiety appeared to stand out more or less as a fundamental symptom and not in association with additional features that would stamp the disorder as belonging with any other well recognized symptom-complex. These anxious depressions occurred mainly in the climacteric period or later in life, yet similar symptom pictures occasionally developed in earlier years. Kraepelin's recent proposal to merge the anxious depression into the manic-depression group as "mixed forms" was argued against by the author, who showed that Kraepelin was led to this change of position chiefly because he found that nearly all of the surviving cases of involution depression had terminated in recovery even after a prolonged course. This generalization exemplified to what an extreme degree the Kraepelinian statistical method might be pushed. The author's material afforded many reasons for keeping the anxious depressions apart from the manic-depressive psychoses—they appeared to arise out of a different etiology, showed important symptomatological differences, ran a different course from the manic-depressive cases, and were especially dangerous to the life of the patient. Various factors were mentioned which seemed to prepare the ground for the origin of the anxious effect, *e.g.* intoxications, organic insufficiency, advanced age, etc., and attention was drawn particularly to the great frequency with which the anxious mood arose out of prolonged worries and chronic emotional strains of various kinds. Cases were reported to demonstrate the importance of these psychogenetic elements in the development of the psychoses with anxiety. The cases studied fell into several groups, each of which seemed to have some prognostic significance. (1) Cases showing a simple form of anxiety or general uneasiness, apprehensive anticipations with or without ideas of sin. (2) A severer form showing anxiety with fear, perplexity, and allopsychic concepts. (3) Cases presenting the sensory-somatic complex, hypochondriacal trends, and feelings of unreality. (4) Cases developing with arteriosclerosis. The anxious depressions here described were not regarded as a special form of disease, but were considered rather as a type of reaction of fairly characteristic form in the evolution of which a number of factors participated; the psychogenetic features appeared to be particularly important. There seems to be a difficulty in adjustment to a situation which would naturally put the patient into an anxious frame of mind. In a smaller group of cases the physical causes seemed to be most important, and arteriosclerosis was especially apt to be accompanied by an anxious depression.

Dr. William Mabon was of the opinion that the anxieties should be kept separate from the manic-depressive group.

Dr. August Hoch of Bloomingdale said that Dreyfus tried to show that melancholia was merely a phase of manic-depressive insanity. Kraepelin agreed with him, as he stated in the introduction which he wrote to Dreyfus's book. But to do Kraepelin justice we must remember that he specially mentioned the fact of the differences in duration in the two groups of cases. While Dreyfus had made a valuable contribution in having shown that what most of us, with Kraepelin, regarded as permanent mental dilapidation, was in reality a recoverable condition; there was little gained by merely identifying the two groups of cases. There was no doubt as to a certain relationship, but there was also no doubt as to the differences, and we would have to say that these cases of melancholia were manic-depressive conditions under special conditions with special features and with certain peculiarities in course. It seemed to the speaker that we might regard the development of the anxiety and

the unreality complex in depression, in other words, those features which characterized the involution melancholia, somewhat in the light of complications, very much as we regarded complications in other diseases. By this we emphasized on the one hand the relationship and on the other hand the differences. He, therefore, quite agreed with Dr. Kirby that it was more profitable to keep the two groups separate. He was also very glad that Dr. Kirby emphasized the psychogenetic factors in the development of these cases, and he was quite sure that the work of Dr. Meyer and of Dr. Kirby in this direction was of great value, as it called attention to many facts which were clear enough when one looked for them, but which had often been singularly disregarded.

Dr. A. R. Diefendorf of Middletown, Conn., was inclined to agree with Dr. Kirby in his contention for the maintenance of the anxiety psychoses. In his own experience the melancholia of involution was not as prevalent as he had formerly believed. There were cases developing in the involutional period which showed anxiety, but were also accompanied by considerable psychomotor retardation. These cases which tended to recur should not be confounded with the anxiety psychosis, as they rightfully belonged to the manic-depressive group. He had failed to note psychogenic factors in the origin of his cases as being particularly prominent. In view of the fact that there was often a long prodromal period during which the patient was introspective, symptoms of the disease might be mistaken for psychogenic factors; that is, the patients failed to exhibit anxiety over troubles that had long existed in their lives, until they showed the first signs of the disease. With reference to the group designated by Dr. Kirby as the arteriosclerotic group, he saw no reason why they should not be considered as cases of arteriosclerotic insanity.

Dr. Charles L. Dana said that in private practice one saw many of the anxiety psychoses, though not of so severe a type as those described by Dr. Kirby. The condition undoubtedly made a clean-cut clinical picture, and to recognize it as a distinct form of melancholia was helpful in the prognosis and in the treatment. At the same time, the more he saw of melancholia the more it seemed to him that the "anxiety complex" occurred not only in the individual period, but in early life. It was his experience that nearly one-half of the cases of involutional melancholia coming on after forty or fifty gave a history of one or two attacks of "neurasthenia" years before, these often being mild psychoneuroses calling for no special attention from the psychiatrist. With reference to the psychogenic factor, he believed that the patients who developed these involutional psychoses were generally men and women of rather inferior mental caliber or persons who had worked in an environment which was too strenuous for them, and which, consciously or unconsciously, pulled them down. He could not recall any really brilliant mind that had suffered from involutional insanity. The women belonged to the type of women who had been worriers all their lives, who had had "previsions" and constant anxiety over details, and who were not fitted to carry on easily the work they were appointed to do. Melancholia in all its phases was the same thing, but occurring in different individuals it produced the differences noted. The same definite lesion occurring in one individual would produce melancholia with anxiety, in another retardation and apathy, and in still another, in addition to anxiety, there might be self-accusation or hypochondria. The differences in the clinical picture were due to the original differences in the make-up of the individual. He would represent melancholia by the term X, which meant a definite unknown lesion of the psychical apparatus, some break in association paths, perhaps; the special characters of self-reproach, depression, anxiety, retardation, would depend on the physique and character of the individual patient.

Dr. Adolf Meyer pointed out how, after all, a new standpoint, such as that of Kraepelin, of dividing all mental diseases into non-dementing and dementing processes was apt to tend to become a sort of all-embracing system with very few subdivisions. The welcome awakening of interest in the outcome of the disease had finally been pushed to the position of a logical decision, which naturally must either fit or not fit; but such division of all mental disorders would ignore many other matters which had long been thought of and could not be neglected. The fact that the outcome issue had been neglected for such a long time was no reason for making it an all-embracing issue for all decisions. To argue merely about the outcome would again lead to a great deal of guessing, and from a didactic point of view it would be better to fix the attention upon what was seen in the patient at the time of examination. It would be a much better working principle to try to recognize the concrete difficulties under which the patient labored, to examine the factors which led up to these difficulties, and to estimate the balance of the forces of the individual to meet the situation. This, in practically all cases of manic-depressive insanity, would naturally lead to the recognition of a non-dementing disorder in harmony with Kraepelin's nosology. Dreyfus's claim that the anxiety depressions were mixed conditions of manic-depressive insanity was another overstretching of a fruitful principle. As soon as one constructed mixed conditions of manic-depressive insanity, practically everything, even normal mental activity, could be included in this category. We already heard that hysteria should be included in the depressive psychoses. With regard to the psychogenic nature of the process, he was inclined to consider Dr. Dana's remarks very well to the point. Dr. Diefendorf's exception to the issue might hold for some cases, but it was absolutely undeniable that there was a larger percentage of palpable causes for a depression than in the ordinary manic-depressive insanities. Many manic-depressive conditions in the involutional period began to show anxieties. As soon as manifestations of manic-depressive features were noted one had symptoms which were of prognostic value. But the fact remained that the pure anxiety states for etiological and practical reasons formed a group worth differentiation.

Dr. Kirby, in closing, referred to Dr. Gregory's suggestion that anxiety was largely a general symptom which occurred in a number of psychoses, and recalled the fact that he had emphasized this point in his paper. Anxiety was a prominent feature in a variety of disorders, associated, however, with additional symptoms sufficient to mark the psychosis as belonging with some one of the better known types. Thus the anxious alcoholic cases mentioned by Dr. Gregory usually presented distinctive features, particularly in their evolution. He would agree with Dr. Diefendorf's suggestion concerning the grouping of the arteriosclerotic cases, but in many agitated depressions the arteriosclerotic basis was apt to be underestimated or even overlooked for a considerable time, perhaps until some definite cerebral attack occurred. When the arteriosclerotic nature of the disorder was clear, the proper group would be, of course, the organic brain diseases. He could not subscribe to Dr. Dana's conception of melancholia as a general disorder or a single disease, no matter whether it belonged to the manic-depressive or involution type of depression. The two forms of reactions, certainly when they were pure, were symptomatically and prognostically different. Provision must be made for a small number of cases which seemed to show admixtures or appeared to be transitional forms. Many cases of manic-depressive insanity showed anxiety, but here it was usually found in a fairly characteristic setting. These patients had nearly always a feeling of insufficiency or showed clearly some difficulty of thought or constraint in activity which did not appear in the anxiety psychoses described.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

ILLINOIS STATE BOARD OF HEALTH.

October 23-25, 1907.

PHYSIOLOGY.

1. Give the functions of the pneumogastric (tenth cranial) nerve.
2. Discuss blood pressure.
3. Discuss color vision.
4. Discuss the function of the kidneys.
5. Name the digestive principle or principles of the following secretions and the class or classes of foods each acts upon: Saliva, gastric juice, bile, pancreatic juice.
6. Describe metabolism.
7. What are the functions of the liver?

NEUROLOGY.

1. Briefly describe the organ of hearing.
2. Describe reflex action.
3. What are the functions of the cerebrum and of the cerebellum?

ANATOMY.

1. Give the exact location of the macula lutea or yellow spot of Sommering, in the eye.
2. Into what parts is the brain divided and of what are the convolutions of the cerebrum composed?
3. What bone commences to ossify before any other bone in the body?
4. Into what parts is the sternum divided, and how many pairs of muscles are attached to the sternum?
5. Give origin, insertion, nerve supply, and action of the subscapular muscle.
6. How are the pulmonary veins formed? Where do they terminate? What blood do they carry? Do they have valves?
7. How is the circulation carried on after the application of a ligature to the brachial artery in the upper third of the arm?
8. Name the ductless glands.
9. Name the ligaments of the hip joint.
10. What separates the tonsil from the internal carotid artery?

PRACTICE OF MEDICINE.

1. Describe the symptoms and give cause, treatment, and prognosis of Addison's disease (disease of suprarenal capsule).
2. Give the cause, diagnosis, symptoms of purulent inflammation of the bile passages (suppurative cholangitis).
3. Etiology, symptoms, signs, and treatment of a large pleural effusion.
4. What are the chief dangers and common complications of diabetes mellitus?
5. Causes, diagnosis, duration, and treatment of peripheral neuritis.
6. To what class of diseases does chorea belong? Give treatment and name any important complication.
7. Give the treatment of mucous colitis.
8. Give the prognosis and treatment in cases of aortic regurgitation with general arteriosclerosis.
9. Give treatment and prognosis in chronic contracting nephritis (interstitial).
10. Give treatment of acute endocarditis.

GYNECOLOGY.

1. State upon what grounds you would base your preference for an abdominal or a vaginal hysterectomy.
2. Describe the operation of trachelorrhaphy.
3. What do you understand by the so-called cervical erosions?
4. Stenosis of the cervix; give the etiology, symptoms, and treatment.
5. What do you understand by vicarious menstruation?
6. Describe the pathological changes in chronic ovaritis.

LARYNGOLOGY AND RHINOLOGY.

1. Give the pathology of croupous laryngitis.
2. Give the appearance, symptoms, and treatment of follicular tonsilitis.

MEDICAL JURISPRUDENCE.

1. Differentiate between cerebral apoplexy and acute alcoholism.
2. What is paranoia?

PHYSICAL DIAGNOSIS.

1. Give symptoms and prognosis of lymphadenoma.
2. Give etiology, symptoms, and prognosis of pneumothorax.
3. Give differential diagnosis between organic hemiplegia and hysteric hemiplegia.
4. Give symptoms of acute synovitis of knee joint.
5. Give differential diagnosis between squamous eczema, psoriasis, and seborrhea.

OPHTHALMOLOGY AND OTOLOGY.

1. Give complications of middle ear disease.
2. Give treatment of chronic purulent otitis media.
3. Give symptoms and treatment of iritis.

PEDIATRICS.

1. How would you treat abdominal pain in infants?
2. Give the prognosis of the following diseases in infants (taking the age factor alone in consideration), lobar pneumonia, bronchial pneumonia, and whooping cough.

OBSTETRICS.

1. Define abortion, mention the dangers, and give treatment following abortion.
2. Give symptoms of placenta prævia. What is the immediate danger of this condition?
3. What are the causes of puerperal albuminuria? What is the treatment?
4. What are the most serious complications met with in breech presentation?
5. What are the causes of nausea and vomiting in pregnancy? What is the treatment?
6. In case of hemorrhage in the third stage of labor, what is the necessary treatment?
7. What is phlegmasia alba dolens? At what time does it usually occur? What is the treatment?
8. Describe the uterus, its normal position, its relationship to other organs, and means by which it is held in place.
9. What are the diagnostic symptoms of pregnancy before the fourth month? After the fifth month?
10. What would you do in case of rupture of the uterus in the first stage of labor? In the second stage?

SURGERY.

1. Give the indications for operation in compound fracture of the thigh, and describe the operation in detail.
2. State the symptoms of fracture of the surgical neck of the humerus, and detail an approved treatment.
3. Give the early symptoms and treatment of hip-joint disease.
4. Describe the symptoms of cerebral compression and concussion, and detail the treatment for each.
5. Enumerate conditions in which you would administer ether in preference to chloroform.
6. Give early symptoms of caries of the vertebra. (Pott's disease).
7. Diagnose pyonephrosis.
8. Give treatment for retention of urine in male patient after catheterization has failed.
9. Differentiate between appendicitis (catarrhal), salpingitis, and ovaritis.
10. Name the clinical varieties of abdominal hernia.

MATERIA MEDICA AND THERAPEUTICS.

1. Name the chief classes of diuretics, and give indications for use.
2. Under what circumstances would you employ the following and why? Give dose of (a) strychnine (sulphate), (b) calomel, (c) asparagin, (d) aconite (tincture.)
3. Name several substances which *lower* blood pressure and give indications for their employment.
4. Name several substances which *raise* blood pressure and state when you would use them.
5. Give dose and action and therapeutic indications for the following: Atropine, pilocarpine.
6. Give therapeutic classification and dose of the following: (a) Potassium bromide, (b) male fern, (c) arsenious acid, and (d) gentian (co. tincture).
7. Describe the physiological action of one of the preparations of calcium used in medicine.
8. Describe the general indications for the use of liniments and name some of the drugs so employed.
9. Describe the different methods of employing mercury in syphilis.
10. Dose and use of physostigma.

PATHOLOGY.

1. Describe the process of fatty degeneration.
2. Define the terms "malignant" and "benign." What features of an abnormal growth render it abnormal?
3. Give the pathology and varieties of goiter.

4. Describe the formation of pus. What are some of the phenomena attending pus formation?
5. What are the pathological changes in emphysema of the lungs?

BACTERIOLOGY.

1. Describe the gonococcus and give the pathological changes due to gonococcic infection.
2. Describe an approved method of obtaining cultures of the diphtheretic bacillus.
3. What pathological conditions may be produced by the colon bacillus?
4. Describe toxins, antitoxins, and ptomains.
5. Define immunity. What do you understand by acquired immunity.

CHEMISTRY.

1. What is valency?
2. What characteristic reaction would ozone or hydrogen dioxide have on potassium iodide?
3. Complete this formula: $Na_2SO_4+2C+CaCO_3=$
4. What is formed by treating hydrochloric acid with manganese dioxide?
5. Complete this formula: $K_2O_3+2C=$

ETIOLOGY AND HYGIENE.

1. What is the etiology of lobar pneumonia?
2. What do you believe to be the most frequent cause of excessive secretion of HCl in the stomach?
3. What is the etiology of progressive muscular atrophy?
4. How should an epidemic of bubonic plague be managed in order to prevent the spread of the disease?
5. What measures would you recommend as the most efficient way of preventing malaria?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

ILLINOIS STATE BOARD OF HEALTH.

October 23-25, 1907.

PHYSIOLOGY.

1. *Functions of the pneumogastric nerve*: "Throughout its whole course the vagus contains both sensory and motor fibers. To summarize the many functions of this nerve . . . . it may be said that it supplies (1) *motor* influence to the pharynx and esophagus, stomach, and intestines, to the larynx, trachea, bronchi, and lungs; (2) *sensory* and, in part, (3) *vasomotor* influence, to the same regions; (4) *inhibitory* influence to the *heart;* (5) *inhibitory* afferent impulses to the *vasomotor center;* (6) *excito-secretory* to the salivary glands; (7) *excito-motor* in coughing, vomiting, etc." (Kirkes' *Physiology.*)

2. Blood pressure is the pressure on the blood due to the ventricular systole, the elasticity of the walls of the arteries, and the resistance of the capillaries.

Various conditions may contribute to cause alteration in the blood pressure; thus if the heart beats more quickly, or more vigorously, the blood pressure is raised; a similar condition occurs from the contraction of the arterioles. The reverse of each of these conditions lowers the blood pressure.

3. There are two theories of color vision, as follows: "(a) The *Young-Helmholtz theory,* which assumes that there are three fundamental sensory elements in the retina which correspond to and are stimulated primarily by the primary colors—red, green, and violet; also that each color-perceiving element is slightly stimulated by others of the spectral rays. When red rays fall upon the retina they stimulate the red-perceiving elements strongly and the green and violet very feebly. The resulting sensation is that of red. So also is it with green and violet rays. When the retina is stimulated by both red and green rays the two corresponding color-perceiving elements are strongly stimulated. The resulting color perception, however, is a combination of the two sensations and corresponds to some region of the spectrum between the red and green, according to the relative intensity of the two stimuli. When all three color-perceiving elements are stimulated at the same time this theory assumes that white light will be perceived. In a similar manner all the various color sensations are arrived at.

(b) *Hering's theory,* which is based on the assumption that there are chemical substances in the retina, photogenic substances, which are stimulated by the colors of the spectrum. It assumes three photogenic substances which are called the red-green, the yellow-blue, and the white-black substances. By this theory, when the red-green substance is stimulated by red or green light, respectively, the former produces destructive or catabolic changes, the latter constructive or anabolic changes, in the substance. When red light falls upon the retina it produces catabolism in the red-green substance, which in turn develops a nerve impulse that arouses the sensation of red. When green light, on the other hand, stimulates the retina, it produces anabolism of the red-green substance and the sensation of green. The same rule holds with the other two substances. It will be noticed that this theory is based on the complemental colors." (From Kirkes' *Physiology.*)

5.—

SECRETIONS.	DIGESTIVE PRINCIPLES.	FUNCTION.
Saliva.....	Ptyalin.	Changes starches into dextrin and sugar.
Gastric juice...	Pepsin.	Changes proteids into proteoses and peptones in an acid medium.
	A curdling ferment.	Curdles the casein of milk.
Pancreatic juice	Trypsin.	Changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; in an alkaline medium.
	Amylopsin.	Converts starches into maltose.
	Steapsin.	Emulsifies and saponifies fats.
	A curdling ferment.	Curdles the casein of milk.

Bile contains an amylolytic ferment which has a slight action on starch; it also aids in the digestion, emulsification and absorption of fats.

6. Metabolism is a name given to the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Anabolic, or constructive, and (2) catabolic, or destructive.

7. The *functions of the liver* are: (1) The secretion of bile, (2) the formation of glycogen, (3) the formation of urea and uric acid, (4) the manufacture of heat, and (5) the conversion of poisonous and harmful into inert material.

ANATOMY.

1. The macula lutea is situated on the inner surface of the retina, at the posterior pole of the eyeball, right in the center, and hence directly in the axis of the globe.

3. The clavicle commences to ossify before any other bone.

4. The sternum is divided into: (1) The manubrium, (2) the gladiolus, and (3) the ensiform or xiphoid appendix.

Nine pairs of muscles and one single muscle are attached to the sternum.

7. If the ligature is applied *above* the origin of the Superior Profunda: The Posterior Circumflex and the Subscapular, by anastomosing with the ascending branches of the Profunda, carry on the circulation.

If the ligature is applied *below* the origin of the Superior Profunda: The Superior Profunda and its branches anastomose with the recurrent branches of the Radial, Ulnar, and Interosseous, and thus carry on the circulation.

10. The tonsil is separated from the internal carotid artery by the Superior Constrictor of the Pharynx

GYNECOLOGY.

1. As to preference between vaginal and abdominal hysterectomy, the following is taken from Garrigues' *Gynecology*: "If the vaginal route is available, it should be preferred, because it entails much less shock, requires a simple after-treatment, does not leave any visible cicatrix, predisposes less to hernia, and allows the patient to resume work in shorter time. On the other hand, the vaginal route is more difficult on account of the limited space. Hemorrhage is more troublesome to check, adhesions are harder to separate, and the bladder and intestine more exposed to injury and less accessible for repair. The pelvic cavity cannot be seen so well and the abdominal not at all. If tissue is left to mortify, it emits an offensive odor."

5. *"Vicarious menstruation":* This is a flow of blood from some other organ recurring at the monthly periods and taking the place of menstruation. It may occur from the hemorrhoidal vessels, the lungs, the skin, the nails, the

mammary glands, ulcerated surfaces, and many other parts." (King's *Manual of Obstetrics.*)

MEDICAL JURISPRUDENCE.

1. In *cerebral apoplexy*: There is generally paralysis of the head and upper limbs; and in left-sided lesions there may be aphasia; the pulse is slow and full; the respirations are at first slow, regular, and stertorous, later on becoming of the Cheyne-Stokes type.

In *acute alcoholism*: The patient can generally be aroused; the coma is not, as a rule, complete; the face may be flushed; the pupils are normal or dilated; the respirations are normal in frequency, but deep; the skin is cool and moist, and the body temperature may be below normal.

2. *Paranoia* is a primary chronic form of insanity, occurring especially in degenerates, and marked by hallucinations and delusions which are systematized, *i.e.* exhibit a logical connection and sequence, so that the patient from his perverted ideas, in which he firmly believes, draws logical and coherent influences. (From Duane's *Medical Dictionary.*)

OBSTETRICS.

2. The *symptoms* of placenta prævia are: Sudden hemorrhage, accompanied by syncope, vertigo, restlessness, and feeble pulse.

The *immediate danger* is death of the mother from hemorrhage.

4. The most serious complications met with in breech presentation are: Extension of the head or of the arms over the head; compression of the umbilical cord; premature respiration or asphyxiation of the child; the child may also suffer from paralysis, hemorrhage, fracture, or dislocation.

6. "In the presence of actual hemorrhage the treatment varies according as the placenta is still within the uterus or has already been expelled. In the former case the uterus should at once be grasped through the abdominal wall and firmly kneaded. If firm contractions come on, all is well, but if the hemorrhage continues and the uterus relaxes as soon as the kneading is stopped, the placenta should be expressed by Credé's method; and if this cannot be accomplished and the patient's condition is alarming, manual removal may become necessary. . . . . If the hemorrhage does not cease after the delivery of the placenta, the cause should be ascertained and suitable treatment instituted. Tears should be located and their edges brought together by sutures. On the other hand, if the hemorrhage is the result of the retention of placental tissue, the carefully disinfected hand should be carried up into the uterus in order to seek for and remove the retained cotyledon. Under such circumstances the hand acts as a most efficient irritator, causing the uterus to contract energetically. After separating the retained portion of the placenta the hand should not be withdrawn at once, but should be allowed to recede gradually as it is forced down by the contraction of the fundus. If the hemorrhage is due to atony, the uterus should be vigorously kneaded, and from forty to sixty minims of ergot or of ergotol administered hypodermically. . . . . If these measures are not attended with the desired result, a very hot intrauterine douche of several liters of sterile salt solution should be employed. . . . . If the hemorrhage persists in spite of the douche, our only hope of controlling it is by packing the uterus tightly with sterile gauze. Before resorting to the use of the pack it is always advisable to palpate the interior of the uterus, as occasionally a portion of the placenta may have been retained, even though immediately after expulsion the organ may have apparently been entire." (Williams' *Obstetrics.*)

SURGERY.

3. *The early symptoms of hip-joint disease* are: Night cries (in a child); lameness in the morning; a slight limp; tendency to become tired on slight exertion; wasting; spasm; pain; swelling; and deformity (either real or apparent).

Treatment: In the early stages, rest in bed is indicated, with extension; also tonics, restoratives, fresh air. If necessary, the limb should be straightened and put up in plaster-of-Paris, or a brace or other mechanical appliance should be used. Intraarticular injections of iodoform have been recommended. Resection of the hip may be necessary.

4.—

CONCUSSION OF THE BRAIN.	COMPRESSION OF THE BRAIN.
Unconsciousness is incomplete; patient can be made to answer, though it may be briefly, and in simple words.	Complete unconsciousness; may scream into patient's ear at the top of the voice, but will receive no answer.
Special senses, though greatly blunted, are not abolished.	Special senses entirely suspended.
Power of movement not destroyed; if the position of a limb be changed the patient will resist or bring it immediately into the original position.	Complete or partial paralysis; in most cases hemiplegia.
Respiration is quiet and feeble.	Respiration full and noisy.
Pulse feeble, frequent, and intermittent.	Pulse full and slow, and sometimes laboring.
The stomach sickens and rejects its contents.	The stomach is insensible to any impression; no nausea or vomiting.
The feces may be discharged incontinently, as may also the urine, though not usually.	Bowels are torpid, and the bladder incapable of emptying itself, though the urine may escape by overflow.
Deglutition little impaired.	Deglutition difficult or impossible.
Pupils variable, though generally contracted; the eyelids somewhat open.	Pupils variable, though generally much dilated, and the eyelids closed.
Temperature of the body less than natural.	Temperature almost natural, a little below the normal standard.

(From Treves' *Manual of Surgery.*)

5. "*Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may be used with caution, although ether is preferable. Given a case of valvular disease that must be subjected to operation, the chances are bettered with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic." (Hare's *Practical Therapeutics.*)

6. The early symptoms of caries of the vertebra are: Pain in the back, which is made worse by movement or pressure; muscular spasm; chronic bilateral belly-ache; the patient easily tires, keeps the back rigid, and constantly rests; torticollis may be present; and the patient may support the head with his hands.

7. *Pyonephrosis* may be diagnosed by: The presence of pus in the urine, which may be constant or intermittent; some obstruction to the flow of urine; sepsis; a tumor in the loins; the use of the cystoscope and ureteral catheter will aid in the diagnosis.

8. The bladder should be punctured above the pubes.

9. In *appendicitis* the pain is of sudden onset and is localized in the right iliac fossa; there is abdominal rigidity, chiefly of the right rectus muscle; there are usually fever, nausea, vomiting, and constipation.

Salpingitis is diagnosed by: A dragging sensation in the neighborhood of the affected tube; colicky pain, which is increased on exertion or even on standing; abdominal tenderness; menstrual disorders, as amenorrhea, metrorrhagia, dysmenorrhea, menorrhagia; dyspareunia; there may be septic symptoms and peritonitis; sterility generally ensues. On examination there will be found a fullness in Douglas' pouch and one or both lateral fornices; in these latter will be felt either the tubes, distorted and possibly adherent, or a sausage-shaped tumor, which is very painful; the uterus is retroverted or retroflexed, and may be bound down by adhesions; there may be an intermittent expulsion of pus accompanied and preceded by a burning pelvic pain.

The most common cause is infection, either gonorrheal or puerperal.

In *ovaritis* the pain is not localized, but spreads to the vagina and rectum; it is usually worse just before the menstrual period, which sometimes affords relief; on vaginal examination the ovary is found to be tender.

10. The clinical varieties of abdominal hernia are: Reducible, irreducible, obstructed or incarcerated, inflamed, and strangulated.

MATERIA MEDICA AND THERAPEUTICS.

1. Diuretics are classified as: (1) Hydragogue diuretics, (2) stimulant diuretics, and (3) refrigerant diuretics.

Diuretics are employed: (1) To remove excess of fluid from the tissues, as in dropsy; (2) to dilute the urine; (3) to promote the elimination of waste products or poisonous material from the blood, and (4) to maintain the action of the kidneys.

3. Substances which *lower* blood pressure: Opium, aconite, antimony, dilute hydrocyanic acid, ipecac, chloral, chloroform, veratrum, potassium.

4. Substances which *raise* blood pressure: Alcohol, digitalis, ether, strychnine, ammonia, strophanthus, camphor, squill.

5. Atropine: *Dose,* gr. 1/160.

Action: Anodyne, mydriatic, inhibits secretions, depressant of terminations of nerves, accelerates the heart beat, causes rise in blood pressure, but toxic doses cause the blood pressure to fall, stimulates the respiratory center, but large doses depress the same; it may cause vertigo, restlessness, excitement, delirium, or mania.

Therapeutic Indications: For the relief of pain, to dilate the pupil, to check secretions, for diarrhea, for asthma, for shock and collapse, for colic of all kinds, for delirium, for epilepsy, chorea and migraine, for paralysis, for cough, in constipation, in chorea, spermatorrhea, or cystitis.

Pilocarpine: *Dose,* gr. 1/5.

Action: Stimulant of secretory nerves and of involuntary muscles, myotic, nervous depressant, sudorific.

Therapeutic Indications: In Bright's disease, uremia, and whenever a prompt diaphoresis is required.

6.—

	Therapeutic Classification.	Dose.
(*a*) Potassium bromide.	Nervous depressant.	gr. xv.
(*b*) Male fern.	Anthelmintic.	gr. lx.
(*c*) Arsenious acid.	Tonic or restorative.	gr. 1/30
(*d*) Gentian (co. tincture.)	Stomachic.	ʒj.

9. Mercury is employed in syphilis in the following ways: (1) inunction, (2) by mouth, (3) hypodermically, (4) fumigation.

10. Physostigma: *Dose,* gr. jss.

Use: "Atony the bladder and intestines; gastric and intestinal dilatation; flatulence; chronic respiratory affections; tetanus; trismus neonatorum and other spasms; epilepsy; chorea; as an antidote in strychnine poisoning. Physostigmine is used locally in ophthalmic practice." (Wilcox, *Materia Medica.*)

8. *Liniments* are used for the relief of local pain, for superficial neuralgias, as stimulants and rubefacients, to abort beginning inflammations, for rheumatism, bruises, sprains, for some local skin affections.

Some of the drugs so employed are: Aconite, ammonia, alcohol, camphor, belladonna, lime, linseed oil, cotton seed oil, chloroform, mercury, opium, soap, turpentine.

BACTERIOLOGY.

3. "The *bacillus coli communis* is associated with many diseases especially of the abdominal organs, though it is not positively known what etiological relation, if any, it bears to these affections. It has been found in peritonitis, appendicitis, cystitis, urethritis, pyelonephritis, etc. The colon bacillus has been assumed to be the cause of cholera nostras and cholera infantum. . . . Puerperal fever is not infrequently due, in part at least, to infection of the vagina or uterus by the colon bacillus. Other diseases to which this organism seems to stand occasionally in relation are endocarditis, meningitis, tropical abscess of the liver, bronchopneumonia, fetid bronchitis, amygdalitis, etc. In these diseases the *Bacillus coli communis* has been found sometimes alone, but usually associated with other pathogenic bacteria in such numbers that it must be considered a factor in the etiology of the affections, and in some cases there is reason for belief that it may be the primary cause." (*Reference Handbook of the Medical Sciences.*)

(4) *Toxins* are the poisonous products of pathogenic bacteria or of ptomaines or leucomaines.

Antitoxins are substances formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

Ptomaines are the putrefaction products of dead animal tissues or fluids.

5. *Immunity* is the power of resistance of cells and tissues to the action of pathogenic bacteria. Immunity may be either natural or acquired.

Acquired Immunity is this resistance acquired: (1) by a previous attack of the disease caused by the bacteria, or (2) by the person being made artificially insusceptible. The conditions which give immunity from the pathogenic action of bacteria are:—(1) a previous attack of the disease; (2) inoculation, with small quantities of bacteria, so as to produce a mild attack of the disease; (3) vaccination; (4) the introduction of antitoxins; (5) the introduction of the toxins of the bacteria.

CHEMISTRY.

1. Valency is the combining power of an atom of an element as compared with that of an atom of hydrogen.

2. Ozone or hydrogen dioxide decomposes solutions of potassium iodide, with liberation of iodide and formation of potassium hydroxide.

$$H_2O_2+2KI=I_2+2KOH$$
$$O_3+H_2O+2KI=I_2+2KOH+O_2$$

3. $Na_2SO_4+2C+CaCO_3=Na_2CO_3+2CO_2+CaS$.

The reactions really are:—

$$Na_2SO_4+2C=Na_2S+2CO_2$$
and $$Na_2S+CaCO_3=CaS+Na_2CO_3$$

4. Manganese chloride, chlorine, and water are formed when manganese dioxide is treated with hydrochloric acid:

$$MnO_2+4HCl=MnCl_2+Cl_2+2H_2O$$

5. $K_2O_3+2C=K_2+CO_2+CO$

ETIOLOGY AND HYGIENE.

1. Lobar pneumonia is due to the invasion of the lung by pathogenic bacteria, chiefly the *Diplococcus pneumoniæ.*

Lowered vitality, exposure to wet and cold, and alcoholism are all predisposing factors.

2. The most frequent cause of excessive secretion of HCl in the stomach is probably either (1) mental overwork or worry, or (2) alcohol or highly spiced food.

3. Progressive muscular atrophy is supposed to be due to syphilis, exposure, or overexertion.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	
Arizona*	Ancil Martin, Phoenix	Phoenix	April 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April 7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March 10
Delaware	J. H. Wilson, Dover	Dover	June 16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	April 14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April 13
Georgia	E. R. Anthony, Griffin	Atlanta	May —
Idaho	J. L. Conant, Jr., Genesee	Boise	April 7
Illinois	J. A. Egan, Springfield	Chicago	April —
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May 26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March —
Kansas	T. E. Raines, Concordia	Topeka	June 9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April 28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May 21
Maine	Wm. J. Maybury, Saco	Portland	March 17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June 9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April 7
Mississippi	J. F. Hunter, Jackson	Jackson	May 12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City / St. Louis	April
Montana*	Wm. C. Riddell, Helena	Helena	April 7
Nebraska	E. J. C. Sward, Oakland	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July 15
New Jersey	J. W. Bennett, Long Branch	Trenton	June 16
New Mexico	B. D. Black, East Las Vegas	Santa Fe	June 1
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	May 19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May —
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April 7
Ohio	Geo. H. Matson, Columbus	Columbus	June 9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	March 17
Oregon	B. E. Miller, Portland	Portland	July 7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June —
Rhode Island	G. T. Swartz, Providence	Providence	April 2
S. Carolina	W. M. Lester, Columbia	Columbia	June 9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July 8
Tennessee*	T. J. Happel, Trenton	Memphis / Nashville / Knoxville	May —
Texas	G. B. Foscue, Waco	Waco	June 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April 6
Vermont	W. Scott Nay, Underhill	Burlington	July 14
Virginia	R. S. Martin, Stuart	Richmond	June 24
Washington*	C. W. Sharples, Seattle	Seattle	July 7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	Apr 14
Wisconsin	J. V. Stevens, Jefferson	Madison	July 14
Wyoming	S. B. Miller, Laramie	Laramie	

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

South Dakota.—The Board of Medical Examiners, in its classification of diplomas, recognizes only such medical colleges as require, as a condition of admission, the equivalent at least of a standard high school education; it demands also the full four years' attendance in the medical college. The requirement of preliminary education will be raised after 1910, when there will be demanded at least one year in a college of liberal arts, or its full equivalent.

City, for the week ending February 8, 1908:

Surgical Suggestions.

Circumcision.—The following technique is recommended by Mark H. Rogers: The operation should be performed on the eighth or tenth day without anesthesia. The baby should be hungry and allowed to nurse a "sugar teat" during the operation. This latter procedure is a very great aid; a hungry infant sometimes forgetting to cry at all. All of the infant's clothes are removed except the shirt. The nurse now stands at the head handling the "sugar teat" and holding the hands. An assistant holds the feet. The foreskin is drawn well down, clamped with a slot phimosis forceps and held firmly while the foreskin is severed quickly through the slot with a sharp bistoury. I next split the dorsal skin of the penis for perhaps one-quarter or three-eighths of an inch. This prevents the possibility of a tight ring remaining behind the glans. Next I seize the mucous membrane with a very small self-locking forceps, such, for example, as oculists use for the conjunctiva. I then split the mucous membrane with a dorsal incision clear to the glans, separate the adhesions with a probe and remove smegma; then with one or two snips of the scissors remove the mucous membrane, first on one side, then on the other, cutting from before backwards. Three or four No. 1 sterilized catgut stitches are now inserted, care being taken to take up the bleeding points, and the operation is completed. Cocaine anesthesia is exceedingly dangerous for babies.—*The Dietetic and Hygienic Gazette.*

Methods Against Fleas.—L. O. Howard says the following have been recommended: Fill a soup-plate with soapsuds; in the center place a glass of water with a scum of kerosene on top; place the soup-plate on the floor in an infested room, and set fire to the kerosene at night. Fleas in the room will be attracted and will jump into the soapsuds. It is also said that houses may be rendered immune by dissolving alum in the whitewash or kalsomine applied to the interior walls, putting sheets of thick paper that have been dipped in a solution of alum under the floor matting and scattering pulverized alum in all crevices where insects might lodge or breed. Powdered alum may be sprinkled upon carpets already laid and then brushed or swept into their meshes with no injury to the carpets and with the certainty of banishment to many insect pests, including both moths and fleas. Sheets that have been soaked in alum water and then dried may profitably inclose those that are spread nearest to the sleeper.—*Science.*

Urethral Hemorrhage.—Valentine and Townsend say that in hemorrhage from the anterior urethra blood may appear at the meatus or ooze or stream therefrom or may drip after urination. This bleeding is usually not associated with pain, nor is it forcibly ejected by the detrusors, as it is in the terminal hemorrhage of posterior urethritis. In an anterior urethral bleeding the first urine usually is bloody, the second may be clear, and the last blood-tinted or clear. The treatment of anterior urethral bleeding premises removal of foreign bodies or growths if present. If the bleeding does not then spontaneously stop, rest, opium, camphor monobromate, and compression must be prescribed. The easiest and most effective compression is attained by bandaging a soft catheter along the lower surface of the penis, between the corpora cavernosa. Hemorrhage from the posterior urethra usually begins with the end of urination and follows the act. Blood may be also admixed in the last urine or drip or be forced from the urethra after urination. Posterior urethral bleeding is usually associated with and followed by pain. Hemorrhage from both urethræ most frequently occurs in peracute gonorrhea, after violent instrumentation and injudiciously employed injections and irrigations. When due to gonorrhea it must be treated by irrigations, plus rest and according to the other directions usually given.—*American Journal of Urology.*

Strangulated Hernia.—Allison says of this condition that a two-stage operation affords greater security than the theoretically more attractive procedure of primary bowel-resection and radical cure. Lavage, and persistent, low pressure, normal-salt enemata, and a moderately elevated position supplement, in the most satisfactory way, the surgical measures. If anastomosis be deemed advisable as a primary operation (we think this is rare), the lateral operation is considerably safer, and this procedure, moreover, will meet the indications more safely in a majority of those cases requiring the secondary operation after an artificial anus has been established. The post-operative dangers of ileus are many, and in strangulated hernia the hope of escaping them by delay is groundless, thus differing relatively from the usual obstructive symptoms of appendicitis.—*Journal of the Minnesota State Medical Association.*

Medical Items.

Health Report.—The following cases of **smallpox, yellow fever, cholera, and plague** have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending December 20, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alabama, Mobile	Jan. 12–26	7	..
California, Los Angeles	Jan. 11 18	3	..
San Francisco	Jan. 11–18	5	..
District of Columbia, Washington	Jan. 12–25	15	..
Georgia, Augusta	Jan. 21–28	1	Imported
Illinois, Chicago	Jan. 18–25	3	..
Springfield	Jan. 16–23	7	..
Indiana, Elkhart	Jan. 18–25	1	..
Indianapolis	Jan. 12–19	1	..
Terre Haute	Jan. 18–25	1	..
Kansas, Topeka	Jan. 18–25	3	..
Wichita	Jan. 18–25	4	..
Louisiana, New Orleans	Jan. 18–25	4	..
Kentucky, Lexington	Jan. 18–25	3	..
Michigan, Grand Rapids	Jan. 11–18	6	..
Saginaw	Jan. 11–25	36	..
Missouri, Kansas City	Jan. 11–18	2	..
St. Louis	Jan. 18–25	5	..
Montana, Butte	Jan. 4–21	5	..
		From railroad camps	
New Mexico, Albuquerque	To Jan. 26	15	..
New York, Buffalo	Jan. 18–25	1	..
Ohio, Cincinnati	Jan. 17–24	17	..
Toledo	Jan. 18–25	1	..
South Dakota, Sioux Falls	Jan. 11–18	12	..
Tennessee, Knoxville	Jan. 18–25	8	..
Nashville	Jan. 8–25	13	..
Texas, Houston	Jan. 11–18	3	..
San Antonio	Jan. 11–18	2	..
Washington, Spokane	Jan. 11–18	10	..
Tacoma	Jan. 11–18	4	..
Wisconsin, La Crosse	Jan. 18–25	5	..
Milwaukee	Jan. 11–25	3	..

SMALLPOX—FOREIGN.

Brazil, Bahia	Nov. 30–Dec. 28	103	..
Para	Dec. 28–Jan. 11	15	9
Rio de Janeiro	Dec. 22–29	30	4
Canada, Halifax	Jan. 18–25	1	..
Winnipeg	Jan. 18–25	10	..
New Brunswick—			
Albert Co.	Jan. 30	Outbreak	
China, Hankow	Dec. 14–21	1	..
Shanghai	Dec. 15–22	4	Foreign
		13, deaths;	native.
Ecuador, Guayquil	Dec. 1–31	..	8
Egypt, Cairo	Dec. 24–Jan. 7	1	2
France, Brest	Dec. 28–Jan. 11	5	..
Paris	Jan. 4–11	7	1
India, Bombay	Dec. 25–31	..	7
Italy, General	Jan. 2–9	100	..
Messina	Dec. 21–28	..	Present
Japan, Kobe	Dec. 28–Jan. 4	265	91
Yokahama	Dec. 30–Jan. 6	6	3
Java, Batavia	Dec. 7–14	3	..
Malta	Dec. 22–Jan. 11	8	..
Mexico, Aguas Calientes	Jan. 25–26	..	6
Manzanillo	Dec. 1–31	2	..
Mexico	Dec. 7–21	..	3
Monterey	Jan. 5–19	..	2
Nuevo Laredo	Jan. 28	1	..
Netherlands, Rotterdam	Jan. 4–11	2	..
Russia, Moscow	Dec. 21–Jan. 4	25	8
Odessa	Dec. 28–Jan. 11	6	6
Riga	Dec. 28–Jan. 11	6	..
St. Petersburg	Dec. 13–Jan. 4	23	9
Moscow	Oct. 26–Nov. 16	..	57
Spain, Denia	Jan. 4–11	6	2
Valencia	Jan. 5–12	28	4
Vigo	Jan. 4–11	..	Present
Turkey in Europe, Constantinople	Dec. 22–Jan 5	..	11
Turkey in Asia, Bagdad	Nov. 30–Dec. 14	60	10

YELLOW FEVER.

Brazil, Para	Dec. 28–Jan. 11	27	17
Cuba, Cienfuegos	Jan. 11–18	Present in vicinity	
Ecuador, Guayquil	Dec. 1–31	..	3
Honduras, Interior towns	Jan. 27	..	Present
Trinidad	Jan. 4–11	3	2
India, Bombay	Dec. 14–21	..	2
Cochin	Nov. 29–Dec. 6	..	9
Rangoon	Dec. 14–21	..	11
Tuticorin	Dec. 14–21	..	38
Russia, General	Dec. 11–17	55	17
Turkey in Europe, Constantinople	Jan. 10	3	..

PLAGUE.

Lazaretto	Dec. 30–Jan. 4	46	36
Arabia, Abnusasi Nivernais	Jan. 4	1	1
Djeddah	Dec. 30–Jan. 4	20	9
Medina	Dec. 25–Jan. 3	133	113
Mekka	Dec. 29–Jan. 4	421	333
Yambo	Dec. 24–Jan. 3	148	91
Brazil, Bahia	Nov. 25–Dec. 28	9	7
Rio de Janeiro	Dec. 22–29	6	1
Egypt, Alexandria	Dec. 13–25	4	3
Dimetta	Dec. 22–28	1	..
Provinces—			
Assiout	Dec. 19–30	22	15
Minieh	Dec. 17–23	1	..
India, Bombay	Dec. 24–31	..	6
Rangoon	Dec. 14–21	..	1
Japan, Nushima Island	Jan. 8	..	Present
Osaka	Dec. 28–Jan. 4	..	Incr'sing
Peru, Callao	Dec. 18–25	1	2
Catacaos	Dec. 18–25	2	1
Ferrenafe	Dec. 18–25	3	..

Medical Record

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Original Articles.

SOME NOTES ON THE ETIOLOGY, PROPHYLAXIS AND THERAPEUTICS OF LARYNGEAL TUBERCULOSIS.

INCLUDING SOME CLINICAL EXPERIMENTS WITH BIER'S CONGESTIVE HYPEREMIC TREATMENT.*

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AND

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IT goes without saying that in the short space of time allotted to us any contribution to the subject of this evening's symposium must necessarily be limited, and the field cannot be covered in its entirety. All we hope to be able to do is to bring out a discussion on a few perhaps less known points regarding the etiology, prophylaxis, and treatment of laryngeal tuberculosis and learn whether what we think we have observed and learned in our limited experience can be corroborated by the experience of the masters in laryngeal practice present here to-night.

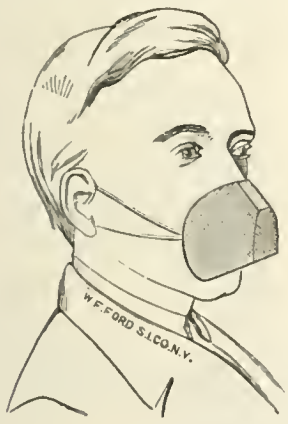

FIG. 1.—Beverley Robinson's Zinc Inhaler.

The cases of absolutely primary laryngeal tuberculosis are comparatively rare, as you all know, and we may leave them entirely out of consideration. It would seem that among those who develop secondary tuberculosis there are more male than female patients. Among the men, those who have been addicted to alcoholism are more frequently attacked by the laryngeal invasion than those who have been very moderate drinkers or total abstainers. Syphilis, too, seems to predispose to the secondary tuberculous invasion of the larynx.

Among the professions whose members, when afflicted with pulmonary tuberculosis, develop laryngeal tuberculosis more readily, we must mention teachers. This was first statistically demonstrated several years ago by Orâscu.[1] Long-standing laryngeal catarrhs, from whatever cause, render the pulmonary invalid more susceptible to a laryngeal tuberculous invasion. We have not been able to find any reliable statistics concerning trades which predispose to laryngeal tuberculosis more than to pulmonary tuberculosis in general. There is, however, no doubt in our minds that all patients who either from causes of obstruction in the upper respiratory tract, because of long-standing dry catarrh of that region, from a purely nervous cause, or because of lack of training, are in the habit of constantly irritating their throats by dry cough, are certainly more disposed to develop a laryngeal tuberculosis than those who have none of the just enumerated causes for a chronic irritating cough.

As long as the epithelium is intact it furnishes a strong protection against the entrance of the tuberculosis bacilli. But this constant irritation is very apt to produce a slight erosion. This may not always be visible to the naked eye, but will be large enough to permit the bacilli to enter into the deeper tissue.

In saying this, however, we do not wish to be understood as not admitting that a very large number of tuberculous invasions have their origin from the bacilli coming from within, pushing from the subepithelial cellular layer out in the intercellular lymph passages of the epithelium towards the periphery.

On the other hand, the statement that continued dry and irritating cough not treated or not controlled tends to develop laryngeal tuberculosis, is

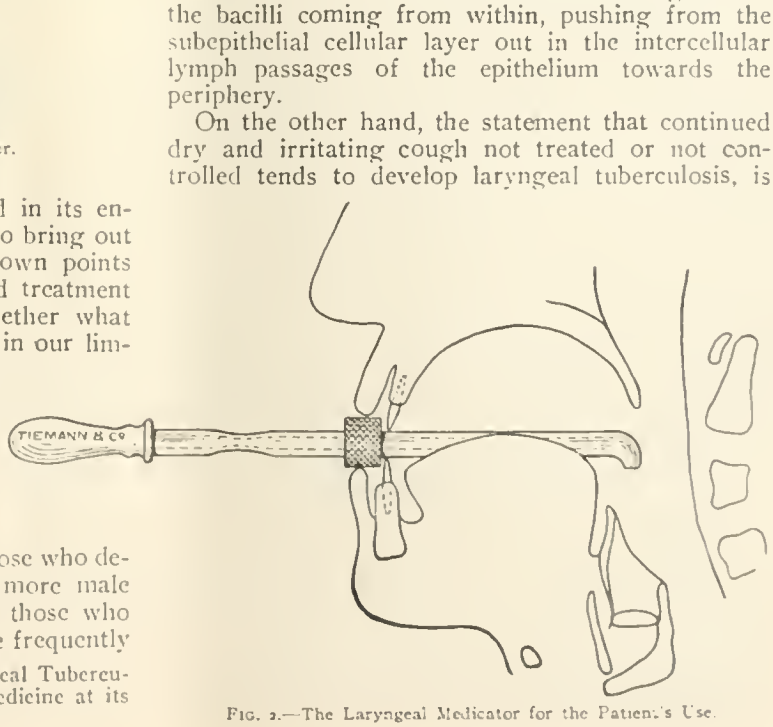

FIG. 2.—The Laryngeal Medicator for the Patient's Use.

*Contribution to the Symposium on Laryngeal Tuberculosis, read at the New York Academy of Medicine at its stated meeting, January 16, 1908.

borne out by the fact that in sanatoria where every cough without expectoration is treated, and most often successfully, either by removal of the physical cause, by proper medication, and above all by discipline, largyngeal tuberculosis develops much more rarely than among patients either not treated or not sufficiently trained in this regard.

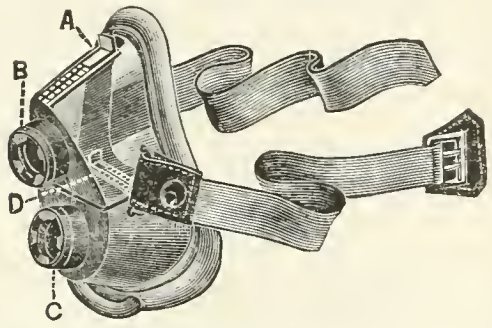

Fig. 3.—The Kuhn Suction Mask for the treatment of pulmonary and laryngeal tuberculosis.

Now, what can be done to prevent the development of the laryngeal complication, considering the little light we seem to have regarding the etiology? First of all every case of pulmonary tuberculosis should be examined for possible laryngeal complication, particularly when the patient has followed an occupation demanding the continued and excessive use of the voice. The old and recent syphilitic should be treated by vigorous specific medication; the alcoholic should be told that the continued use of liquor will aggravate his condition and be apt to produce a laryngeal tuberculosis. Laryngeal and pharyngeal catarrhs in the pulmonary patient, whether dry or moist, should be carefully treated.

When the patient is a mouth-breather the cause of this condition should be looked into and obstructions removed, however, with as limited surgical interference as at all possible, for we must bear in mind the possibility of an infection of nose and pharynx as well. All patients in danger of laryngeal tuberculosis should be enjoined to use their voice as little as possible, to avoid conversing when walking or riding against the wind, and always to breathe with the mouth closed.

No tuberculous patient should leave the office of the examining physician without being thoroughly informed of the danger to himself and to others of unnecessary coughing. By unnecessary cough we understand the so-called dry cough, which the populace considers innocent. Unless the patient holds his hand or handkerchief before his mouth, the droplets which he expels during the so-called dry cough may be bacilliferous and a drop infection may ensue. Patients should be told that this drop infection may be the means of infecting someone else. But perhaps a greater impression may be made upon the pulmonary invalid if he is told that by controlling the unnecessary cough he will lessen his chances of ever having a laryngeal complication. He will surely improve his general condition by disciplining himself, that is to say, coughing only when he has to expectorate and suppressing all useless cough, that is to say, the dry cough.

How can we aid the patient when most of his cough is purely a matter of habit and he has the willingness to discipline himself? The patient should be taught to realize that the expectoration is drainage and must come up. He should never, out of false modesty, swallow the expectoration nor suppress its coming up. To facilitate as far as practicable the ejection of the accumulated secretions of the night, it is well to advise the patient to take a hot orangeade or lemonade on retiring and again in the morning before rising. Toward morning the pillow should be removed and the patient should lie flat on the bed, the foot end of the bed somewhat raised so as to produce a modified Trendelenburg position. This is for the purpose of allowing the secretions to reach the upper pulmonary and bronchial portions and thus become more easily ejected. Such and similar positions have been devised by Jacoby and Weicker to produce hyperemia of the lungs without the aid of any other appliance. We will speak of this new method of treating tuberculosis of the respiratory organs later on, but desire to mention here that in a recent communication to Dr. Knopf Dr. Weicker admits the failure of influencing the pulmonary circulation through such positions. On the other hand, he emphasizes the value of elevating chest and extremities ("Flachliegekur" or "Hochlagung des Unterkörpers") as a means to facilitate expectoration and to diminish cough. It must be evident that the greater amount of freedom from cough thus produced not only adds to the comfort of the patient but must be conducive to cure.

A few deep respiratory movements may also be helpful in ejecting the accumulated matter and thus accomplishing a drainage, rendering the patient relatively free from cough and dyspnea during the greater part of the day. If the modified Trendelenburg position becomes too uncomfortable a small pillow may be placed under the head. If in spite of these precautions to drain the lungs of the accumulated moterial the irritating cough reappears during the day, occasional sips of liquid (milk or water) will help him to control the impulse to cough. Another good way to stop the reflex producing the irritating cough is to take a quick short inhalation at the moment the irritation is felt. This short, quick inspiratory movement has in our experience been able to do more to control the useless cough than anything else.

Fig. 4.—Patient breathing through the Kuhn Suction Mask.

The more energetic medications, such as intratrachial injections, typical cough mixtures or expectorants, or lozenges containing the ammoniamuriates and opiates, such as morphine, codein, heroin, etc., we will not discuss here. Of only one medicinal method of helping to control cough would we like to make mention, it is the use of an inhalation composed of equal parts of menthol, eucalyptus oil, and spirits of chloroform. Ten to fifteen drops placed on a Beverley Robinson Zink Inhaler and worn from 20 to 30 minutes at a time, 4 to 6

times in 24 hours, will certainly help to allay a cough in pulmonary or laryngeal tuberculosis. We take pleasure in showing you here the latest model of this very practical and useful invention (Fig. 1). When the patient cannot conveniently make use of the inhaler he may drop the prescribed quantity of the mixture on his handkerchief and thus inhale it.

As has been said in the introduction to this contribution, we do not intend to speak of the various methods in vogue for the treatment of laryngeal tuberculosis. The local application of lactic acid in various strengths has its advocates and has been decried by others as useless and too painful. The same may be said of curettage. Orthoform seems to have met with more general favor. All laryngologists agree on the absolute necessity of local anesthesia sufficient to enable the patient to eat when deglutition has become painful. Orthoform in form of an emulsion or the new hydrochlorate dissolved in plain water, seems to be particularly useful for that purpose and to be preferred to other drugs because of its relative harmlessness with good anesthetic and antiseptic properties.

The "Patients' Laryngeal Medicator," devised by Dr. Yankauer upon the suggestion of Mannheimer of New York, is an instrument to be recommended for the purpose of applying the orthoform solution particularly when the patient cannot be seen daily by the physician. This instrument is described in the Transactions of the National Association for the Study and Prevention of Tuberculosis of 1907 in the following words by Dr. Mannheimer:

"It is a long medicine-dropper, made of heavy glass, so-called barometer-tubing, bent at the lip (Fig. 2). Just in front of the rubber bulb* are two depressions which, when pointing upward and downward, indicate that the tip is turned downward. Each patient has to be shown how far to introduce the instrument, *i.e.* just behind the uvula. At that point a strip of adhesive plaster is wound around the tube. The patient introduces the filled instrument up to that point, holds it firmly between the teeth, takes a deep inspiration, and compresses the bulb. Some patients have to hold the head slightly forward, others slightly backward. I have repeatedly convinced myself that the fluid really reaches the larynx by injecting colored solutions of cocaine or emulsions and then examining with the laryngoscope. Experienced patients usually know when the medicine 'gets there.'

"The instrument can be used for watery and oily solutions. It is especially adapted for dispensary and private practice, *i.e.* for all patients who are not under constant medical supervision and care. If such patients can anesthetize their own larynx by means of orthoform or anesthesia emulsions, they relieve their distressing dysphagia and are thus enabled to feed properly, thereby fulfilling one of the first requisites in the cure of their disease.

"I have no doubt that many of you have taught your ambulatory patients to medicate their own larynx by means of sprays or powder-blowers, but this instrument has the advantage of being simple, clean, effective, and cheap. It costs 25 cents. It is made by Tiemann & Co., and called 'the patient's laryngeal medicator.'"

Because of the painfulness of laryngeal tuberculosis we should do everything we can to render the patient comfortable, and for this reason we recommend the use of this tube and the use of the orthoform because it is safe for the patient to use it himself and he can relieve himself quickly of often excruciating pains. When desirable the orthoform may be mixed with iodoform in equal proportions and with the aid of the yolk of an egg a suitable emulsion made.

We cannot offer anything new regarding the climatology in laryngeal tuberculosis. Some patients seem to do particularly well in warm and moist climates; not all are benefited by high altitudes; however, pure air, sunshine, and absence of strong winds seems favorable to the laryngeal tuberculous invalid, particularly when such favorable climatic conditions can be combined with a careful local and constitutional treatment.

In far advanced cases of laryngeal tuberculosis, unless the patient himself insists on going away from home, it would seem cruel and useless to add banishment and nostalgia to his suffering.

In prescribing the outdoor treatment in cold weather for a pulmonary invalid with considerable laryngeal involvement the same humane consideration should guide us. Unless he feels better outdoors and likes the cold we should not insist upon his taking the outdoor treatment in cold or unpleasant weather.

Laryngeal cases, in the earlier stages with relatively little pulmonary involvement, are often benefited by a change to a moderately high or to a warm moist climate with between 500 to 1,500 feet of altitude, particularly when there is a chronic feeling of dryness in the throat. When there is a tendency to moist catarrh, even the very dry and hot climates, provided dust storms are not frequent are often beneficial.[2]

Sunlight alone has been used as a therapeutic agent in laryngeal tuberculosis by Sorgo of Alland, who had treated a number of cases and claimed good results by using a reflector and by applying the reflected rays directly to the lesions.[3] Whatever doubt we may have as to the local effect of the rays of the sun on the laryngeal tuberculous lesions, so much is certain that this class of patients feel better when the sun shines than in stormy and cloudy weather, and the recent attempt of some authorities to decry sunlight and declare it dangerous in phthisiotherapy may be considered, to say the least, as unwise.

There is no doubt that, in tropical countries, the newly arrived person who has been born and raised in northern climes, be he blond or brunette, unless he leads an exceedingly sober and careful life, and protects himself against the strong actinic rays and the intense heat of midday, is bound to suffer and become more easily the victim of endemic and epidemic diseases. But to apply this rule to our temperate zones and northern climates is fallacious, unscientific, and even dangerous. It has been demonstrated again and again that in our moderate zones the patients in the general hospitals do best in those wards which have the most exposure to the all-beneficent sun. The celebrated health resort, Davos Platz, in Switzerland, to which thousands of consumptives flock every year, owes its reputation mainly to the great amount of sunshine characteristic of that region. And may we not say the same of our equally world-famous climates of Colorado, New Mexico, Southern California and some of our Southern States, where the number of sunny days each year amounts often to three hundred and more? On the other hand, recent reports show that in England the mortality from tuberculosis is highest in places where weather statistics show the

*We have since experimented with this excellent little instrument, but found the bulb too small to express any emulsion with sufficient force. To enlarge the bulb to twice its size would, in our opinion, enhance the value of the instrument. We communicated this suggestion to the inventors and they have come to the same conclusion as we have. They will see to it that a larger bulb will be attached to the instruments hereafter manufactured

greatest number of rainy, windy and cloudy days,[4] and here in New York it has been demonstrated that there is more sickness from pulmonary and bronchitic disease on the north side of the street than on the south, where the house gest more sunlight.

Sanatoria with good hygienic environment seem to be best adapted for the management of laryngeal tuberculosis. Unfortunately, because of the unfavorable prognosis in the majority of such cases, sanatoria do not like to take patients with laryngeal complications. It would almost seem that there is a need of separate sanatoria which will make the treatment of laryngeal tuberculosis a specialty.

Before speaking of our clinical experiment with Kuhn's mask, we may be permitted to say one word on diet. Neither solid nor absolutely liquid foods are indicated when deglutition is painful. A bland diet composed of gruel, toast of whole wheat bread soaked in milk, raw scraped beef with little or no seasoning, and soft boiled eggs is perhaps the best and most nutritious, and one which causes least discomfort in deglutition.

The claims of good results obtained from Bier's hyperemic treatment in pulmonary tuberculosis induced us recently to make a series of experiments in laryngeal tuberculosis with a view of determining whether or not laryngeal tuberculosis could likewise be benefited by Bier's treatment. As is known, Bier's treatment rests upon the theory that an artificial hyperemia can cure a tuberculous process. The truth of this has been demonstrated by the wonderful results of Bier's hyperemic treatment in osseous and articular tuberculosis.[5]

Why a hyperemia should cure tuberculosis is difficult to explain. It may be due to an increased phagocytosis or, if we apply Ehrlich's theory, it may be due to an increase of antibodies. If we are believers in opsonins the improvement may seem due to an increased opsonic index. Perhaps it may also be due simply to the increased carbonic acid gas we have in a venous stasis, and this gas may be deleterious to the growth of the bacilli.

Dr. Willy Meyer, in his recent article "Kuhn's Lung Suction Mask for the Hyperemic Treatment (Bier) of Pulmonary Tuberculosis,"[6] describes a mask used to attain the same end for tuberculosis of the respiratory organs in the following words:

"The construction of Kuhn's mask is based on Bier's original idea of having the patient inhale in a slightly obstructed manner, so as to produce negative pressure in the thoracic cavity. We know that the respiratory distention and contraction of the thorax is automatic, a physiological act. Now, if we prevent the easy filling with air of the elastic lung tissue, as is the case under ordinary circumstances, when the thorax expands during the act of inspiration, the air within the lungs is rarefied and the blood aspirated. In other words, we produce an artificial hyperemia of the lungs by suction.

"It was evident, however, that it would be an advantage to be able to increase or decrease this hyperemia by degrees, and it was with this point in view that Kuhn proceeded to construct his lung suction mask. Made of thin celluloid, the mask has the shape of the mouthpiece we use to cover the patient's face with when administering one of the volatile drugs for general anesthesia (Figs. 3 and 4). The edges here, too, are protected by rubber tubing which can be filled with air. The mask is divided transversely by means of a celllloid wall, which rests with its border on the upper lip. This border also is provided with an inflatable pad. In this way we have two separate cavities, one for the nose and one for the mouth, there being no communication except by a slide covering a narrow slit in the transverse dividing wall. This slit is opened only if nasal respiration is temporarily or permanently interfered with. The mask is placed over nose and mouth of the patient and held in place by two elastic straps passing below the ears and fastened in the back by means of a buckle. Another slide, attached to the outer side of the nasal section of the mask, controls the degree of obstruction desired. (Fig. 3—A). This is the principal part of the device, inasmuch as by it we regulate at will and by degrees the amount of obstruction to the passage of air into the alveoli of the lungs. It has a scale of 6°, and covers a slit somewhat less than 1-16 of an inch (1 millimeter) wide and somewhat longer than the one in the partition membrane between mouth and nose cavity. Two caps, that can be screwed off, each embracing a small celluloid plate, form the valve for expiration, same as we find this in the ordinary narcosis inhalers. (Figs. 3—B and C).

"If the regulating slide be entirely open, the patient can inhale quite some air, but naturally never as much as without the mask.

"Inspiration is done through the nose and expiration either through the mouth alone or through both mouth and nose.

"Of course, if desired, the valve over the mouth section of the mask could be entirely removed. But this should be done in the case of intelligent patients only, as then special attention has to be paid to the act of respiration. During sleep this valve, too, should always be in place."

The results of any new treatment in a pure pulmonary tuberculosis are always deceptive. The reason for this is to be found in the uncertainty of physical findings at different times of the examination and the psychical element of the patient which always enters in the appreciation of the value of any new therapeutic agent. We thought that it would be an interesting evidence of a therapeutic effect of Bier's treatment if we could apply Kuhn's mask after a careful examination of the throat, note the findings which the laryngoscope revealed, and then examine again the throat after the mask has been used for from 15 to 20 minutes.

The following are the results: Six cases of laryngeal tuberculosis were selected from the various wards in our service at the Riverside Sanatorium. On reexamination after the first application of the mask we were pleased to note that a marked congestion was produced in all the mucous membranes of the upper respiratory tract. This was especially noticeable in the membrane of the soft palate and epiglottis due to the usual pale character of the membrane in these parts. The anemic membrane, characteristic of such cases, was covered after treatment with a network of small dilated venulæ proving conclusively the utility of the mask to produce the desired venous hyperemia.

With this encouraging beginning the masks were worn fifteen minutes three times daily, and examinations made from time to time to discover any change in the pathological condition of the larynx. After a few days the congestion of the membranes became more or less permanent, lasting over from one treatment to another, the mucous membranes losing their characteristic pallor.

The cases ranged from the mildest with only slight infiltration of the cords and arytenoids with impairment of motion, to the severest type with extensive ulceration, and in one case perichondritis and external abscess.

During the application of the mask very little dis-

comfort was experienced by the patients, consisting of slight dizziness and feeling of oppression. This became less as the patients became accustomed to the treatment. In one case complicated with chronic otitis media with tinnitus, the dizziness became so severe as to interfere with the regularity of the treatment. This was especially true in heavy, stormy weather.

During the two months of treatment all the cases but one showed some improvement. In the cases of infiltration without ulceration the improvement was mainly symptomatic, the hoarseness and discomfort being relieved without any noticeable change in pathological lesion. Where ulceration existed the ulcers showed healthier, redder granulations covered by far less secretion than formerly.

The one exception to any improvement was the case spoken of with chronic otitis media and severe perichondritis. With him no relief was experienced that could be ascribed to the Kuhn mask.

During the first month all other local treatment of the larynx was suspended that we might not be doubtful as to the cause of any results obtained. Later, the eucalyptol, menthol, and chloroform inhalations referred to above were added with marked benefit to those cases suffering from irritable cough.

The present series of cases and the time of treatment have been too short to form a positive opinion as to its lasting value, but we have been able to demonstrate that the Kuhn mask is a practical means of applying the Bier treatment to the upper respiratory tract, and that under its influence local anemia has disappeared, symptoms improved and ulceration taken on a more healthy character.

This meager report does not mean, of course, that any cure has been discovered. Our only aim in making a preliminary report of these clinical experiments is to call your attention to one more of the means we have at our disposal to give relief in an affliction which must be considered as perhaps the most painful which the human flesh is heir to.

Let us hope that with the aid of the earliest possible diagnosis, proper hygiene, timely general sanatorium treatment in special institutions or at home, the utilization of all that has proved to be good in the line of local treatment, be it old or be it of recent date, and the judicious application of this Bier-Kuhn method, we may be able still more to diminish the horrible sufferings of our laryngeal tuberculous patients, and where we can not cure we may at least render the patient free from pain, make him comfortable, and prolong his life.

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URTICARIA.*

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By urticaria we understand a disease chiefly affecting the skin and especially characterized by the production of certain peculiar lesions known as wheals. The production of wheals, or urtication as it has been called, occurs either artificially as the result of contact or penetration of the skin with certain irritants, such as the nettle or the hair of certain caterpillars, and the bites or stings of various insects, as well as spontaneously through certain derangements of the cutaneous economy. In both instances the lesion is practically the same, viz., the wheals. This essential feature consists of a circumscribed elevation which at its fully developed stage exhibits a striking pallor or waxy whiteness, without other change of the surface, and is invariably accompanied with intense itching. In most cases the process is a comparatively evanescent one, developing rather suddenly, beginning with an erythema, from the surface of which, after a short lapse of time, arises the wheal. Of the mechanism of its production our knowledge is somewhat vague. We know that there is a localized edema which accounts for the elevation, together with superficial ischemia. These conditions, together with the associated hyperemia, indicate some special process affecting the blood-vessels, and by inference also the cutaneous nerves.

It is the general opinion that both angiospasm and angioparesis have important roles to play in this connection. That a spastic condition constitutes an important factor in the process is partly evidenced by the behavior of the arrectores pilorum, which in most cases betray their violent contraction in the production of well-marked cutis anserina. This is especially well marked before the wheals have fully developed, and also in that form of urticaria known as dermographism. Here, perhaps, we may seek a plausible explanation of the symptoms of itching which the agitation of these little muscles might reasonably account for. (Bronson, "The Etiology of Itching." MEDICAL RECORD, Oct. 24, 1891.)

When urtication occurs spontaneously and becomes the disease urticaria, its cutaneous manifestations assume a variety of aspects and may be associated with a great variety of general conditions. All of these phenomena, as also those arising from external irritation, possess one characteristic in common. That is, there must be a peculiar susceptibility or predisposition on the part of the individual affected. What will cause urtication in one individual will not in another. In the urticarial subject the vasomotor nerves are in a condition such that any unusual irritation will cause a spasm of the vasoconstrictors. Whether underlying this there is a state of chronic toxemia, or whether a special toxin is produced at the time of an attack, we cannot say. In some cases it seems to be a pure neurosis, in others an autointoxication. Several years ago I saw a case where the exposure of the body to a cold draft of air or slapping the skin with a towel dipped in cold water was sufficient to cause an eruption of wheals. It is a common observation that certain persons are immune to the discomforts ordinarily felt from the bites of insects, and while the majority of people can partake of food stuffs and drugs with impunity as far as urticaria is concerned, there are others who can-

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not eat certain articles of food or take certain drugs without a very great probability of an attack of urticaria following the ingestion of these substances. I say probability, for the susceptibility of urticarial subjects to an outbreak varies in the individual, and what at one time may cause an attack of urticaria, may at others give rise to no untoward effects at all. While this is doubtless more or less true of the acute toxic variety of the disease, it is more especially so in the recurrent or so-called chronic form of urticaria.

The emotional or psychic causes of urticaria, such as grief, fright, or fatigue, usually act by their inhibitory effect on the process of digestion, and the patient evidently suffers from the same toxemia that the ingestion of certain foodstuffs may give rise to. But in one case of chronic urticaria, I have witnessed a slight outbreak, following an outburst of grief and indignation late at night, several hours after the ingestion of food and some time after the process of digestion must have been completed. Here it would seem that this patient was in a state of chronic toxemia and only needed some nervous irritation to precipitate an attack.

No specifically pathological condition of the blood has been observed in urticarial subjects, and the only pathological condition of the urine noted is a great excess of indican following the attack.

Itching and the forming of wheals are the constant symptoms of urticaria. The wheals may be few and scattered, or be extremely numerous and coalesce, forming large edematous masses. In one case I have observed an eruption so violent that within twenty minutes after the appearance of the first erythematous spot, the edema of the entire surface was so great, not only of the trunk and limbs but of the neck and head, that the patient looked as if roughly cast in wax. There may be gastric and abdominal pain, nausea, vomiting, and purging. Sometimes there is agonizing pain in the presternal region. Faintness going on to syncope accompanies some attacks, and is especially apt to follow the vomiting. When vomiting or fainting occurs, the eruption promptly disappears and the attack usually abruptly terminates. In the severe cases there may be an edema of the membranes of the nose, mouth, throat, and larynx, and the appalling symptom of suffocation may supervene. In angioneurotic edema, which is certainly closely allied to urticaria, a few fatal terminations from the involvement of the larynx and glottis have been recorded. I can find no such record for urticaria proper. In one case that I have seen, the edema of the glottis came on very suddenly, the patient struggled for breath for a few moments, and then became unconscious. But the moment the patient lost consciousness, the lesions on the skin disappeared, and with them the edema of the glottis subsided, and the patient was soon breathing naturally again, although hoarse for some hours after. 1/100 grain of nitroglycerin given hypodermically about 10 minutes before the patient became unconscious, may have had something to do with the favorable outcome, but my impression is that the syncope had more to do with the disappearance of the edema than had the nitroglycerine.

The same thing was observed in this patient during another attack by another physician, but at that time the patient did not become wholly unconscious, the edema disappearing with the relaxation due to vomiting.

In considering the treatment of urticaria certain ideas are suggested to us by a study of the pathology and by its symptomatology and course, especially of those cases of an acute, fulminating character. As we have already seen in these cases there is a spastic condition of the peripheral nerves and blood-vessels, probably due to a toxemia caused by the action of some irritant on the digestive organs. This is followed by the production of wheals and pains resembling those of angina pectoris. If a condition of syncope supervenes, the symptoms due to the angiospasm disappear. If vomiting and purging take place, there is not only a relief of the spastic condition, but more or less of the toxin is eliminated and the seat of the production of the toxin, the alimentary tract, is cleared out and the attack usually comes to an end.

The most useful drug I have found in combating urticaria, is creosote. Why its action is superior to that of the other antiseptics of the aromatic series, or of the so-called intestinal antiseptics, I am unable to state. It may be due to its greater volatility and therefore penetrability than the other members of this group, causing it to enter into less stable combination with proteid. As an intestinal antiseptic, as we understand the term, creosote does not rank high, so its action seems to be specific in regard to the special toxin which is the direct cause of urticaria when it is the expression of some internal disorder. Repeatedly have I seen cases of urticaria which had resisted the well-known methods of treatment clear up completely after the exhibition of a few doses of creosote. One case in particular I have in mind, that of a young lady who had had repeated attacks of urticaria hæmorrhagica extending over several years. She had run the gamut of most of the tried remedies and was thoroughly discouraged. During one of the attacks I put her on small repeated doses of creosote, and in two days all signs of urticaria had disappeared except the staining of the skin at the site of the hemorrhagic wheals. The creosote was continued after meals for eight or ten days longer and then discontinued; and for the two years following, while the patient was under my observation, there was no return of urticaria.

In acute toxic cases, if they be seen early, before the eruption is fully developed, the administration of creosote may greatly modify or even abort an attack. Four minims in elastic capsules with 2 minims in enteric pill should be given for an initial dose, followed every 15 or 20 minutes with 2 minims in capsule until an effect is produced.

In the recurrent or chronic forms of urticaria creosote may lessen the frequency of attacks or cause them to cease entirely as in the case cited. In this condition I have been in the habit of giving it after each meal and before retiring, from 2 to 4 minims in elastic capsule and 4 minims in enteric pill. One case that I have had under observation for some nine years has been pursuing this course for the past five years, varying the dose slightly and omitting it after meals for different periods, and whereas before beginning the creosote the attacks were of alarming frequency, now the patient will sometimes go for weeks or months without an outbreak. Failures, of course, are met with, just as in the treatment of malaria with quinine or rheumatism with the salicylates. In these cases salicylate of sodium is often valuable, its action as an antiseptic being less than that of creosote, but as has been shown by plethysmographic measurements the vessels of the skin are dilated, probably due to an excitation of the vasodilator centers in the medulla (Cushny), and its favorable action may be explained on this ground.

Salol is very useful, being decomposed in the in-

testine into salicylic and carbolic acids, and I have found it a valuable succedaneum to creosote in a stubborn case of urticaria (the last one mentioned), given in 5-grain doses with 5 minims of castor oil in capsule after each meal.

Frequently in violent outbreaks of urticaria, we must act quickly and energetically to relieve the symptoms, and our resources may be tried to the utmost. In a number of such attacks I have seen an emetic give prompt relief. Turpeth mineral, 5 grains, mixed in a little water, acted most satisfactorily. In the relaxation accompanying the act of vomiting, the bowels usually acted and then the purpose of clearing out the alimentary tract was fully accomplished. In one case, not having an emetic to hand, I gave a high rectal enema with gratifying results, the evacuation of the bowels being accompanied by vomiting and a fairly prompt subsidence of the edema.

When emesis fails to relieve the condition, or when it is contraindicated from any cause, recourse must be had to drugs which act as antispasmodics and vascular dilators. Atropine and nitroglycerin are the most useful for this purpose. Atropine has been recommended, to be given hypodermically, beginning with 1/150 of a grain and increasing the amount cautiously. My own experience has been that it is better to give one large dose 4/150 of a grain hypodermically, and I have had extremely good results in giving it in this amount. The dose has not had to be repeated, and it has been followed by a prompt subsidence of the symptoms. Only once have I seen any untoward results follow the administration of this amount of atropine, and then it was limited to a mild delirium which lasted for not more than half an hour. Nitroglycerin, 1/100 of a grain given hypodermically, will often act promptly, and the dose may be frequently repeated with safety.

Amyl nitrite, by inhalation, is especially valuable in those cases where there is much edema about the face and neck. It is peculiar in its action, relieving the spasms only in the head, neck, and upper part of the chest, and with its administration I have seen the eruption over those areas disappear as if by magic. It should prove extremely useful in those distressing cases where there is an edema of the tongue, pharynx, or glottis. In this condition a most useful adjunct to treatment is adrenalin chloride. This applied to the mucous membrane of the lips will cause the edema to subside promptly, showing that with the recurrence of edema the spastic condition in that particular locality has ceased. I have used it in an atomizer where there was an edema of the membranes of the nose, and of the tongue and pharynx, and its quick action in reducing the edema of these parts has been almost magical.

On the theory that the eruption might be controlled by the administration of the suprarenal gland substance itself, I administered it in two cases during an attack. It had absolutely no effect on the eruption, but in both cases caused a most agonizing abdominal pain, and in one of these cases, when it was given between attacks, the same abdominal pain followed its administration, succeeded by a violent outburst of urticaria. This untoward effect was probably due to the adrenalin increasing to a marked degree, a pre-existing spastic condition of the vasomotors.

The inhalation of chloroform, to the degree when it would cause general relaxation, has been suggested as an ideal way of aborting or relieving an attack, but circulatory failure has at times seemed so imminent I have not had the courage to give it a trial.

Itching, which is such a distressing concomitant to urticaria, frequently demands relief. For this purpose dilute vinegar, and lotions containing carbolic acid, resorcin, or thymol are useful. One of the most effective applications I have used is composed of chloral, camphor, and chloroform of each one dram in alcohol to make one ounce.

Menthol can seldom be borne, owing to the sensation of cold it produces. With warm alkaline baths I have had no success, perhaps owing to the fact that sufficient care was not taken to protect the patient from chill after the bath.

It is hardly necessary to add that in treating a case of urticaria the cause of the disease, both direct and remote, should be sought for and removed if possible, or any depraved state of the system corrected.

CYSTITIS IN WOMEN.

WITH REPORT OF FORTY-FIVE CASES, STUDIED CYSTOSCOPICALLY AND SOME MODIFICATIONS OF TREATMENT.

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THE modern treatment of cystitis is the product of recent years; its development has depended upon the improvement in the structure of the cystoscope and the increase in skill and knowledge of its use. Before the interior of the bladder could be inspected and the pathological lesion observed, treatment of such conditions had to be, of necessity, empirical and indefinite. But with modern methods of diagnosis, direct inspection of the site of inflammation and visual knowledge of the effects of treatment, it is possible to control and to cure affections of the bladder in a direct and efficient manner. The ease with which the bladder may be inspected and the small amount of harm and discomfort of the cystoscopic examination in skilled hands are potent factors in the diagnosis, treatment, and cure of cystitis in women. It is thus possible to make an exact diagnosis of the bladder lesion, and appropriate treatment may be directed towards it.

If, however, no cystoscopic examination is made in cases of cystitis, it is impossible to localize the site of inflammation, acquire any knowledge of its size and location, or eliminate grave and dangerous affections of the kidney and adjacent organs. Many bladder and kidney lesions may produce mild symptoms, yet be of such a momentous character as to make their early diagnosis a necessity for the welfare of the patient.

It is possible with the cystoscope to detect the presence of inflammation by the appearance of the bladder; ulcers and tumors of the bladder wall are readily seen and treated, and the source of blood in the urine, that most important symptom in genito-urinary conditions, may be definitely located and appropriately treated. An intelligent prognosis cannot be reached without a definite diagnosis of the bladder and kidney condition, and this cannot be done without visual inspection of the bladder wall and the ureteral orifices; it is often necessary in addition to catheterize the ureters and obtain urine from each kidney for examination. None of

the newer methods of urine examinations, as cryoscopy, estimation of functional capacity of the kidney by methylene blue, etc., can take the place of ureteral catheterization in the study of surgical lesions of the kidney, as none of them is exact and accurate. The instruments for segregation of the urine by means of the formation of an artificial partition in the bladder, as by Luys'[1] segregator, or by means of pressure upon the ureters through the abdominal wall as by Heusner's[2] separator, are not to be depended upon for accurate division of the urines from the kidney, and have the additional fault that the resultant urine may suffer contamination from the bladder wall.

The cause and progress of the bladder disease and the effect of treatment upon the condition may be minutely followed by the cystoscope. Treatment may be changed to suit conditions that may arise and harmful procedures may be eliminated.

The ease and painlessness of cystoscopic examination eliminates the main argument against its use. In none of the following forty-five cases of bladder disease was the urethra or bladder cocainized. This includes several hundred examinations, as it was the custom to note the bladder condition cystoscopically at each treatment. In several cases, on account of the painful character of the lesion and the marked alteration in the bladder wall, opium suppositories were required to control the pains following bladder distention with the irrigating fluid. For inspection of the bladder with the examining cystoscope no dilatation of the urethra is necessary, save occasionally in virgins with a very small meatus. The instrument used for catheterization of the ureters occasionally requires slight dilatation of the urethra.

Cystoscopic examination should cause little or no pain, and no ill effects to the patient or to the patient's condition. No injury or ill effects from the examination alone were noted in any of these cases.

The instruments may be sterilized in formalin vapor or by scrubbing with tincture of green soap and placing in carbolic acid solutions. The ureteral catheters may be sterilized in formalin vapor or, as is the writer's custom, boiled in a saturated solution of common salt in water. Another useful solution for boiling catheters is saturated solution of ammonium sulphate in water; but this, while slightly prolonging the life of the catheters, causes crystals of the salt to be deposited on them during cooling. The common salt solution is convenient and efficient, one catheter of the writer having been boiled in this way eighteen times, before the silk and gum tissue became markedly injured.

The cystoscopic instruments used were a simple, indirect examining cystoscope of the Nitze type, the Tilden Brown catheterizing cystoscope, and the Kelly cystoscope as modified by Cullen. Other instruments were used experimentally, but the above were those constantly in use.

For diagnostic and catheterizing purposes water dilatation of the bladder was the rule. The patient was in the lithotomy position upon a gynecological examining table. If it was necessary to examine the bladder with the Kelly instrument for applications and other purposes, the hips were elevated, or the patient put into the knee-chest position, in order to get air inflation of the bladder.

The cases noted in this paper were all examined in a public clinic (Vanderbilt Clinic), and the fact that they returned for treatment is evidence of the lack of discomfort that the examination caused. The writer is indebted to Drs. Healy, Proben, Roff, Stone, and Meeker for referring these cases. The following abstracts of the histories of forty-five cases note the more important conditions found at cystoscopic examinations. The discussion of the cases follows their citation. Frequency of urination was the most common symptom which caused a cystoscopic examination to be made. This frequency in the histories is estimated in amount by the number of times a woman has to arise at night to urinate.

Clinic No. 44,529.—Frequency; pain; urgency. No return urgency. Right cystic ovary. Cystoscopic examination. Sclerotic stricture of the urethra. Chronic atrophic cystitis. Chronic hypertrophic trigonitis.

Clinic No. 46,270.—Frequency 3 to 4 times at night. Cystoscopic examination. Atrophic cystitis. Hyperemia of trigone. Diverticula of bladder.

Clinic No. 46,067.—Frequency 3-4. Cystoscopic examination. Calculous urethra. Loss of sphincter control. Acute hyperemic cystitis.

Clinic No. 43,833.—Frequency 1-2; pain; urgency. Symptoms date from operation of abdominal suspension for retroversion two years ago. Pain on left side. Cystoscopic examination. Bladder divided into two sacs by partition, which occupies the mid-line and corresponds to suspension ligament. Chronic hypertrophic trigonitis. Atrophic cystitis.

Clinic No. 44,995.—Frequency 3-5; pain; urgency. Uterus retroverted. Cystoscopic examination. Acute hyperemic trigonitis. Benefited by replacement of the uterus without further treatment and cured by bladder treatment.

Clinic No. 45,498.—Frequency; bearing-down pain; burning; urgency for two years. Left pyosalpinx. Endocervicitis and cervical enlargement. Cystoscopic examination. Acute purulent cystitis with marked hyperemia and edema of mucous membrane.

Clinic No. 45,500.—Frequency; burning and painful urination for three years, since birth of child. Frequency worse for last two months. Cystoscopic examination. Chronic hypertrophic trigonitis, with marked epithelial proliferation and definite reddening and localized inflammation of right ureteral orifice. Catheterization of kidney showed no tubercle in kidney urine.

Clinic No. 45,465.—Pain in back. Frequency for four years. No burning or urgency for last three years. Cystoscopic examination. Chronic atrophic trigonitis.

Clinic No. 45,499.—Pain in hypogastrium. Frequency 1-3; slight urgency. Left cystic ovary. Lactation atrophy of uterus. Endocervicitis and enlargement of cervix. Cystoscopic examination. Chronic atrophic cystitis. Chronic congestive trigonitis.

Clinic No. 45,379.—Slight. burning. Frequency 1-3. Marked frequency in day. Return urgency. Endocervicitis. and cervical enlargement. Cystoscopic examination. Chronic congestive cystitis. Chronic hyperemic trigonitis. Ureteral orifices normal.

Clinic No. 45,310.—Frequency, pain and urgency for six months. Has had frequency occasionally during last three years. Fibroma of cervix. Cystoscopic examination. Chronic atrophic cystitis, which is most marked where the cervical tumor bulges into the bladder. Acute hyperemic trigonitis. Both ureteral orifices inflamed and reddened. Catheterization of ureters showed kidney urine normal.

Clinic No. 43,919.—Frequency 2-4; urgency; moderate pain for six months. Bilateral salpingitis. Endocervicitis. Cystoscopic examination. Marked congestive hypertrophic cystitis. Large hypertrophied cervix uteri bulges into the bladder and keeps right ureteral orifice open.

Clinic No. 41,600.—Frequency and pain for one year. Blood in urine. Enlarged cervix, with endocervicitis. Cystoscopic examination. Chronic exfoliative cystitis in patches. Right ureteral orifice irritated and inflamed. Small ulcer undermined and serpiginous immediately above the orifice. Ureters catheterized, but no tubercle found in kidney urine.

Clinic No. 44,797.—Frequency, urgency, and pain for three years. Large uterus slightly prolapsed. Large cervix. Cystoscopic examination. Chronic hyperemic cystitis. Chronic exfoliative trigonitis.

Clinic No. 43,645.—Marked frequency, pain, and urgency for twenty years. Frequency often 10-20 times at night. Cystoscopic examination. Chronic hypertrophic cystitis. Marked chronic trigonitis.

Clinic No. 44,818.—Frequency and burning only when walking about. None at night. Cystoscopic examination. Marked urethritis. No inflammation in bladder save a little near outlet.

Clinic No. 44,862.—Slight frequency and pain on urination. Cystoscopic examination. Moderate atrophic cystitis. Upon left side are two ureteral orifices lying side by side, each of which extends to kidney, as methylene blue injected through one ureteral catheter flows out of the other.

Clinic No. 44,393.—Marked frequency, pain, urgency, and return urgency for two months. Bloody urine. Cystoscopic examination. Acute hyperemic cystitis, with bleeding granulations and a great deal of exfoliation. Ureteral orifices not inflamed more than the rest of the bladder. Ureter catheterized and kidney urine negative for tubercle.

Clinic No. 44,186.—Frequency 1-2 and slight urgency for four months. Right floating kidney. Perineorrhaphy four years ago. Moderate cystocele. Cystoscopic examination. Marked chronic trigonitis. Slight chronic cystitis. Right ureteral orifice reddened. Ureters catheterized and kidney urine negative for tubercle.

Clinic No. 43,700.—Age 19. Frequency 5-6. Urgency, pain, and return urgency for six months. Pain in right side for three weeks. Lost ten pounds in three weeks. Headache. No abdominal pain. Much pus in urine. Tubercle bacilli and long grooved angular leucocytes found in urine; their protoplasmic outline irregular and swollen. Vacuoles and detached nuclei in leucocytes. Many red corpuscles. Cystoscopic examination. Acute hyperemic exudative cystitis with several small ragged undermined ulcers. Right ureteral orifice markedly inflamed and left orifice slightly inflamed. Ureters catheterized. Tubercle bacilli, pus, and red cells found in right kidney urine, but left kidney urine clear. Nephrectomy by Dr. Blake showed right kidney with marked tuberculous disease. Bladder cleared up under treatment after operation. Patient gained forty pounds in six weeks following operation and was perfectly well in two months.

Clinic No. 45,672.—Age 23; three miscarriages. Frequency 2-3; urgency and pain for one year. Blood and pus in urine. Cystoscopic examination. Marked hyperemic cystitis with exfoliation and small ulcers with undermined edges around the right ureteral orifice. Right ureteral orifice markedly inflamed. Left ureteral orifice irregular, with some swelling and redness of the edges and slight congestion of the surrounding mucous membrane. There were a few reddish excrescences. Ureters were catheterized. Tubercle bacilli and pus found in the right kidney urine, and left kidney urine was clear. Nephrectomy refused. Bladder improved under treatment.

Clinic No. 46,343.—Age 16. Left tuberculous hip-joint disease with marked deformity. Frequency and pain on urination for three months. Cystoscopic examination. Moderate hyperemic cystitis with small, clear tuberculous-like fine gray points, surrounded by a reddish zone of congestion and inflammation. The whole mucosa is injected and swollen. Ureteral orifices are apparently normal. Pus and tubercle bacilli in urine. Ureters were catheterized and kidney urine from both sides was found to be without pus or tubercle; so it was concluded that the disease was primary in the genitourinary tract and was due to miliary extension from focus in the hip. The bladder condition improved somewhat under treatment.

Clinic No. 43,857.—Age 23. Hydatidiform mole three months ago. Acute gonococcus vulvitis and endocervicitis. Frequency, pain, and urgency for three months. Cystoscopic examination. Urethral hemorrhage, acute urethritis, acute hyperemic cystitis with bleeding granulations.

Clinic No. 44,146.—Pain, frequency, and burning for three months. Pelvis negative. Cystoscopic examination. Chronic exfoliative cystitis. Blood and pus in urine. Ulcer of the trigone with blood-vessel whose walls may be seen pulsating, running across the raw surface. Right ureteral orifice normal; left slightly reddened. Ureters catheterized. Kidney urine negative for tubercle bacilli.

Clinic No. 46,939.—Pain, frequency, and urgency for two months. Cystoscopic examination. Acute hyperemic cystitis with marked edema and much swelling of the mucosa.

Clinic No. 44,736.—Moderate frequency for eight months. Cystoscopic examination. Chronic atrophic cystitis.

Clinic No. 45,688.—Frequency and pain for six months. Pain on left side and back. Retroversion and endocervicitis. Cystoscopic hypertrophic trigonitis, with moderate edema and exfoliation.

Clinic No. 46,636.—Age 56; menopause at 37 years. Frequency 3-4; urgency and return urgency. Cystoscopic examination. Atrophic cystitis with hypertrophied bands of muscle and connective tissue and small diverticula.

Clinic No. 32,326.—Frequency, urgency, and return urgency. Perineorrhaphy and suspensio uteri three years ago. Cystoscopic examination. Chronic atrophic cystitis. Moderate hyperemic trigonitis. Bladder is distorted and ureteral orifices are displaced by fixed uterus.

Clinic No. 44,900.—Pain on urination and blood in urine for six months. History of syphilis. Pregnant four months. Cystoscopic examination. Marked hypertrophic cystitis with bleeding granulations. Large syphilitic (?) ulcer of fundus of bladder, marked varicosity of veins of bladder. False membrane of ulcer. Ureteral orifices negative. Ureters catheterized and kidney urine negative for tubercle. Bladder wall firm and cannot be distended. Improved under antisyphilitic and bladder treatment.

Clinic No. 44,370.—Frequency, burning, and pain for ten years. Bearing down pain. Cystoscopic examination. Chronic exfoliative cystitis with moderate papillary excrescences and small inflammatory cysts. Ureteral orifices patulous.

Clinic No. 43,735.—Frequency and pain on urination for six years. Operation for cystocele six years ago. Had electrical treatment, static and faradic, three years ago. Cystoscopic examination. Chronic hypertrophic trigonitis in the neighborhood of the scar of the cystocele operation, which can be seen as a ridge in the trigone. Right ureteral orifice inflamed and displaced as a result of the operation. Ureters catheterized and kidney urine negative.

Clinic No. 45,010.—Marked incontinence of retention and frequency for nine years, since complete hysterectomy nine years ago. Cystoscopic examination. Bladder markedly dilated with three large saculations. Chronic hypertrophic cystitis with very great hypertrophy of muscular and connective tissue bands, causing innumerable diverticula, 0.5 to 2.0 cm. deep. Much exfoliation of the mucosa and marked hyperemia. Ureteral orifices displaced, but otherwise negative. The bands of muscle resemble in appearance the columnæ cornæ of the heart valves.

Clinic No. 46,661.—Frequency, pain, and urgency for two years. Worse in last three months. Pregnancy three months. Cystoscopic examination. Severe granular hypertrophic cystitis over the whole bladder, with marked papillary granulations, which bleed easily. Marked exfoliation of mucosa. Ureteral orifices negative. Ureters catheterized, kidney urine negative for tubercle.

Clinic No. 43,815.—Burning and frequency for eighteen months. Worse since pregnancy began four months ago. Cystoscopic examination. Marked hyperemic cystitis. Mucosa soft and granular. Marked congestive magonitis.

Clinic No. 42,549.—Burning and frequency for two years. Worse since pregnancy in last four months. Chronic endocervicitis. Cystoscopic examination. Marked congestive trigonitis. Ureteral orifices patulous. Cervix bulges into the bladder.

Clinic No. 45,669.—Burning, pain, and slight urgency for three months. Pregnant three months. Cystoscopic examination. Moderate hyperemic trigonitis with congestion of vessels.

Clinic No. 43,821.—Burning and frequency for three months. Pregnant three months. History of pelvic peritonitis and cystitis two years ago. Cystoscopic examination. Chronic hyperemic cystitis with marked granular trigonitis.

Clinic No. 43,460.—Frequency for two months. Pregnant four months. Cystoscopic examination. Moderate hyperemic trigonitis. Ureteral orifice patulous.

Clinic No. 44,151.—Frequency, pain, and bearing down pain for two weeks. Pregnant three months. Cystoscopic examination. Marked congestive trigonitis; ureteral orifice normal.

Clinic No. 44,442.—Frequency, pain, and urgency for a week. Pregnant two months and a half. Cystoscopic examination. Slight hyperemic cystitis with papular trigonitis.

Clinic No. 42,622.—Frequency, urgency, and pain for three weeks. Pregnant four months. Cystoscopic examination. Moderate congestive trigonitis. Ureteral orifices dilated.

Clinic No. 45,051.—Frequency and pain for one month. Pregnant five months. Cystoscopic examination. Marked hyperemic trigonitis with papillary granulations and softening of the mucosa. Much exfoliation and desquamation.

Clinic No. 45,010.—Frequency and urgency for four months. Pregnant eight and a half months. Pain right side and much pus in urine. Cystoscopic examination. Marked purulent cystitis with papillary granulations, exfoliation, and desquamation. Marked hyperemia and edema of the mucosa. Ureteral orifices patulous. Ureters catheterized, and kidney urine contains no pus. Improved and went to full term under bladder treatment.

Clinic No. 44,688.—Frequency and urgency during last three months. Blood in urine. Pregnant nine months. Pain in abdomen under liver. Temperature 102°, pulse 110. Cystoscopic examination. Marked purulent cystitis with hemorrhagic papules and granulation-like spots. Marked varicose enlargement of the veins of the bladder,

hemorrhage from veins. Intense congestion, hyperemia, and edema. Much desquamation and exfoliation. Ureteral orifices patulous, but otherwise negative. Ureters catheterized and kidney urine contained no pus. Bladder improved under treatment and cleared up after delivery.

A short discussion into the pathology of cystitis will be required to explain these findings.

The most common condition of chronic inflammation of the trigone, or trigonitis, is usually one which results from a simple hyperemia and congestion of the vessels; actual infection may precede or follow the congestion. The line of separation between chronic congestion and chronic inflammation of the trigone is often hard to determine. There is usually marked hyperemia with marked dilatation of the blood-vessels. The intimate relation between the vesical arteries and those of the neighboring pelvic organs makes this very easy. The membrane loses its luster, the mucosa becomes reddened and there is evidence of flaky desquamation and exfoliation of epithelial cells, leucocytes, and pus. In a later stage, the mucosa of the trigone becomes velvety in appearance and, in some cases, there are proliferative processes, which may lead to papillary or papilloma-like excrescences. These cases of trigonitis show epithelial proliferation, marked round-celled infiltration, involving particularly the submucosa. In addition to these changes Heyman [3] has drawn attention to a change in the epithelial elements from the normal bladder mucosa to flattened epithelium. The epithelium is thickened and papillary projections may rise above the surface. These processes may take alveolar arrangement below the level of the surface.

In chronic cystitis, the changes are more general: the mucous membrane has lost its normal pinky white appearance, and appears more or less generally reddened. This reddening and inflammation may appear generally or only in certain patches, and cases have been noted in this series, in which the inflammation extended in streaks along the line of the blood-vessels of the bladder wall. The mucosa is dull red in appearance and may here and there show small ulcerations. There is frequently desquamation of the epithelium, and interstitial hemorrhages, showing on the surface, are not uncommon. When there is considerable ulceration and necrosis, membranous or gangrenous cystitis may result.

The muscle of the bladder is sometimes involved in the changes of cystitis and may hypertrophy and enlarge to project into the bladder cavity as thick bundles or network, forming cavities into which the bladder mucosa may penetrate. In one case, No. 45,010, this was associated with marked distention, lack of tone of the bladder wall and incontinence of retention. The muscular bands were as thick as a lead pencil and formed a network. The connective tissue in the muscle bundles increases and there follows a hypertrophic sclerosis of the muscle of the wall.

Chronic atrophic cystitis is not an uncommon condition in women after the menopause, and is often associated with more or less sclerosis of the external genitals, as in Case 44,529, where there was difficulty in urination on account of a sclerotic or atrophic vulvitis, and the white firm tissue around the external meatus constricted the opening to almost pin-point size; but was easily cured by one dilatation of the orifice with steel dilators.

The mucosa in atrophic cystitis is dull and thickened. The blood-vessels are not seen at the fundus and there is often atrophic retraction of the ureteral orifices. This process is usually accompanied by more or less irritating hypertrophic trigonitis. This condition is the most common cause of frequency of urination in women past the menopause.

Inflammation of the bladder is usually effected by congestion of adjacent organs. Thus an endocervicitis with enlargement of the cervix is not an infrequent accompaniment of a congestive hypertrophic trigonitis. The intimate relations of the cervix and the trigone and their blood-vessels explain this association. The enlarged cervix also often presses upon the trigone which from the existing inflammation has lost its normal elasticity, and this will often cause alteration in the structure of the ureteral orifices, which, from being small elevated papillæ, become stretched, flattened, and elongated. The base of the orifice may often be seen through the patent opening. This condition is also often present during pregnancy where the enlarged cervix bulges into the bladder.

These conditions injure the valve-like power of the ureteral orifice and causes it to allow of regurgitation of urine into the pelvis of the kidney. This may be a cause of pyonephrosis and pyelitis of pregnancy. This regurgitation was well demonstrated experimentally by Sampson,[4] who obtained it after injuring the ureteral orifices in animals.

Pregnancy, also from the congestion it brings, may be the cause of the recrudescence of an old trigonitis, as was noted in cases 46,661, 43,815, 42,549, 45,669, 43,821, 43,460, 44,151, 44,442, 42,622, and 45,051. In these cases there was in the early months of pregnancy some frequency and urgency of micturition. The increased congestion of the trigone showed very markedly in the engorged arteries, which could be traced upwards from the bladder orifice.

The writer also wishes to draw attention to a peculiarly acute cystitis in the latter months of pregnancy, which was present in two cases: Nos. 45,010 and 44,688. In these cases, both about full term of pregnancy, there was a very acute cystitis with large amounts of pus in the urine. Cystoscopic examination showed a very inflamed bladder wall with marked edema and hyperemia. The condition was general and uniform. There was marked desquamation and exfoliation of epithelium and pus. The exfoliated cells and shreds clung to the bladder wall like small tags. The picture was that of an extremely acute cystitis with very marked edema and congestion. The mucosa was markedly softened, swollen, and boggy. The amount of pus excreted was great.

In both of these cases examination was made on account of a suspected involvement of the kidney by pyelitis or pyonephrosis of pregnancy. In one there was pain on the right side, which seems to lend color to that diagnosis. However, catheterization of the ureters brought clear urine from the kidneys, eliminating all possibility of suppurating kidney conditions. These two cases gave such a clinical picture of pyelitis that it was only by cystoscopic examination and ureteral catheterization that such condition could be eliminated. The writer does not believe that a diagnosis of pyelitis or pyonephrosis of pregnancy, in the absence of marked renal tumor, can be definitely and accurately made without cystoscopic examination and ureteral catheterization. The place of origin of the pus in the urine must be definitely located. A purulent cystitis frequently accompanies infection of the kidney in pregnancy, and, without cystoscopic examination or the palpation of a marked renal tumor, it cannot be said whether the pus arises from the

kidney, the bladder, or both; the microscopical examination of the urine for renal or bladder cells offers no decided proof of either condition. An increase in temperature cannot be taken as a definite guide in the differential diagnosis of these conditions, as, in acute hyperemic cystitis of pregnancy, fever may be present as in case No. 44,688.

In the earlier months, pregnancy has a distinctly evil effect upon old or latent trigonitis. The added congestion of the blood-vessels and effect of the growing cervix bulging into the bladder causes an exacerbation of the condition. The diseased, inelastic trigone is stretched and irritated, and the ureteral openings are altered and distorted.

In one of the cases of pregnancy with cystitis, No. 44,688, there was marked hemorrhage from the bladder. This was due to markedly varicose veins in the bladder. The oozing could be directly traced to the enlarged vein, although it was also caused by the hemorrhagic granulations. Similar cases have been reported by Kubinyl,[5] who believes it to be due to the increase in blood pressure and the insufficiency of the valves of the veins. Proust[6] also reports two such cases in pregnancy, and they state that cystotomy, packing, and even direct ligation of the vein may be required. However, in this case, astringent treatment, while it did not entirely stop the bleeding, permitted the woman to go to term.

In three cases, Nos. 43,700, 45,672, and 46,343, there was tuberculous cystitis. In two cases it was associated with tuberculous disease of the kidney. One case was operated upon, the kidney remained and the cystitis cured; the other refused operation and the bladder was treated locally with small improvement.

The third case was one of tuberculous cystitis, primary in the genitourinary tract, but secondary to an old tuberculous hip-joint lesion. It is very rare in tuberculous genitourinary disease to find the bladder alone involved, as Saxtorph[7] in 10,016 autopsies found 205 cases of chronic genitourinary tuberculosis, and amongst these 205 cases there were 52 of secondary implication of the bladder and only one case in which the bladder was alone involved. However, in case No. 46,343 no other focus of tuberculosis could be found in the genitourinary system, and the extensive disease of the hip-joint did not seem to have been communicated to any other organ save the bladder. The uterus and tubes were free, the kidneys did not show any abnormality in urine and the lungs were not apparently involved.

The stage of invasion of the bladder in this case was the very earliest. The little gray white tubercles could be seen, surrounded by a reddish zone of inflammation, and in only two places did there seem to be any breaking down and ulceration. In these places the tubercles had apparently coalesced and formed a small conglomerate mass, which broke down to form an ulcer. The condition improved very slowly under treatment, and the patient is at the present time under observation. The condition of tuberculosis of the bladder is, however, most resistant to treatment, and a cure, except in cases where an involved kidney or other focus is removed, is rare.

Amongst the forty-five cases were four in which the bladder inflammation was the result of or followed upon a previously gynecological operation. Two cases followed suspension of the uterus by the abdominal route. In one case, there was marked sacculation of the bladder with patches of inflammation and congestion; in the other there was considerable distortion of the trigone, alteration in the site of the ureteral orifices, and sacculation of the bladder. In case No. 45,010 there has been a complete hysterectomy for purulent tubal disease. The bladder was very markedly dilated and would retain 1,500 c.c. The walls were much congested, and the fibers of bladder muscle were separated into a network of firm, stout bands, the largest as great as a lead pencil and the smallest as the lead itself. The mucous membrane dipped into the crevices and the ureteral orifices were much distorted. The bladder was very irregularly dilated and had lost its tone: incontinence of retention was present. This case improved somewhat under dilatation of the urethra and other treatment. Case No. 43,735 had had a cystocele operation, and the scar of the operation wound could be seen within the bladder, although it did not seem to have penetrated the bladder mucous membrane. The left ureteral orifice was displaced and the region of the scar inflamed and congested.

Bladder inflammation following upon gynecological operations is not infrequent and is usually blamed upon a postoperative cystitis; however, it frequently happens that the cause may be more directly laid to the operation itself as in these four cases.

Blood in the urine is said to be an indication of tuberculous genitourinary disease; but in this series it appeared several times when tubercle bacilli could not be demonstrated in the urine. It was due in some cases to a small bleeding ulcer and, in one case of acute cystitis of pregnancy, to bleeding granulations and varicose veins of the bladder. It is, however, a symptom which is a direct and urgent indication for accurate study of the case and visual diagnosis of the lesion by means of the cystoscope.

One case, No. 44,900, showed a large single ulceration of the fundus with marked necrosis and false membrane formation. The bladder was uniformly inflamed and markedly contracted. The case was watched and treated throughout pregnancy without benefit; but after delivery slight improvement took place under antisyphilitic treatment. Operation of cystotomy was refused. Curettage of the ulcer was not done on account of the friability of the bladder wall.

The treatment in general of these cases of cystitis consisted of irrigations with a bland cleansing fluid. This solution usually consisted of sodium bicarbonate, one dram to the quart of water. This is a better solvent of mucus, pus, and albuminous substances generally than is the boric acid solution so commonly used. This is well known by otologists, who recognized the value of alkaline solutions in suppurative ear diseases. If there was a great deal of mucus, the solution was made of double strength, and, if there was a great deal of pus, one dram of sodium sulphate was added to the cleansing solution. These mixtures are bland and cleansing, and offer some advantage over the common boric acid solution.

Various antiseptic solutions were tried in the hope of finding one which would give the maximum effect with the minimum amount of disturbance. Roysing's[8] carbolic acid solution, five per cent., was tried in the cases of tuberculosis of the bladder and in other chronic cases. It caused a great amount of pain, in one case hemoglobinuria, and did no good. It was tried in all in twelve cases, and only one case was benefited. A number were made worse symptomatically and their condition

was not improved. The treatment is one of great severity and often causes intense irritation.

Sublimate solutions were not tried, as the known inefficiency of this antiseptic in the presence of albuminous matter was considered a contraindication for its use. It has been used by Guyon,[9] but has not been praised by other surgeons.

In the search for an antiseptic astringent of comparatively unirritating properties, quinine was tried. This substance has distinct antiseptic properties and is said to be placed midway between bichloride of mercury and carbolic acid in its antiseptic properties. It is comparatively unirritating, easily obtained, and may be retained in the bladder without danger. The salt used was the bisulphate, which is easily soluble in water and was made up one dram to the pint. This solution had a distinctly good effect and was the most efficient of the antiseptic solutions used. The few cases reported here cannot be made the basis for the introduction of a new treatment; but the marked improvement in treatment of chronic cases by this solution was encouraging.

Various silver salts were tried and the nitrate was found to be so irritating that its use was discontinued. In the choice of the colloid silver preparations, the experience of chemists and ophthalmologists was considered. It has been found by Derby[10] that of these various preparations argyrol and collargol are inert as bactericides, and that all the colloid silver salts are inefficient in the presence of albuminous matter. The preparations may be divided into three classes: the non-irritating of low bactericidal power, as argyrol and collargol; the more effective and slightly irritating bactericides, as protargol; and the very irritating preparations like nitrate of silver.

It has also been shown by Marshall and Neave[11] that the percentage of silver in the compound is no criterion of its antiseptic value. For these reasons, and after some trial of several salts, it was concluded that it was better to have a preparation as protargol with some bactericidal power at the expense of its slightly irritating properties than one like argyrol, which has little or no bactericidal properties and is non-irritating. Protagol, 5 per cent., was by no means used as a routine treatment. It was used in chronic trigonitis for local applications to the inflamed part and as an injection in marked chronic cystitis.

In acute purulent cystitis with exfoliation and pus formation, it was used with hydrogen peroxide as a cleaning and antiseptic combination. It has been shown by Futh[12] that in the treatment of necrotic endometritis and suppurating wounds, if a colloid silver compound is used along with hydrogen peroxide, the action of each is made much more effective. For this reason the two were combined in the treatment of purulent cystitis. Hydrogen peroxide, one-third strength, and protargol, 5 per cent., were injected alternately through a catheter into the bladder by means of a half-ounce syringe. The mixture was allowed to act for a few minutes, then it was washed out by the cleansing solution, injected by the same syringe. No difficulty or trouble was ever noted from distention of the bladder by the peroxide. The peroxide foam poured out of the catheter and was finally washed out by the quinine solution or the cleansing solution. This treatment is not one which would be advised for cystitis in the male, but it has given excellent results in purulent cystitis in the female.

The exfoliation, desquamation, and pus cells are in this way washed away, as they cannot be by any irrigation; the bladder mucous membrane is left clean, and is prepared for treatment by antiseptic or astringent solutions or for direct applications.

For direct applications to ulcers and localized inflamed spots nitrate of silver fused on a metal probe, or protargol solution on a swab, was used. The patient was put in the knee-chest position, and applications were made through the Kelly-Cullen cystoscope. The place for the application was first located by means of the examining cystoscope under water dilatation.

It was also found that in cases of acute cystitis, or cases where there had been extensive treatment, a soothing application was of benefit. Olive oil was used with some success, but finally a preparation of Irish moss was found to be the most useful. The value of this preparation consists in keeping the bladder walls apart and lubricating them, so that no friction or irritation results. The preparation is approximately the same as many lubricating jellies put up in tubes for use in vaginal examination. This soothing lubricating preparation of Irish moss is also of use in lubricating the cystoscope before its introduction into the urethra. It is prepared as follows:

Chrondus (Irish moss)....45 g.
Distilled water.....1500 c.c.

Wash the Irish moss in cold water, drain off water; wash again and drain. To the washed Irish moss add 1,500 c.c. of distilled water and boil for ten to fifteen minutes, stirring frequently. Strain through muslin with expression. To the strained Irish moss add 4,500 c.c. of boiling distilled water and filter. The process of filtration may be hastened by loosely filling the filter with absorbent cotton. Evaporate the filtrate to one-fifth by bulk, cool partially and add gomonal, 1 per cent. by weight, mix well and strain through fine white flannel which has been previously boiled. Bottle in ground glass stoppered containers of about half a pint each.

This Irish moss jelly makes a useful lubricant for examinations and may be put up in sterilized metal paint tubes for that purpose. In bladder treatment the jelly should be diluted with hot water to a thick semisolid consistency, fit for use in a syringe.

The treatment of these cases of cystitis consisted mainly in the use of four compounds: the antiseptic quinine solution, the cleansing bicarbonate solution, the peroxide and silver combination, and the jelly of Irish moss. In addition to this, appropriate treatment was directed to ulcers by direct application of silver or curettage, as was required; chronic patches of inflammation were stimulated, and lesions in the neighboring organs were treated.

If the case was one of acute purulent bladder disease, the bladder was first inspected and a diagnosis made, the bicarbonate solution being used as the dilating fluid. The pus and shreds were then washed away by the peroxide and silver combination. The bladder was then washed and dilated by the quinine solution and more exact examination made for small ulcers, patches of inflammation, and the condition of the ureteral orifices. If it were necessary to catheterize the uterus, it was usually done under the quinine solution and after the bladder had been cleansed. It was believed that in this way danger of carrying infection upwards from the bladder was eliminated, the cleansed bladder wall and antiseptic quinine solution removing this small danger. The quinine solution gives a pecu-

liar bluish appearance through the cystoscope, but examinations can be well made with it.

If the case is one of very acute irritation, the Irish moss jelly is injected on removal of the quinine solution. The amount of jelly injected should vary from one to four ounces. If, however, the bladder inflammation is more chronic, the patient is told to retain the quinine solution as long as possible in order to get full benefit from its antiseptic and astringent action.

In chronic cases with much congestion and irritation the peroxide and silver combination was seldom used. The aim of the treatment in all cases was first to cleanse the infected area, to direct appropriate treatment toward the special lesion, and to exercise an antiseptic astringent and stimulating action upon the mucous membranes by means of the quinine solution.

It was also found useful to use various drugs by the mouth. Infusion of buchu and fluid extract of triticum are old favorites and have no equals for making the urine bland and unirritating. Tincture of belladonna and potassium or sodium bicarbonate should be used in combination to relieve spasm and make the urine alkaline. It is required in cases of cystitis that the urine be made alkaline during the irritating stage of the disease. Acid urine is always irritating. The patient should also be directed to drink large quantities of water and a specified amount of six glasses should be named in order that the directions be carried out.

The use of hexamethylene tetramine (urotropin) has not been satisfactory in the writer's experience. It is inert, save when the urine is acid and it makes the urine rather irritating. It is very irritating to the kidney and, when first given, acts as a diuretic; but on continued use may do harm. The writer wishes to sound a note of warning in regard to the prolonged use of this drug. Its value in purulent kidney conditions is undoubted; but it is of very little use in cystitis and the continued use may cause kidney irritation and hemorrhagic urine, as has been noted in four cases in the writer's somewhat limited experience. Many additional cases of the toxic effects of this drug have been collected by Beardsley.[13] Guaiacol is a useful and efficient substitute, but it is also seldom required in cystitis.

The therapeutic value of rest is very great in these cases, and a bland diet with avoidance of acid elements should be ordered. It is also important to remember that the occasion of a cystitis sometimes depends upon a coincident lesion and the bladder inflammation may not react to treatment until that is cured.

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THE PHYSICAL SIGNS OF INCIPIENT PULMONARY TUBERCULOSIS.

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In this communication, the writer intentionally ignores a review of the accepted signs peculiar to early phthisis with the object of giving prominence to a few original methods which he has successfully employed for many years in diagnosis. He can only refer succinctly to methods which he has already reported and is therefore constrained to direct the reader to the original communications bearing on the subjects cited. The successful treatment of pulmonary tuberculosis postulates an early diagnosis and justifies nearly always the aphorism: *Tuberculosis primis in stadiis semper curabilis.* One must not conclude the antithesis in later stages of the disease. Whereas one may diagnose early phthisis, one cannot always prognosticate, inasmuch as the character of the soil on which the seed has fallen is not always the object of correct interpretation, for considerable differences exist in the stock of vitality contributed to the body in different individuals. Thus, lung cavitation is, in my experience no index of an unfavorable prognosis, for such a condition is often an objective demonstration of tissue-resistance to germ invasion, very often a localized process and an available field for bronchial drainage. As a rule, the traditional aphorism, "*Qui bene diagnoscit, bene curat,*" applies most cogently to phthisis. Before one can properly appreciate the physical signs of early phthisis, one must possess a correct conception of the lung condition peculiar to this stage of the disease or antedating it.

The Lungs in Early Phthisis.—The essential morbid anatomy consists of a catarrhal process plus infiltration of the peribronchial and submucous tissues. The lungs predisposed to phthisis or already invaded show the presence of constant areas of diminished lung resonance varying from dullness to flatness as elicited by percussion. These areas or *atelectatic zones*,[1] as I have called them, may be dispelled by repeated forced inspirations or by vigorous cutaneous irritation so as to induce the *lung reflex*.[2] Not infrequently an entire apex may be collapsed or atelectatic and the condition may be interpreted erroneously either by percussion or radiodiagnosis[3] as an infiltration. However, repeated forced inspirations plus the lung reflex will eliminate any error in this regard. In individuals predisposed to tuberculosis and in those who already have the disease, the lungs are practically in an emphysematous condition,[4] viz., dilatation of the air vesicles with disappearance or loss of tone of the elastic fibers. The following conclusions have been formulated concerning this emphysematous lung condition or acute pulmonary dilatation:

In health, the percussion note of the lungs is resonant during inspiration, and dull or even flat during forced expiration.

2. In emphysema, the percussion note is unchanged during the two phases of respiration.

3. This unchanged percussion note, heretofore recognized in pulmonary vesicular emphysema is pathognomonic of lungs predisposed to tuberculosis, and of lungs already affected.

4. Associated with the unchanged percussion sound, there is an extension of the lung borders manifested by downward dislocation of the lung and diminution often to the extent of obliteration

of the cardiac, hepatic and splenic areas of absolute dullness.

5. Unchanged percussion resonance, hyperresonance, and prolongation of the expiration are indicative of deficient expiratory force of the pulmonary substance, and constitute the earliest trustworthy signs of the so-called pretuberculous stage of tuberculosis. The restricted diaphragmatic movements peculiar to early phthisis owe their origin to the emphysematous lung condition.[5] Rokitansky noted that too voluminous lungs coupled with a small heart characterized the phthisical habitus. This observation was soon relegated to oblivion, but it was revived by Brehmer and vigorously defended. The too voluminous lungs of Rokitansky and Brehmer are practically the lungs of emphysema (acute pulmonary dilatation).

I may be permitted to swerve from the continuity of my subject for the purpose of considering the relation that the lung condition in early phthisis bears to the treatment of the disease. It is not so much a question of how much air enters the lung as it is of how much air gets out. The stagnant pools of residual air promote a state of tissue asphyxiation, the patient practically rebreathing the air.

Some years ago[6] I demonstrated clinically that the vagus nerve contained bronchoconstrictor and bronchodilator fibers, and this observation was conclusively established later by the experimental investigations of Dixon and Brodie.[7] The writer has availed himself of the latter fact, and by inducing the lung reflex of contraction[8] in the treatment of phthisis, emphysema, and asthma, one may wield a puissant force in antagonizing pulmonary conditions associated with dilatation of the lungs.

Pulmonary Anemia.—Many years ago[9] I directed attention to the occurrence of anemia of pulmonary origin associated with atelectatic zones and dependent on insufficient lung development. This form of anemia is characterized by loss in weight, whereas in the essential anemias, the well nourished condition of the patient is manifest.

There is another sign which distinguishes pulmonary from other forms of anemia, the one exception being, perhaps, progressive pernicious anemia, and that is the fact that, while the ferruginous preparations benefit pure anemics, in pulmonary anemia, they are practically valueless, at any rate the benefit accruing from their use is evanescent. The real pathognomonic sign of pulmonary anemia is the therapeutic test. Subject such an individual to a single pneumatic cabinet treatment, employing inhalations of compressed air, and one invariably finds after an examination of the blood an increase in the percentage of hemoglobin. A collective investigation demonstrated that the hemoglobin percentage could be increased, on an average, 15 per cent., after a single séance in the pneumatic cabinet. In the absence of a cabinet, a series of forced inspirations and expirations are less effective, although nevertheless efficient in establishing an augmentation in the percentage of hemoglobin. Pulmonary anemia is likewise one of the most important symptoms of early phthisis and may precede all other recognizable signs.

The reader is referred elsewhere[10] for the explanation of the therapeutic test in pulmonary anemia. The writer is cognizant of the fact that the hematologist does not concede the existence of anemia in tuberculosis although practically every clinical symptom negatives the latter observation. The writer recognizes that the condition of the blood prevailing in polycythemia bears some relation to the condition which exists in tuberculosis. In polycythemia, dependent on chronic venous stasis, the capillary blood owing to its concentration contains more red corpuscles and hemoglobin than normal, and it is assumed that while this condition may exist in the peripheral circulation, it is not necessarily so with the blood in the rest of the body. This polycythemia is explained by supposing that owing to deficient oxidation, the result of the stasis, an augmentation of red corpuscles occurs as a compensatory process.

Vibrosuppression.—I have very recently described[11] an instrument called the vibrosuppressor for restricting vibrations of the sternum. In the absence of the latter simple apparatus, the lower end of the sternum may be forcibly compressed by the hand of the patient or an assistant while percussion is executed by the physician. If in association with compression of the sterum, percussion is executed during suspension of breathing after the patient has practised forcible expiration, the organs may be outlined with marvelous accuracy. This method, however, is especially available in the recognition of dullness peculiar to early phthisis. In the latter affection, resonance (owing to dilatation of the lungs) is the usual phenomenon elicited by percussion, but if vibrosuppression is employed, dullness of one or both apices may be recognized. The writer has much reason to emphasize the importance of the latter sign.

Auscultatory Percussion.—If, during percussion, a stethoscope is allowed to hang from the ears of the physician (no part of the instrument being in contact with the chest of the patient), nuances in the percussion sound, unrecognizable by unassisted audition, are demonstrable. Here the stethoscope is employed as a microphone, and the writer has also found this simple expedient of value in topographic percussion. The writer's modified method of auscultatory percussion[12] is available in the elicitation of lung consolidation. It embodies the principle of transsonance. If it is desired to elicit the transsonance of the apices, the stethoscope is fixed first over one and then over the other apex, while immediate percussion with the finger is executed over a prominent vertebra. If the apices are to be auscultated posteriorly, the percussion blow is limited to the manubrium sterni. By this maneuver, one may easily recognize departures from normal transsonance provided the physician has familiarized himself with the latter, which is not difficult of attainment.

Auscultation.—Owing to the respiratory immobility of the lung apices, many auscultatory phenomena may escape recognition, and it is therefore often imperative to augment the respiratory activity of the apices. The latter object may be achieved by binding the lower chest prior to auscultation with a rubber bandage.

Tracheal Traction Test.—I have described this test[13] as an aid in the diagnosis of idiopathic asthma. When the head of the patient is thrown forcibly backward or turned to one side and so maintained during percussion, the normal resonance obtained by percussion over the manubrium sterni and lungs contiguous thereto becomes translated into a dull or flat sound during the time the cervical muscles are contracted. The latter evoke contraction of the bronchial muscles by stimulation of the pneumogastric nerves. The maneuver in question by contracting the bronchial tree will accentuate râles or other acoustic phenomena which may be present

either over the apices or elsewhere over the lungs.

Stethophonometry.—If one is in the possession of a stethophonometer,[14] one may estimate the comparative intensity of the sounds heard over both apices. Assuming that no stethophonometer is at our command, then the latter may be improvised by using the ordinary binaural stethoscope with soft rubber attachments. If, *e.g.* with one rubber tube compressed by the finger, the apical respiratory murmur is barely audible over one apex and very loud over the other apex, it is evident that the murmur is exaggerated in the latter situation.

Tuning Fork.—The writer regards the tuning fork of some value in testing the conductivity of the lung tissue and employs it after the following manner: A fork (with 120 vibrations) is attached to a cork and the latter is grasped by the teeth of the patient. Forks may be purchased with a hard rubber attachment, rendering the employment of the cork unnecessary. Without removing the tuning fork from the patient's mouth, the prongs are made to vibrate by compression by the fingers of the physician, during which time the apices or other portions of the lungs may be auscultated. The situation of the bronchi is revealed by the exaggerated transmitted hum, and the hum is equally modified by the normal and consolidated lung.

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CARCINOMA OF THE RIGHT NASAL CAVITY AND OF THE ANTRUM OF HIGHMORE.*

By LOUIS KLEMPTNER, M.D.,
SEATTLE, WASH.

Rosa D., 33 years old, consulted me on July 20, 1907. She complained of headaches, an increasing obstruction of the nose for the last two years, an increasing swelling of the right side of the face and of the right eyelids for the last three months; she had been losing flesh lately and was getting pale; she was never sick before.

The patient is thin and pale; the internal organs are normal; no symptoms of lues. The right cheek and the right lower eyelid are swollen; the right eye is much smaller than the left. In translumination the right antrum of Highmore is much darker than the left. The whole nasal cavity is filled with a growth, which is visible by lifting the tip of the nose. This growth, the surface of which is irregular, has displaced the septum to the left and partly filled the nasopharynx. There is a scant odorless mucous discharge from the nose.

The microscopical examination of a piece of the growth removed for the purpose of diagnosis revealed a malignant tumor, apparently carcinoma.

The patient was operated upon by me at the Yorkville Hospital on July 25, 1907, according to Denker's method, a detailed description of which can be found in the *Münchener medizinische Wochenschrift*, No. 20, 1906. I made a horizontal incision in the mucous membrane of the anterior wall of the right superior maxilla, beginning half an inch to the left of the frenum above the sockets of the teeth, and enlarged the incision upwards to the apertura pyriformis and outwards to the last tooth. It became evident that destruction had already taken place of the periosteum and bony wall in the fossa canina, the size of a quarter of a dollar, through which opening the tumor was bulging. The soft parts were pushed back upwards to the lowest margin of the orbit and inwards, until the lateral and lower margins of the apertura pyriformis were laid open. The whole anterior wall of the antrum and the growth which filled it were then removed. The interior wall of the antrum was also in great part destroyed by the tumor in the region of the middle turbinated bone. I separated the mucous membrane of the lateral nasal wall from the bone below the inferior turbinated, and removed the whole interior bony wall of the antrum from the apertura pyriformis, as well as the inferior turbinated. Then followed the resection of the middle turbinated, the removal of the tumor masses from the nasal cavity and the nasopharynx, the removal of all the ethmoidal cells, which were almost destroyed by the growth. The frontal and sphenoidal cavities were not affected.

The loosened mucous membrane of the lateral wall of the nasal cavity was used to cover the floor of the antrum, and the so formed single big cavity was filled with iodoform gauze. The wound of the mouth was then closed. The after treatment was carried out through the nose. The course after the operation was very satisfactory. The highest temperature was 101°, on the third day. On the fourth day I removed the packing and did not renew it; on the sixth day the sutures were removed; the wound of the mouth healed *per primam*. After 10 days the patient left the hospital. I cleaned the

Fig. 1.—Alveolar carcinoma with cyst formation; stroma consisting of connective and granular tissue.

*Paper read and patient presented before the Clinical Society of the Yorkville Hospital, New York City, October 17, 1907.

wound the first two weeks, and then the patient syringed it herself with a boric acid solution. There was little secretion or formation of scabs.

Now, four months after the operation the swelling of the face has disappeared; the right eye is as large as the left. The nasal cavity and the antrum of Highmore form one large cavity, the walls of which are smooth; the septum is straight; looking upwards and backwards one sees the opening to the sphenoidal cavity. There is no sign of recurrence. The patient feels very well and has gained in weight.

Dr. Israel Strauss made a microscopical examination of the growth and diagnosed it carcinoma originating from the mucous glands. The specimen presents a stroma consisting partly of connective tissue, partly of granular tissue, in which are irregularly disseminated alveoli filled with masses of epithelial cells. The alveoli are different in form and size, round or elongated, and sharply defined from the surrounding stroma, which forms the walls of the alveoli. The masses of the epithelial cells are partly compact and partly contain irregularly formed cysts of varying size surrounded by layers of those

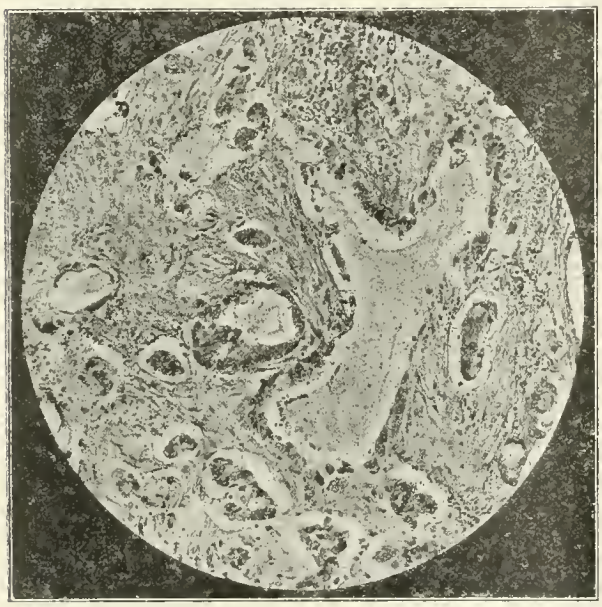

Fig. 2.—Enlarged photomicrograph showing polymorphous cells, many of them possessing several nuclei.

cells of varying thickness. The interior of the cysts is filled with a homogeneous mass. The cysts apparently present more or less advanced phases of destruction of the cells. The cells are polymorphous, many of them possess several nuclei, which are well stained.

The great destruction of the walls of the antrum and of the ethmoidal cells pointed to malignancy of the growth. The microscopical examination proved the growth to be carcinoma. The case is interesting on account of the relative youth of the patient, the absence of a recurrence, and the absence of any deformity despite the removal of such large bony masses.

The operation in this case is only a further development of the radical operation for empyema of the antrum of Highmore, as elaborated by Caldwell, Boeninghaus, Kretschmann, Friederich, and Denker. This operation has the great advantage over other operations for malignant growths of this region in that there is no disfigurement of the face, the process of healing is much shorter in duration and less tormenting, and the after-treatment is simple and soon easily managed by the patient himself. The result speaks for itself.

The photomicrographs in this case were made by Dr. Leopold Jaches of Cornell University Medical College.

1607 Fourteenth Avenue.

SUDDEN DEATH IN PNEUMONIA,

ITS CAUSE AND PROPHYLAXIS.

By W. PARKER WORSTER, A.M., M.D.,

NEW YORK.

Patients dying in pneumonia do not die from feebleness of the heart, as many suppose. Enfeeblement of the heart has nothing to do with it; that is less the cause of death than another more important factor which in such cases is at work.

Collapse of the capillary blood-vessels due to a paretic condition of their walls, or a condition of stasis in which the walls remain distended and flattened out, is the real cause of sudden death in pneumonia. The vessels have lost their resistance and that elasticity which propels the blood through them and that loss of elasticity is the result of the toxemia poisoning the nerve centers in the medulla. Those centers are paralyzed and consequently the coats of the arteries and veins are also paralyzed, rendering them useless and forming a permanent obstruction to the flow of blood back to the heart.

In the last stages of pneumonia, when the temperature is down, when the lungs are clogged with hypostatic congestion, when the dyspnea is excessive, respiration shallow and frequent, and the heart is laboring to compensate for the loss of elasticity in the peripheral vessels which is so essential to normal conditions, if they can be freed so as to allow the patient to breathe freely, the whole aspect of the case will change for the better and the patient will recover. Therefore the chief indication is to remove that obstruction and do it quickly, or the patient will die suddenly. The excitation of cold is the most powerful and energetic agent for combating such collapse and can be accomplished in the following manner: A bathtub of water at 100° to extend just above the patient's hips is prepared and the patient placed in it or held in a semi-recumbent position, and several basins of water at 60° or lower, as the case may indicate, are poured over his shoulders, chest, and back, the operator standing on a chair and holding the water as high as possible so as to get the required force.

Such a procedure, if the patient is unconscious or delirious, low muttering or otherwise, will often arouse him to consciousness and brighten his eye and his countenance will wake up from its apathetic appearance, his shallow respiration will become deeper and the excitation of the cold upon his bronchial tubes will cause him to cough and expectorate and free them from mucus and his air-cells from threatened hypostasis, his cyanosed and marble skin will become ruddier, the capillary circulation will be reestablished, and the heart will gain in force and diminish in frequency.

This procedure will positively change the whole aspect of the case and perhaps only one application will suffice to save the life of that patient, as I can testify from personal experience and practical bedside results.

I wish to warn against the fear of a cold application given in the manner described above in such conditions, as the refreshing, stimulating, and life-saving effect of such will never be forgotten by any one who has once witnessed it.

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DIAGNOSIS OF THE LOCATION OF THE APPENDIX IN ACUTE APPENDICITIS.

THE appendix usually lies behind and to the inner side of the cecum. Its location varies, however, both because the cecum does not occupy a fixed position in the abdomen and because the origin of the appendix in the cecum may be variously placed. In the *Deutsche Zeitschrift für Chirurgie* (Volume 91, No. 1) Krüger describes how the location of the appendix may be ascertained before operation, he having made a correct diagnosis in 375 cases. He assumes that all the possible symptoms which an acutely inflamed appendix can cause are not present in every case, but that certain symptoms are present in one case and absent in another. This variance in symptoms is due to the different pathological changes possible in the appendix and its surroundings. The pathological changes, on the other hand, depend partly upon the location of the appendix. From these premises Krüger concludes that the symptoms vary with the location of the appendix, and therefore the former aid us in diagnosing the position of the latter.

Vomiting usually sets in only when the serosa of the appendix has become involved and when there has been an irritation of the peritoneum of the general abdominal cavity. The number of times a patient vomits depends upon the area of inflamed appendicular serosa coming into contact with the general abdominal peritoneum and upon the virulence of the infection. Therefore, if there is a great deal of vomiting the appendix probably lies free in the abdominal cavity, while if there is little or none, it lies imbedded in adhesions, or lies behind the cecum and ascending colon. Distention, which is caused by the involvement of some other portion of the intestine, is rare in the earlier stages, and when it does occur early it is a sign that the appendix lies towards the general abdominal cavity or in the true pelvis, where it is most likely to come in contact with loops of intestine. Absence of early distention is in favor of a retrocolic appendix. Bladder symptoms point to the appendix lying in the true pelvis. Muscle spasm is also of value in diagnosing the location of the appendix. When the inflammation has extended by continuity from the serosa to the abdominal wall, the parietal peritoneum and muscle become involved, causing a circumscribed resistance of the wall. The latter is due to contractions of the rectus muscles, brought about either reflexly or by inflammatory irritation. This spasm is present early when the appendix lies in front, but we rarely see it early when the appendix lies behind. Pain on moving the hip joint, or the fact that a patient constantly holds the thigh flexed, is a sign of ileopsoas spasm, from which Krüger concludes that the appendix is in immediate relation to that muscle. Pain at the free border of the ribs on deep inspiration points to the appendix lying in the upper portion of the abdomen; if there is in addition spasm of the rectus, it lies in front; if there is pain in the lumbar region, it is retrocolic, the latter position being the more frequent. Krüger admits that it is often difficult to locate the appendix during a second attack, and then the history of the first attack is the main guide to a correct diagnosis.

In the operative treatment of appendicitis a number of different incisions have been devised, but it must be admitted that often it is immaterial which incision is made. At times, however, according to the location of the appendix, one incision will give a better exposure than another. A correct diagnosis of the position of the appendix is therefore of aid in selecting the most suitable incision, while it also enables us to know where to look for the appendix during operation, thus preventing an unnecessary disturbance of the intestine.

TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR.

THE general pessimistic belief that a definite attempt to secure restoration of form and function in cases of fracture of the neck of the femur is of little avail is easily explained when we read the unfavorable results generally reported. Thus Scudder writes that in only two out of sixteen cases of fracture of the neck treated by extension and immobilization was the leg functionally useful two and a half years after the accident. In the January number of the *Annals of Surgery* John B. Walker reports the results in 112 cases treated at Bellevue Hospital since January, 1906. Of these eighteen patients died; thirty-two had not been heard from; thirty were unable to work because of persistent impairment of function, through pain, restriction of movement at the hip on account of shortening and adduction, or the necessity of dependence upon crutches. Twelve had abandoned their crutches and were walking comfortably with a cane, but at times with stiffness and pain. They were beginning to do some work. Ten had recovered almost completely; they were free from pain and stiffness and were able to do their normal work. Ten were still in the hospital.

Of these 112 all but fifteen were treated by the long side splint and Buck's extension. Appreciating the impossibility of obtaining success with this old-time method, Walker used the method advocated by Whitman in fifteen cases. Under an anesthetic, which permits complete relaxation, the leg on the fractured side is gradually abducted to the normal limit of about forty-five degrees, the hip joint being held and supported. At the same time traction is made to overcome the shortening as much as possible. The pelvis is prevented from tilting upward by simultaneously abducting the sound leg to forty-five degrees. Outward rotation is corrected by lift-

ing up and supporting the upper end of the femur and rotating the leg inward. A plaster spica is then applied to include the pelvis, crossing below the edge of the ribs and including the foot to prevent any outward rotation. Walker lays great stress on the importance of making abduction complete, as it exercises direct traction upon the capsule, rendering it tense in front and below. As the capsule supports the sides of the fragments it tends to force them into alignment. He treats impacted fractures like unimpacted ones, *i.e.* he replaces the fragments in their normal anatomical position by carefully unlocking and separating them. Of the fifteen patients treated by this method, Walker reports four as cured at the end of from six to twelve months. They had no deformity, pain, or discomfort, had freedom of motion, and were able to resume their regular work. Five other patients who had been under treatment for less than four months were up and walking on crutches. Six patients had been under treatment less than two months. In no case was any harm done by the bandage. The patients could move about without pain and could help themselves in many ways, while patients with side splints and Buck's extension usually complain of pain whenever any movement is made.

The fact that thirty per cent. of the 112 patients treated at Bellevue were transferred from other hospitals, where they had been for less than a week, and that fifty-four of the 112 were discharged from the hospital within fifteen days after admission, betrays a degree of indifference to patients of this class. This indifference might be justified by the fact that the results of such carelessness are usually no worse than those obtained by long-continued treatment with a long side splint and Buck's extension. With the adoption of Whitman's method, to which Walker's good results are undoubtedly due, it is to be hoped that greater interest will be shown in these patients, especially as, from the hospital standpoint, this method of treatment is less exacting, in that the patients, being more comfortable, do not require so much time and attention.

PROPHYLAXIS OF HYDROPHOBIA.

That there should have been thirty-two deaths of human beings from hydrophobia in the Greater City of New York during the past ten months is something more than an unfortunate circumstance—it is not too much to say that such a record is a disgrace. This number, incredible as it may seem, is unofficially set down as a fact by one who speaks with authority and who knows whereof he speaks; therefore it can be taken as positive. Many complaints have been made from time to time, in letters to the press and in other ways, of the wholly superfluous horde of irresponsible cats and dogs that invade our streets, but few have realized that these animals are not only figuratively but literally pestiferous. As an actual menace to the public health it requires no great amount of research to prove that they are responsible for more deaths than smallpox, and this because they multiply so rapidly, are so widespread in their distribution, and are not properly under control. Clippings made from one newspaper in this city showed that during the thirty-one days of December, 1907, two adults and four children in the boroughs of Brooklyn and Manhattan were sacrificed by this entirely preventable disease, and it is probable that there were a few more cases at least which were reported in other papers or were not reported in any paper.

Still the war between the philozoics and the philosophers goes on, and the new-born puppy has as good or a better chance than most babies of the human variety in the struggle for existence. With the limited amount of funds in hand the Society for the Prevention of Cruelty to Animals has done reasonably good service for the community in this respect. During the past fiscal year it succeeded in disposing of 40,000 dogs and 70,000 cats, but these figures, startling as they are, do not convey any idea of the enormous number of animals still at large in the five boroughs. In 1903 an ordinance was passed making it a misdemeanor for an owner to allow his dog in the streets unless muzzled or led by a four-foot leash. This provision was seldom or never enforced, and was repealed in 1906. Consequently the city has no authority over dogs at this time save in the matter of requiring a license, which is nearly the worst measure that could well be contrived in so far as the prevention of hydrophobia is concerned, for after the owner has paid his license fee and provided his pet with a brass collar he feels that his responsibility has ceased, and the dog, being of an indiscriminating turn of mind in this regard, does not hesitate to contract rabies and confer hydrophobia upon his nearest human neighbor.

We learn that a committee of three has recently been appointed by the Washington Heights Medical Society to look into the matter of hydrophobia in Greater New York, and that as soon as the proper data can be obtained an attempt will be made to introduce a bill at Albany which shall provide for the proper muzzling of all owned dogs and for the destruction of all tramp dogs and cats. It is doubtful just how much can be accomplished in this way, but surely every medical man and every enlightened layman should heartily support any effort toward the complete stamping out of that absolutely preventable and one of the most horrible of diseases, human hydrophobia.

The Transplantation of Tissues.

The transfer of portions of the body of one animal to that of another is a problem that has long occupied experimenters. It is recorded that as long ago as 1793 Aldovandi succeeded in causing the spur of a rooster to grow on the head of the same animal, while in 1863 Bert was able to unite pairs of white rats by bridges of skin several centimeters in length. Eiselberg in 1889 found that it was possible to cause the skin of one rabbit to cover over denuded areas on the body of another but that the experiment always failed when animals of different kinds were used. The most recent work in this direction is that of Carrell who has removed both kidneys with their ureters and vascular attachments from cats and replaced them with corresponding organs from other felines, the transplanted urinary apparatus appearing to answer all the demands put upon it in its new host. Sauerbruch and Heyde (*Münchener medizinische Wochenschrift,* January 28, 1908) have gone to work in a somewhat different way and have

effected the union of pairs of rabbits whose abdominal walls were denuded and sutured together in various ways. In some of the experiments only the muscles were brought in contact, in others the abdominal cavities were opened and juxtaposed so that free communication existed from the one to the other, while in still others a lateral anastomosis was also done between two loops of large intestine. It was found that the experiment could not be made to succeed unless the animals were young, were of the same sex, and of the same litter. That the vascular union between the two individuals was complete was shown by the fact that on injecting such substances as potassium iodide or sodium salicylate into one animal it could be detected in the urine of both, while anthrax bacilli thrown into the circulation of one caused the death of both and could be recovered from the heart blood of both. In one instance one kidney was removed from one animal without apparent ill effects, but the removal of the second organ was followed by the prompt death of both rabbits, so that apparently the organs of the two were not able to functionate vicariously for each other. The considerations involved in a parabiosis of this sort are many and various and it is not unlikely that something of practical as well as theoretical value will result from their extension. The problems of immunity and serology especially would seem to be susceptible of investigation in this way.

The Treatment of Dysmenorrhea.

Of the minor gynecological maladies dysmenorrhea is one of the most prevalent and also most intractable. The list of remedies and plans of treatment advocated for its relief is a long one, but as is usually the case when many cures are recommended, none is altogether satisfactory. No doubt the fact that painful menstruation is merely a symptom that may depend on underlying conditions of widely different nature, is responsible for the difficulty that is often experienced in affording relief of the harassing and frequently incapacitating ailment. At least four different forms of dysmenorrhea may be distinguished, those depending on mechanical obstruction, those due to inflammatory conditions of the endometrium, those of reflex nature and emanating from the ovary or from extragenital organs such as the turbinated bodies or the eyes, and finally a group that for lack of more exact means of classification is regarded as a manifestation of a general nervous-hysterical tendency. A suggestion made by Polano in the *Münchener medizinische Wochenschrift*, August 27, 1907, might perhaps be expected to prove of service in the latter two types of the affection, and as it would seem to be entirely harmless, is worthy of trial in cases that have been found refractory to ordinary measures. It consists in endeavoring to influence the ovarian function by exciting the *quasi* antagonism existing between the mammary gland and the ovary. This is effected by the application to the breasts of the glass suction apparatus used in the treatment of mastitis by Bier's method. The suction is kept up for from fifteen minutes to half an hour daily, beginning some days before the expected onset of menstruation, and continuing it through the period. The relief to the pain has been very marked in the author's experience, and the duration of the flow is also reduced in many cases. The method has also been applied with advantage in cases of insufficient functional capacity during lactation, a few treatments sometimes sufficing to reestablish a lacteal flow that seemed on the point of ceasing absolutely.

Conjugal Diabetes.

Among the students of this mysterious disease there have not been lacking those who have regarded it as a transmissible affection and have cited as evidence in favor of this view cases in which man and wife have both suffered, or servants, laundresses, and others, shortly after coming into habitual contact with diabetics, have developed glycosuria. Senator in discussing this question (*Berliner klinische Wochenschrift*, January 27, 1908) says that the average of a very large number of cases of diabetes from the statistics of a dozen or more writers shows that the proportion of married couples is not more that about 1 per cent. Such a method of calculation is illogical, however, since in order to investigate the question of conjugal diabetes all unmarried patients should be excluded from the count and the length of time the two persons have lived together after the one member had manifested the first symptoms of the disease should also be regarded. Taking five hundred and sixteen married couples from his own private practice in which husband or wife was diabetic, under the most favorable method of estimation the other member was also diabetic in 4.3 per cent. Even this proportion, which is surely too high, as well as most of the isolated cases of apparent infection that have been reported, can be explained in other ways, while it must be borne in mind that animal experiments in this direction have been negative. Senator's conclusion is that there is little or no evidence in favor of a belief in the infectiousness of diabetes, though if only occasional cases are considered an offhand denial of this possibility does not seem justified. Since the affection generally known as diabetes mellitus is now believed by most pathologists to include an indefinite number of more or less different conditions it is perfectly conceivable that one or more types may occur whose etiology is such that transmission from one individual to another, that is to say, contagion, is possible.

Teleradiography of the Heart.

Promptly after clinical radiography had reached the practical stage attempts were made to apply the method to the determination of the exact size and contour of the heart. As the result of the recognition of the fact that, owing to the divergence of the rays, direct radiographs were open to criticism on the score of accuracy in regard to dimensions if not of form, various methods of causing the rays to travel in parallel lines were devised, culminating in the orthodiagraph of Moritz. This method, however, requires a rather complicated technique and is not free from subjective errors, disadvantages which Köhler (*Deutsche medizinische Wochenschrift*, January 30, 1908) has found so marked as to cause him to seek a substitute in what he terms teleröntgenography. This consists in making the exposure with the tube from one and a half to two meters from the body, a distance which is sufficient to obviate errors from parallax without being beyond the capacity, he says, of even a medium sized coil. Good negatives may be produced with exposures of thirty to forty seconds while with suitable apparatus this time may be greatly reduced. The depictions of the cardiac shadow obtained in this way are alleged to be trustworthy representations of the size and outline of the organ, while their production is much simpler than that of the orthodiagraphs.

News of the Week.

Presidency of the State Medical Society.—Owing to the fact that ill health makes it impossible for Dr. Edward L. Trudeau of Saranac Lake to act as president of the Medical Society of the State of New York, under Section 2 of Chapter VI of the by-laws, the first vice-president in numerical order, Dr. Arthur G. Root of Albany, becomes the president for the year 1908.

Medical Society of the County of Kings.—At the annual meeting of the society held January 21, 1908, the following officers were elected: *President,* Dr. Onslow Allen Gordon; *Vice-President,* Dr. Joshua M. Van Cott; *Secretary,* Dr. Henry G. Webster; *Associate Secretary,* Dr. William A. Jewett; *Treasurer,* Dr. John R. Stivers; *Associate Treasurer,* Dr. Henry M. Mills; *Directing Librarian,* Dr. James P. Warbasse.

Harvey Society Lecture.—The seventh lecture in the Harvey Society course will be delivered by Professor Otto Folin of the Harvard Medical School at the New York Academy of Medicine on Saturday evening, February 22, at 8:30 P.M. The subject will be: "Problems of Chemistry in Hospital Practice."

Hodgkins Prize of the Smithsonian Institution.—The Hodgkins Fund Prize is to be awarded next year for a paper on "The Relation of Atmospheric Air to Tuberculosis." In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man." In the furtherance of the donor's wishes the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications. In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500 is offered for the best treatise that may be submitted to that congress on the above subject. The treatise may be written in English, French, German, Spanish, or Italian. The essays will be examined and the prize awarded by a committee appointed by the secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis. The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded. Further information will be furnished to intending competitors on application by Mr. Charles D. Walcott, secretary, Smithsonian Institution, Washington, D. C.

George Blumenthal, Jr., Fellowship in Pathology at Mount Sinai Hospital.—This fellowship has been established with a stipend of $500 per annum. All graduates in medicine are eligible. The term is one year. The fellowship cannot be held more than twice by the same person. The object of the fellowship is to further the scientific work of Mount Sinai Hospital and to aid those anxious to obtain a laboratory training. The work done under the fellowship is to be carried on in Mount Sinai Hospital or elsewhere under the direction of the pathologist. Applications may be sent to Dr. F. S. Mandlebaum, the pathologist of the hospital, before March 15, 1908. Committee: A. Jacobi, A. G. Gerster, F. S. Mandlebaum, E. Libman.

Tuberculosis Appropriation.—In his annual report, sent to the Legislature a few days ago, Dr. E. H. Porter, State Commissioner of Health, asks for an additional appropriation of $75,000 to be used in combating tuberculosis, and for $30,000 for the inspection of water supplies supposed to be sources of typhoid fever. The Commissioner estimates that there are annually in the State 50,000 cases of tuberculosis and 15,000 deaths, representing an economic loss of $70,000,000.

The Antituberculosis Movement.—At a meeting of colored people held in Chicago, February 9, 1908, an antituberculosis association was organized with a view to checking the spread of tuberculosis. The following officers were elected: *President,* Dr. A. W. Springs; *Vice-President,* Dr. A. W. Mercer; *Secretary,* Dr. A. W. Williams; *Treasurer,* Dr. George C. Hall.

Finances of the Chicago Health Bureau.—The Chicago Health Department suffered recently very materially at the hands of the City Council's Finance Committee in that the emergency fund of $50,000 asked for by Commissioner William A. Evans was disallowed, the argument being that in the event of emergencies in the protection of the community's health the Council could make a special appropriation. The appropriation of $50,000 for the abatement of nuisances by the Health Department was reduced to $5,000. Then, to round out its work, the Finance Committee took $50,000 out of the appropriation for the general running expenses of the department. This means that Dr. Evans must retrench in every way possible. Health measures he had intended to introduce will have to be abandoned and a number of employees will probably be dismissed.

A Mass Meeting of Antivivisectionists.—The quality of the arguments advanced at the meeting of antivivisectionists held in the Carnegie Lyceum a week ago may be gathered from the following extract from the address of one of the orators, who is reported as calling those who use animals in the course of scientific research "virtuosos of agony, in whom curiosity, vanity, or scientific zeal has supplanted humanity, and to whom harmonies or discords of agony or long-drawn cadences of torture struck from quivering nerves are music." The following curious preamble and resolution was adopted by acclamation: *Whereas,* It is the current belief, borne out by the statements published in the medical press, that the principal theater of vivisection operations in this part of the world to-day is the Rockefeller Institute for Medical Research in New York City, and its adjunct, the Rockefeller Farm, in Somerset County, N. J.; and *Whereas,* It is concurrently reported that the experiments on living animals conducted at these institutions are of a cruel and brutal nature: *Resolved,* That this mass-meeting, echoing a strong humane sentiment in the community, do respectfully petition Mr. John D. Rockefeller to reconsider his program and restrict vivisection in the institute bearing his name as being contrary to the humane sentiment of advancing ethical progress."

Not Christian Science.—Mr. J. V. Dittemorr of the Christian Science Committee on Publication writes that he has positive information that the child whose death under Christian Science treatment in Danville, Ill., was reported in these columns last week was never treated by Christian Science methods, "nor did any member of the family have even the slightest knowledge of the subject of Christian Science. This family seem to have been adherents of some sect which

did not believe in giving medicine, but Christian Science was in no way connected with the case."

Smallpox in Newburg, N. Y.—A number of cases of smallpox have been reported during the past week in Newburg, N. Y., one of the patients being the principal of a public school having eight hundred pupils. The Board of Health has closed this school and is transforming a large house on the outskirts of the city into an isolation hospital. The disease is of a mild type and is supposed to have been imported from Kingston, where there have been a number of cases lately.

Plague in Ecuador.—The State Department has received a dispatch from the American Minister at Quito to the effect that plague is prevalent in Guyaquil.

Influenza in London.—London is now the seat of an unusually severe epidemic of influenza, which many physicians say is the most serious the city has ever experienced.

Hospital Benefits.—At a special performance of "Aida" given last week at the Metropolitan Opera House for the French Hospital the sum of $12,000 was realized, a large part of which will be available for the needs of the hospital. The sum of $5,000 was raised for the Nassau, L. I., Hospital at a hospital matinee and tea arranged last week by Mrs. William K. Vanderbilt, Jr.

City Hospital, New York.—An examination of candidates for interne positions on the house staff of this hospital will be held on March 27 and 28. All applications should be addressed to the chairman of the examination committee, Dr. Smith Ely Jelliffe, 64 West Fifty-sixth street, New York City.

Robbery in a Hospital.—Two microscopes with their lenses were stolen from the laboratory of the Lincoln Hospital, in the Bronx, by a thief who broke into the building last week. He was later captured by the police and identified as a former employee of the hospital who had worked in the laboratory.

Against Quackery in Germany.—Active measures to suppress quackery are being contemplated in Germany. A bill has been drawn and has received the assent of the Council providing fines and imprisonment for irregular practitioners of all sorts and authorizing the prohibition of the sale of patent medicines whose ingredients are kept secret or concerning which fraudulent claims are made.

Physician Speaks From Pulpit.—At the regular morning service in the Third Presbyterian Church of Rochester, N. Y., Sunday before last, the Rev. Paul M. Strayer took as his theme "The Treatment of Moral Consumption," and was followed by Dr. William S. Ely, who delivered an address on the practical problems of the tuberculosis question. In the church calendars distributed at the service was incorporated a circular on tuberculosis issued by the Charity Organization Society.

State Charities Board.—Dr. Enoch V. Stoddard of Rochester, N. Y., has been obliged to resign from the State Board of Charities on account of ill health.

A New Journal.—With the title *The Archives of Diagnosis* an attractive-looking new quarterly appears under the editorship of Dr. Heinrich Stern of this city. It is devoted entirely to the subject of diagnosis, but everything relating to this branch of medicine will receive full treatment in its pages.

A New International Journal of Epilepsy.—Announcement is made of a new journal to be called *Epilepsia*, which is to be an international quarterly, devoted to the study and treatment of this disease from the therapeutic, social, aand judicial points of view. The editorial staff includes the names of H. Claude of Paris, Turner of London, L. Bruns of Hanover, W. P. Spratling of Sonyea, J. Donath of Budapest, who is the active editor for the first year, and L. J. J. Muskens of Amsterdam, secretary.

The "Relief" in Commission.—The hospital ship *Relief* has been placed in commission at the Mare Island Navy Yard, San Francisco, with Surgeon Charles F. Stokes in command. It is intended to have the vessel make a short practice cruise and then meet the fleet on its arrival at Magdalena Bay.

Tuberculosis Campaign.—The Russell Sage foundation has given $10,000 to the State Charities Aid Association for use in organizing methods for the prevention of tuberculosis in this State.

Bequest to Philadelphia Hospital.—By the will of the late Wm. H. Burns of Philadelphia the sum of $25,000 is bequeathed to the Frankford Hospital for permanent improvements.

In Honor of Pirogoff.—In order to commemorate the twenty-fifth anniversary of the death of Pirogoff the cities of Moscow and St. Petersburg have each named a street and a hospital in his honor and have founded annual Pirogoff prizes for research in surgery.

Death of a Centenarian.—The death is recorded in Philadelphia of a man at the advanced age of 108 years. He was a native of Hungary and had been in full possession of his faculties until within two weeks. He was a follower of Kossuth in the Hungarian rebellion of 1848 and he had been in this country for thirty-five years.

Des Moines Physicians' Club.—The following officers for the ensuing year have been elected by this society: *President*, Dr. W. W. Houser; *Vice-President*, Dr. W. W. Coleman; *Secretary*, Dr. H. S. Oyler.

Clay-Becker County (N. D.) Medical Society.—At the meeting of this society, held in Moorhead, the following officers were elected: *President*, Dr. E. W. Frazier of Detroit; *Vice-President*, Dr. A. H. Aborn of Hawley; *Secretary and Treasurer*, Dr. Barton of Frazier.

Muscatine County (Iowa) Medical Society.—The following were elected as officers for this society at the meting held in Muscatine on January 31: *President*, Dr. A. J. Oliver; *Vice-President*, Dr. E. A. Ady; *Secretary and Treasurer*, Dr. Fred L. Appel.

Johnson County (Neb.) Medical Society.—The annual meeting of this society was held in Tecumseh on January 25 and officers were elected as follows: *President*, Dr. C. H. Ziegler of Vesta; *Vice-President*, Dr. G. J. Rubelman of Tecumseh; *Secretary and Treasurer*, Dr. C. R. Snell of Tecumseh.

Italian Society for the Study of Tropical Diseases.—A society for the study of tropical diseases has been founded in Rome through the efforts of Professor Angelo Celli, director of the Institute of Hygiene of Rome, Surgeon-Lieutenant-Colonel L. T. Cipollone of the Italian Navy, and Surgeon-Captain G. Memmo of the Italian Army.

Somerville (Mass.) Medical Society.—The following were elected as officers at the meeting of this society held on February 6: *President*, Dr. C. L. Maguire; *Vice-President*, Dr. W. L. Bond; *Secretary and Treasurer*, Dr. I. E. Stowe.

Obituary Notes.—Dr. Eben N. Hutchinson of Charlotte, N. C., died on January 30, at the age of eighty-one years. He was born near Augusta, Ga., and was graduated from Davidson College in 1845. He was graduated from the medical department of the University of Pennsylvania with the class of 1848 and immediately began practice in Charlotte. For many years he had given up practice and had engaged in various mercantile pursuits.

Dr. B. S. Nichols of Pomona, Cal., died on January 27 at the age of eighty-four years. He was born at Enosburg, Vt., and was graduated from Vermont Medical College at Woodstock. Until 1850 he practised in Vermont and then removed to Whitehall, N. Y., where he remained until 1885. In that year failing health compelled his removal to California, where he had resided since that time.

Dr. Martin J. Dalton of Melrose, Mass., died on February 4 at Tryon, N. C., where he went some weeks ago on account of poor health. He was born in Marlboro forty-eight years ago and was a graduate of the medical school of the University of Vermont. About ten years ago he came to Melrose from Marlboro.

Dr. Hiram G. Wyckoff of Palo Alto died on January 28 at the age of sixty-eight years. He was a native of Illinois and served through the Civil War in the 124th Illinois Regiment. He was a graduate of the Rush Medical College.

Dr. S. E. O'Neill of Ottumwa, Ia., died suddenly on January 31 at the age of seventy-two years. He was coroner of Wapello County and died while preparing to hold an inquest on the death of a man killed in a mine accident. He had been a resident of Ottumwa for almost thirty years.

Dr. David L. Cedarholm of Brooklyn died suddenly on February 7 at the age of forty-five years. He was born in Stockholm, Sweden, and about fifteen years ago came to this country. He was graduated from the Long Island College Hospital in 1896.

Dr. John C. Barron of this city died of typhoid fever on February 6 at the age of seventy-one years. He was graduated from Burlington College and also from Yale, rowing on the first crew organized in 1858. He was graduated from the College of Physicians and Surgeons of this city in 1861, served during the Civil War as surgeon in the 69th regiment, and was surgeon of the 7th regiment until 1871. He retired from active practice many years ago and was a member of the New York Yacht, the Corinthian Yacht, the Shelter Island Yacht, Union League, and numerous other clubs.

Dr. Frank Hazzard Dye died at Philadelphia on February 3 at the age of thirty-two years. He was graduated from the medical department of the University of Pennsylvania in the class of 1899. He was assistant surgeon to the German Hospital and to the Stetson Hospital.

Dr. Aaron K. Baldwin of Newark, N. J., died on February 9 after a long illness from cirrhosis of the liver. He was born in Newark sixty years ago and was a graduate of the New York University Medical School. He had practised in Newark for thirty-five years and for many years was connected with the National Guard as surgeon.

Dr. Stacy D. Williamson of Malone, N. Y., died suddenly on February 5 at the age of thirty-two years. He was graduated from the Syracuse University Medical School in the class of 1901.

Correspondence.

AN APPEAL TO THE MEDICAL PROFESSION OF NEW YORK STATE.

There are now in the Legislature not less than three bills relating to vivisection. There is one relating to optometry. Will you not write at once to your representatives in the Legislature, both Senator and Assemblyman, urging opposition to these measures?

The antivivisection bills, as they are called, are the work of the Antivivisection Society, and the desire is to prohibit animal experimentation. The claim is made that all animal experimentation is unnecessary and that the various discoveries of science made possible by this method of investigation have not been productive of good to humanity. This claim is proven incorrect by a plain statement of the facts from gentlemen of education, intelligence, and scientific attainment, professors in our various colleges, and scientists generally whose very names are synonymous with honor and integrity. They clearly show to any unprejudiced mind the inestimable value to humanity of the work which has been done, and is being done, along this line. The statement has been made that at present there is no restriction whatever placed by law on animal experimentation, whereas the fact is that there is now a law on the statute books which restricts the work to properly equipped institutions. If there have been isolated cases of violation of this law which have gone unpunished, the blame should be placed on those authorized to secure the law's enforcement.

The claim that great cruelty is inflicted on animals in these scientific experiments is denied absolutely and entirely by those in charge of experimental work in this State. There is really no reason for any enactment of a new law on this subject and this should be made very clear to the members of the Legislature.

The optometry bill is the old measure, and should be defeated. This bill defines the practice of optometry as the measurement of the powers of vision and the adaptation of lenses for the aid thereof, all without the use of drugs. This bill gives authority to opticians to do a work and at the same time prohibits the employment of the means necessary to do it. The bill authorizes opticians to adapt lenses to eyes for defects of vision which may be due to diseases in other parts of the body, or to diseases which may be situated in the eyes themselves. The adaptation of lenses to eyes under such circumstances, while improving vision for the time, may be the cause of deferring proper treatment until blindness or even death may be the result. To determine when defects of vision are due to defects in the eyes or to disease requires the ability to make a differential diagnosis, and this knowledge can only be acquired, according to the laws of the State of New York, by four years' study in a medical college. Possibly some restrictions ought to be placed on the work opticians should do, but to give them the power this bill would confer would be to expose the people of this State to perils the members of the Legislature cannot have knowledge of unless we inform them.

The members of the Legislature are honest, sincere men, and their desire is to do what will be in the interest of the State. They listen with great courtesy to the expressed opinions of the medical profession, and it will require conclusive evidence on the part of opticians and others to convince the Legislature that any of these bills are necessary, or even safe, if we in good faith urge disapproval of them.

Will you not therefore at once do what you can in aiding us in defeating these measures by writing the members of the Legislature, that they may be able to act intelligently. (Signed) Frank Van Fleet,

Chairman Committee on Legislation, Medical Society of the State of New York.

THE TREATMENT OF NERVOUS INVALIDS.

To the Editor of the Medical Record:

Sir:—Dr. Frank P. Norbury quotes from my letter on Fletcherism the question if there are many sanatoriums in which the physicians make more than a shallow pretence at finding the real cause for a neurasthenia, and he asks in reply if there are many surgeons who make more than a shallow pretence at finding out the real cause in similar cases. His point is well made. Some time ago a physician in a small town was expatiating upon the general superiority of physicians in such towns, and I asked him if the remarks applied to himself, or to the three other doctors in the same town. The matter gets

down to the *argumentum ad hominem* after all. I know of sanatoriums where a comprehensive study of the patient is really made. Does Dr. Norbury know of any of the other sort? I know surgeons who do not operate upon much more than half of the number of patients who are sent to them for operation, even though the fee is ready, and considerable diplomacy is required to avoid offending the doctors who have sent the patients for operation.

Any surgeon who is right minded and properly equipped is keenly alive to the presence of a psychoneurotic patient in his office, and mighty few such patients get operated upon unless there is strong presumptive evidence that some surgical feature may be a precipitating factor in the case. A pretty good rule is to operate only for such conditions as would call for operation anyway, for anybody. Take hernia or well selected cases of loose kidney for instance. These are cases in which the surgeon can lighten the work of the internist, even though he does not cure the grandmother who transmitted psychoneurotic tendencies to the patient. Knowledge is a handy thing to have in the house. The sum total of knowledge since the days of Alexander von Humboldt has become so unwieldy that we doctors must now follow the example of the lawyers in contenting ourselves with knowing who knows. At the meeting of the Medical Society of the State of New York, on January 29, while the discussion of gastric neurosis was under way, I was strongly attacked for saying that we must regularly eliminate the possible factors of eyestrain, involuting appendices, and bile-tract adhesions, before proceeding to treatment in these cases. Speakers denied that we should even try to get negative testimony upon these points. The difference between firmness and obstinacy has been defined. Firmness is will power, and obstinacy is won't power. God help the dyspeptic patients of the doctor who carries his problems to the *x* power of won't.

A loophole through which diagnoses slip out, occurs in the offices of men whose diagnostic acumen is such that they are overcrowded with work. I have seen in one year four cases of cancer of the rectum that had come from the office of a famous consultant, undiagnosticated. If anything so tangible as cancer of the rectum gets away, how many nervous invalids will have eyestrain hit with the diagnostic arrows? I decline to be classed as a hobbyist because it has seemed to me to be best to send patients to various experts, before proceeding to operation, in many cases.

Internists and surgeons should not indulge in mutual recriminations, because we each see so many cases in which the other side was unobservant. Recriminations belong to the negative, and are consequently destructive. Positive and constructive appreciation of the fine work done in both fields is required if we are to believe that the ideals of our profession are ideals of intellect and of character. We shall always have a herd of people following the psychoneurotic leader of the day, and in two notable cases the leader has been a bellwether—Joan of Arc and Mrs. Mary Baker G. Eddy. The one was victorious in the martial arena, and the other has been victorious in bringing happiness to hundreds who were afflicted with the contagious disease known as nervous prostration. Instead of giving nervous prostration to every one with whom they come in contact, these patients who follow the leader now morbidly carry the suggestion of hope.

We shall be sorry when Mrs. Eddy dies, for the Christian Scientists, like the followers in other similar movements, will rapidly disband, and will go to smash over questions of leadership and of disposal of funds. Fletcherism stands ready to call together some of the scattered herd, and it may be expected to stand at least as an overchewer to some other play. We already have the nomenclature of "divine mastication." I have patients who would call a daily movement of the bowels divine if they could get it. Anything that can catch and hold the appellation of "divine" will march off with the nervous invalids whose precipitating causes for psychoneuroses are overlooked by sanatorium physicians—and by surgeons.

I once heard a surgeon say to a neurologist that he could clean out his office in thirty days—to which the neurologist replied that he had no doubt of it. We ought to clean up each other's offices, at least, and it is our own fault and no one's else right now if undiagnosticated cases of nervous invalidism are allowed to flock to flags of faddists. The requisite amount of knowledge is extant, but the diffusion current of controversy and the short circuit specialists take the main current off the wire.

Robert T. Morris, M.D.

616 Madison Avenue.

OUR LONDON LETTER.

(From Our Special Correspondent

HARD LABOR FOR CONSUMPTIVES—OPSONIC INDEX DURING EXERCISE AND WORK—SUBPHRENIC ABSCESS—LIVERPOOL TROPICAL SCHOOL—OBITUARY: PROFESSORS ANDERSON AND PETTIGREW.

London, January 31 [illegible]

The sanatoria have overturned a good many notions. It has long since been admitted that life in the open air, though a most important factor, was not the only cause of their success. Exercise soon claimed a share and graduated walking has been pushed in suitable cases to an unexpected extent—some patients benefiting by systematic climbing of hills. Still one would hardly expect an advanced patient could perform hard labor, however carefully graduated. This has now been done in a number of cases at the Frimley Sanatorium, established in connection with the Brompton Hospital some two and one-half years ago. Dr. Marcus Paterson was appointed to organize the new establishment, and has now reported to the Medical Society of London on the treatment by severe exercise which in suitable cases he has successfully carried out. He tells that he had noticed while resident in the Brompton Hospital that many patients continued up to their admission their usual occupations, and some of these were by no means light. One case he mentioned was that of a navvy who had a few days before admission worked for forty hours with scarcely any rest and did not seem any worse for it. Many general practitioners could testify to similar facts. Indeed, I think it is a common observation that consumptives constantly continue work long after they are advised not to do so.

Dr. Paterson concluded that if under adverse circumstances patients could thus act without injury they might, under ideal conditions, undertake useful work, graduated according to their physical state. He carried out the idea at Frimley, watching the effect of exercise on the patients, some of whom were at first averse to the treatment, as it was so contrary to their expectations. But their prejudices yielded to their experience, as they found they had only to take such exercise as was well within their powers—some, in fact, had to be restrained from doing more than was ordered. The system has been fully elaborated, and each patient on admission is told he will be treated by exercise and rest and that he must precisely obey the medical officer in both respects, as he cannot himself know what rest or what exercise is required in his particular case.

If a patient on arrival has a temperature of 99° he is put to bed and not allowed to get up until it has fallen below that point. So whenever in others the temperature rises to 99°, rest in bed is ordered. When exercise is begun it is watched carefully—walking up to one-half a mile a day may be tried for a week if no rise takes place. This may be gradually increased by one-half a mile at a time up to as much as ten miles. But at any stage of the gradation a rise in temperature is a call for rest until a fall.

The grades of work which have been elaborated at Frimley may be summarized thus: (1) Carrying baskets of mould or other material; (2) using a small shovel; (3) a large shovel; (4) using a pick-axe. In either of these grades the work is done for four hours a day. A fifth grade is using a pick-axe for six hours a day.

Dr. Paterson considers the basket work the most important of all, and it is a link between walking and labor. It is graduated into three sections by the load (12, 18 and 24 pounds), carried 50 yards up a gradient of 1 in 10.7, *i.e.* a rise of 14 feet in the distance.

The conclusions submitted are that: 1. Suitably selected patients can be gradually trained to do the hardest navvy work for six hours a day, the result being that their general condition is much improved, while some lose their sputum and their bacilli. 2. Certain patients who do not improve on light work show marked improvement on harder work. 3. Those who have slightly overexerted themselves and are kept at rest for the few following days are subsequently not only no worse, but may be in their own opinion better.

The clinical observations at Frimley have for the latter part of the time been checked by laboratory research. Dr. A. C. Inman, superintendent of the Brompton Hospital laboratory, undertook the determination of the opsonic indices of the patients, and he has detailed the results in a separate paper read at the same meeting. Every precaution seems to have been taken to secure reliable results. The personal equation was excluded, as Dr. Inman did not know on whose blood he was working, the specimens being dis-

tinguished by numbers only. Sir A. Wright's work on autoinoculations and immunization appeared to furnish an explanation of Dr. Paterson's success. The far-reaching importance of autoinoculation, spontaneous or artificially induced, might well explain the effects of the graduated labor as seen in the clinical records. Sir A. Wright lays down that autoinoculations follow all active or passive movements which affect a focus of infection and all vascular changes which activate the lymph stream in such a focus. The work done by a patient would, therefore, cause autoinoculation, and this was corroborated by the rise of the temperature and improvement of the patient thereupon. It was often found that patients who were not improving on one grade of work began to do so when a harder task was given. Of course in graduating the work it is possible that sometimes an excessive autoinoculation may be produced, but this will be transient and amenable to treatment by rest. To summarize the results we may say that the laboratory work has confirmed the clinical to a remarkable extent. The value of Dr. Paterson's graduated labor treatment has been submitted to a new scientific test. The opsonic index has shown that exercise can be graduated so as to give just the stimulus needed and can control it as to time and amount.

The discussion on these two papers—if so it may be called—amounted to very little. The President, indeed (Dr. J. K. Fowler), declared they worked an epoch in the treatment of phthisis and further they showed what he had constantly observed that consumptives did not recover under treatment by sports and games, for by them the amount of exercise was not controlled. It was now obvious why such patients got pleurisy from the undue fatigue.

Sir Almroth Wright thought tuberculin treatment was preferable, inasmuch as it could be commenced with minimum doses and increased as might be desirable.

Dr. Maguire observed that it must not be forgotten that the patients must be selected with the greatest care. Otherwise the treatment would fail.

Dr. Poynton said there was more in the sanatorium treatment with graduated exercises than in the autoinoculations induced.

Dr. Paterson, in reply, said tuberculin treatment did not so restore the patient as to fit him to resume his usual work, and Dr. Inman added that tuberculin injections could not equal sanatorium treatment with artificially induced inoculations by means of graduated exercises.

To the surgical section of the Royal Society of Medicine Mr. H. L. Barnard has contributed an instructive paper on subphrenic abscess founded on 76 cases treated at the London Hospital, 21 under his own care. To have clear ideas of the varieties he divided the subdiaphragmatic space into six areas, of which four are intraperitoneal. Gastric ulcer caused one-third of the cases, the appendix one-sixth, hepatic abscess one-sixth. Spontaneous rupture took place in 23 cases, 4 into a bronchus, 2 into the right pleura, 3 into the left, 1 into the peritoneal cavity. Of the 76 patients 36 or 47 per cent. died. Of 12 not operated on all died; eliminating these the figures work out at 37 per cent.

Mr. Barnard thought that all except 12 might have been saved in ideal circumstances, and so deduced an unavoidable mortality of 16 per cent. He thought it dangerous to operate in the diffuse stage and waited two or three days after diagnosis for the inferior pleural angle to become obliterated. The mortality of posterior operations was less than that of anterior. With pus in the right anterior intraperitoneal space, the liver was not pushed down so as to be recognized below the rib margin, but was held up by adhesions. In many cases the temperature was low, but it generally rose to 99° or 100° at intervals. Leucocytosis he found whenever it was looked for. The heart was pushed upwards, not laterally, as in pleurisy. In 56 of the cases empyema occurred. In one case he found x-rays helpful, but he regarded the history of the onset as the chief indication; at the onset there was an "acute abdomen complex." Pleural effusion in these cases he regarded as on a par with hydrarthrosis seen in an infective focus at the end of a long bone—a defensive bathing of tissues threatened with invasion by antibacterial serum.

Dr. De Haviland Hall referred to the importance of early diagnosis, as cases left alone always died.

Dr. Donald Hood regarded fulminating pleurisy as indicating trouble below the diaphragm, and said in eight cases no symptoms pointed to the stomach, although they were really due to gastric perforation.

At a meeting of Liverpool medical men on Saturday, Sir Alfred Jones was present and spoke of the work of the Liverpool School of Tropical Medicine which he thought set the world studying the subject. Liverpool had spent £80,000 on it, and a splendid investment it was, for it had saved thousands of human lives and brought down the African death rate from 30 to 2 per cent. It had enabled Europeans to live safely in Africa and had thereby caused that country to receive a better class of Europeans. The school was now investigating sleeping sickness, which, unless checked, threatened to depopulate the continent.

Sir T. McCall Anderson, Regius Professor of Medicine in the Glasgow University and physician to the King in Scotland, died on Saturday night. He was seized with heart failure at the conclusion of the Burns' anniversary dinner. He graduated at Glasgow with honors in 1858 and after further study on the continent commenced a career as physician in Glasgow which has all along been highly distinguished. He was physician to the Royal Infirmary and other institutions. From 1874 to 1900 he was professor of clinical medicine. In 1903 he represented the university in the general medical council. He was knighted in 1905. A practical physician and teacher of the first order, he was also a highly skilled dermatologist. He published a work on parasitic skin diseases which reached a second edition in 1868, an analysis of 11,000 cases in 1872, and other works in this department, a volume of lectures on clinical medicine in 1887, and contributions to this subject in 1898. Various articles from his pen on clinical subjects appeared in the medical journals throughout his career.

Yesterday Scotland lost another eminent professor of medicine by the death, after a long illness, of Jas. Bell Pettigrew, M.D., LL.D., F.R.S., Chandos Professor of Medicine and Anatomy in the University of St. Andrews. He was seventy-three years of age. In 1860 he was Croonian Lecturer to the Royal Society and President of the Royal Medical Society, Edinburgh. From 1862 to 1868 he was assistant curator of the Hunterian Museum at the Royal College of Surgeons of England, and in 1869 he took the curatorship of the Edinburgh College. In 1874 he was awarded the Godard prize of the French Academy of Sciences. From 1883 to 1887 he was examiner in anatomy at the University of Glasgow. The St. Andrews professorship he has held since 1875. He had served as dean of the faculty. He was a Laureate of the Institute of France and the recipient of many other honors. He was a prolific contributor to medical and scientific publications, the Philosophical Transactions of the Royal Society and the proceedings of various other societies, as well as the medical journals, being frequently enriched by his communications.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

MEASLES AMONG THE NATIVES AND IN THE ARMY—CHOLERA—DIPHTHERIA—THE X-RAY IN LEPROSY—PERSONAL.

MANILA, P. I., December 28, 1907

SINCE the public school building which the American children attend has been closed, measles among this nationality has disappeared almost entirely. A more thorough inquiry among physicians that have practised in the Philippine Islands for more than twenty years reveals the fact that measles has been extremely common among the Filipinos, and that they have not been so immune as they were heretofore thought to have been. Measles among the Filipinos seems to be extremely benign, rarely ever resulting in death, and only in a few instances leaving bad sequelæ. In fact, the disease is so mild that it is an extremely rare thing for a child to be confined to bed or even to the house on this account. It is generally held, however, that if the American measles, which is unquestionably more severe in form, should infect the Filipino population, a much more serious epidemic might result. For that reason, it appears to have been a wise precaution to close the American school. Measles is continually introduced here by the troops, and it is perhaps worthy of note that not one organization that traveled as a regiment has arrived here during the past seven years from the United States without measles having made its appearance among them at some time during the trip.

Cholera still continues to occur in sporadic form in the provinces along the railroad which runs out of Manila, and averages about ten cases per day in as many different towns. For the week ending December 28, 1907, there were

five cases, and four deaths in Manila. Cholera has again been reported near the shores of Lake Lanao, Mindanao, and is said to be spreading toward Iligan and Malabang. The newspaper reports to the effect that Assistant Surgeon Greenleaf, who is on duty in that section, had been stricken with cholera, are erroneous.

The diphtheria situation has shown considerable signs of improvement. The cases that have occurred during the past month have been promptly isolated, the contacts injected with diphtheritic antitoxin, and thorough disinfection carried out in the premises in which they occurred, all of which seems to have a most important bearing in bringing this disease to a standstill.

After more than a year of painstaking effort, with the use of the *x*-ray regularly applied to some twenty odd lepers at the San Lazaro Hospital, there are again some satisfactory results to record. It is understood that these will be published shortly. It is now known that at least two cases are apparently cured and have been negative upon repeated microscopic examination, so that it has at least been demonstrated that even though the cure may not be permanent, yet satisfactory clinical results can be obtained with this form of treatment, and the unfortunate who contracts this disease is not entirely doomed and at least has the prospect of looking forward to something which will arrest its progress and result in the relief from the disfigurement, and produce a cosmetic effect which will assure him against being continually pointed out as a leper.

Captain and Assistant Surgeon Chas. R. Reynolds, U.S.A., who has been on duty during the past year at Fort McKinley as instructor and officer in charge of hospital corps companies, in which position he achieved considerable success, has completed his tour of duty in the Philippines and will return to the United States upon the transport which sails from here January 15, 1908.

The two officers, Captain and Assistant Surgeon Percy M. Ashburn and Lieutenant and Assistant Surgeon Chas. F. Craig, who have heretofore composed the Army Board for the Study of Tropical Diseases, have completed their tour of duty in the Philippines and returned to the United States. The new board will be composed of Captain and Assistant Surgeon James M. Phalen and Lieutenant and Assistant Surgeon Henry J. Nichols.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 6, 1908.

The Treatment of Leukemia with the Mixed Toxins of Coley.—Four cases are detailed by R. C. Larabee. One showed a degree of improvement amounting to symptomatic recovery which has lasted for over four months. Another has shown considerable temporary improvement. A third improved only in weight and general condition. A case of the acute lymphatic type was uninfluenced. Two are still under treatment but there does not seem to be much hope of permanent cure. The author declares that the results justify further employment. At the same time he warns the profession that this remedy in this disease is a very powerful agent. The dosage that one would use in sarcoma is not tolerated here. The initial dose should not exceed a tenth of a drop. It may be given daily at first, the dose being slowly increased. In the cases reported the interval was lengthened as soon as the reactions began to be severe, whether local or general. Severe chills sometimes occurred after a quarter of a drop, and in one case the reactions were so severe as to cause considerable alarm. Certainly, in the writer's cases, good results were obtained without such reactions, though it is possible that more lasting benefit might have been produced had the toxins been administered with greater boldness. If at any time in the course of treatment it becomes necessary to change the preparation or get a new supply, the dose of the new lot had better not exceed half that of the old, since different preparations differ greatly in the intensity of their effects. The effect of the injections on the anemia was marked, the latter being decidedly benefited. Apart from the definite reactions following overdoses, there was no fever. In fact, in one instance, the fever present as a feature of the case was markedly lessened by the injections.

General Paralysis As a Menace to Public Safety in Transportation.—Commenting on the loss of life and limb on American transportation systems, P. C. Knapp records the findings as to occupation in 50 cases in male adults who were in attendance at an out-patient department for various diseases. Five were in public transportation service, four in street traffic and one a boatswain in the merchant marine. Two were stationary engineers. The author points out the menace to the public welfare from having in such responsible places those who are suffering from early brain disease with more or less mental impairment. In such men there is a temporary failure of the brain to work with its normal accuracy. For some reason the man, although he knows the meaning of the signal, and has the visual power to see it and knows what he ought to do in response to that signal, fails to act. In some cases this failure is due to the fact that the man has been obliged to work an excessive number of hours on a stretch, as some of the quotations given above show. It is well known that indulgence in alcohol will cause such a failure, and therefore most railroads demand that their employees shall abstain totally while on duty if not altogether. We also know that, in the early stages of general paralysis and certain other chronic diseases of the brain, perception and memory are impaired, comprehension becomes more difficult, judgment is enfeebled, and action is less prompt. A railway employee with one of these diseases may therefore fail to understand his orders quickly and correctly and act intelligently according to his directions. In other words, as a consequence of his disease, he may be guilty of negligence which may lead to loss of life. The author says that there is little doubt that if men in responsible positions were examined by proper neurologists at regular intervals, many of these incipient cases of brain disease would be brought to light and the dangers attendant on them would be averted.

New York Medical Journal, February 8, 1908.

Indications for Water in Childhood.—M. Barbour gives a summary of the influence of water on the various bodily functions and makes a plea for its greater internal use in children. The healthy infant of several months should take a full glass in the course of the twenty-four hours, the amount being varied according to the weather. The amount should be increased in all conditions accompanied by elevations of temperature. It will restore the loss sustained through the fever, enhance the glandular activities, and by the dilution of the food will enable the gastroenteric tract to absorb more readily the nutriment and so will maintain vitality. Its use in local gastrointestinal maladies is too well known to call for more than mention. In bladder instability due to concentrated and acid urine water will prove of unquestionable benefit. In laryngitis and bronchitis, its ingestion will moisten the bronchial mucous membranes, liquify the viscid expectoration, and act as a mild expectorant. There are, however, certain conditions where the restricted use of water is clearly advisable. Such cases as edema or pleuritic effusion where the extravasation of fluid into the tissues is great, water is certainly contraindicated. In cases where there is a high arterial tension with congestion or inflammation in certain organs, such as the brain in meningitis, or the lungs in acute lobar pneumonia, an increased ingestion of water will aggravate the condition by additionally distending the blood-vessels, and the withdrawal of water is unquestionably the proper treatment. In fact, in any condition where there is congestion in important organs as a result of acute inflammatory processes, the use of large quantities of water is contrary to good judgment.

Therapeutic Use of Soured Milk.—H. Emerson says that the use of soured milk is based on three distinct properties: (1) The fact that pathogenic bacteria do not thrive in a medium that has a marked degree of lactic acid. (2) The process of carbohydrate and proteid disintegration occurring in the souring of milk makes a softer and more digestible and smaller casein curd, and a carbohydrate in a state of partial digestion. (3) Lactic acid activates peptic secretion and digestion. If we are to use soured milk, we must have: (1) Clean, whole milk. This is a necessary prerequisite if we wish to avoid the necessity of pasteurizing or sterilizing the milk before we start the process of souring. (2) The milk should be skimmed fresh, preferably by mechanical centrifugal separation immediately after chilling, subsequent to milking or during the process of chilling. (3) If the milk is not free from pathogenic or putrefactive bacteria it must then be sterilized, to put an end to the growth of pathogenic and putrefactive bacteria, and to enable us to control the results of our subsequent inoculation without the interference of undesirable organisms. (4) The milk should then be inoculated with an exact dose of biologically standardized bacteria. Probably the inoculation with bacteria should be accompanied by inoculation with known cultures of yeasts. The yeast is necessary: (1) To inhibit the overgrowth of pathogenic and putrefactive bacteria; (2) to add flavor which cannot be obtained without it, presumably by the production of aromatic substances such as esters; (3) to attack milk sugar after lactic acid has been formed in the milk, and produce alcohol and carbonic acid gas, which are valuable assistants in the digestion and ab-

sorption of milk and in making milk tolerated by irritable and congested mucous membranes.

Uric Acid: the Formation, Elimination, and Effect on the General System.—E. E. Smith reviews our knowledge on the subject of uric acid, dwelling particularly on its purin origin from the nucleic acid constituents of body cells. The quantity of the uric acid which appears in the urine is the resultant of the following operative factors: (1) The formation of uric acid (*a*) by endogenous purin metabolism; (*b*) by exogenous purin metabolism; (*c*) possibly in a slight measure by uric acid synthesis. (2) The destruction of uric acid by uricolytic ferments, particularly in muscle, kidney, and liver. (3) The retention of uric acid (*a*) by deposition in the tissues; (*b*) by limited excretory capacity. As to its effect, it is stated that it has but a slight degree of toxicity. Aside from the instances in which it is deposited in the tissues, as tophi, infarcts, or as embedded crystals, and produces mechanical injury, it is not known to cause any pathological condition. It is eliminated in increased amount in many pathological states, but this is the result of processes already discussed rather than evidence of its etiological relation to such disease conditions. But as an infarct or calculus or in the form of irritating crystals we cannot question its injurious action. As to the relation of uric acid deposits to the slight local necrosis which accompanies their deposition there is reason, though inconclusive, to attribute the necrosis to the action of the urates. The fact that joint cartilage has a special affinity for urates seems established, and it is reasonable to believe that the deposition results because of this affinity and because of the excess of uric acid in the blood. The cause of the excess may be increased formation, diminished destruction, and, probably most important, diminished elimination.

The Hand as a Therapeutic Agent.—An interesting paper is presented by J. M. Taylor in which attention is called to useful auxiliary measures which physicians may themselves employ with great advantage by adaptation of manual therapy, nerve pressure, massage, passive movements, chemotaxis, etc. The medical profession is as a rule very ignorant on the subject of manual treatment. Few physicians possess fair motor intelligence. Refinements in the education of touch, the perceptive hand will form an essential part of clinical diagnosis as well as of therapeutic teaching of the future. Any physician of moderate deftness can acquire enough skill to enhance greatly his own usefulness, but motor intelligence is not always on a par with intellectual gifts. In massage the following points must be borne in mind: (1) The rate of movements; of paramount importance are deliberation, nicety of rhythm, and confident gentleness; overrapidity is usually disturbing. (2) Depth and graduation of pressure; this should be nicely adjusted, and increased to the degree and amount required. (3) Quality of skin touch; whether dragging on the surface, pulling on superficial structures, hairs, etc., or (what is correct) firmly holding the surface tissues, seizing in turn layer after layer, with increasing grasp, while proceeding deeper, as the séance progresses, using the upper tissues to influence those underneath, till the lowermost are reached. (4) The length of time consumed. The customary full hour is often too much; an adept can do all that is needed in forty to fifty minutes, often less; more is fatiguing, often exhausting to frail persons. Subjects who "enjoy all they can get" are welcome to it; nevertheless, even then it may readily induce hurtful byeffects. (5) The kind and degree of exposure of the parts has much to do with the results. Each part should be covered immediately after treatment with a warm fabric, usually a blanket. Some persons suffer violent vasomotor reaction after massage, become chilled, or sweat profusely, or experience an extreme prostration. (6) General massage is exhausting to many invalids, especially to convalescents from infection, or to especially fragile persons, and in proportion as subjective overtension is maintained. It is an evidence of capacity in an operator, more often instinctive than acquired, to induce and maintain complete relaxation in the tissues of the subject. The foregoing are a few of the many interesting points brought out by the author.

Journal of the American Medical Association, February 8, 1908.

Gastric Ulcer.—W. F. Cheney holds that many cases of so-called chronic dyspepsia, characterized for weeks or months by flatulence, water-brash, burning and distress after food, where the epigastrium shows tenderness and the test-meal hyperacidity, are in reality gastric ulcer, even when the feces show no occult blood. If, in such cases, a month's ordinary treatment for the condition does not cause improvement, he has learned to insist on a rigid course directed to the cure of ulcer, even though no positive evidence of its presence has yet appeared. He reports several cases and gives his conclusions, not from these merely but from his experience with the groups they represent, substantially as follows: 1. There is an early stage of gastric ulcer, lasting for weeks or months, during which rigid medical treatment can effect a cure; but its clinical picture does not correspond to the classical one and the diagnosis at the time must be inferred rather than positively demonstrated. 2. In the later stage, commonly described as gastric ulcer, the symptoms are really due to complications rather than to the original disease; (*a*) to perigastric adhesions; (*b*) to pyloric stenosis; (*c*) to gastric dilatation and retention; (*d*) to localized peritonitis (*e*) to the opening of a large blood-vessel; (*f*) to perforation of the stomach wall—complications beyond medical treatment and falling into the surgeon's domain.

Ambulatory Treatment of Hip-Joint Disease.—E. G. Abbott and H. A. Pingree review the different methods of the mechanical treatment of hip-joint disease, and point out that no one method embodies all the essential principles. In order to secure the requisite fixation, traction and protection without too great expense, it will be necessary to combine the features of those in common use, and turning to those analyzed, he finds that the plaster-of-Paris spica bandage affords the best fixation, the adhesive plaster straps the best traction, and the iron brace which extends beyond the sole of the boot, together with the high shoe on the opposite foot, and crutches, the best protection. The cost of this combination amounts to about $5.75 for a child of average size. Details are given for the application of this combination and the objections to its use reviewed. The clinical results with this apparatus have been very satisfactory. About 200 patients have been under observation and their progress noted, and comparisons have been made with patients treated by the other methods. The authors' conclusions are summarized as follows: 1. The patient is under excellent control, as the apparatus cannot be removed and replaced by the patient or family at will. 2. The appliance can be produced at much less expense than any other that is efficient. 3. The duration of the treatment may be lessened, which is a factor to be thought of; there is less danger of abscess formation, and the preservation of the joint structure is more certain. 4. Finally, the position of the limb can be regulated to a nicety otherwise obtained only through the use of expensive apparatus accurately adjusted by skilled hands and kept constantly under the closest supervision.

Etiology of Epithelioma.—A. E. Hertzler proposes a chemical theory of the origin of epithelioma based on the hypothesis that "the epithelial cells are held in restraint by a chemical difference between them and the underlying connective tissue, probably the basement membrane or its equivalent, and that in malignancy there is a disagreement of the balance, usually by a lessening of the acidity of the connective tissue." He adduces a number of clinical facts in support of this hypothesis, all based on the assumed predominance of the alkalinity at the points where cancer occurs. His conclusions are summed up by him as follows: "1. Cancer occurs at that point where irritation and exposure to an alkaline secretion coexist. 2. When a chemical which has the power of combining with the acidophilic elements is injected into a tissue made up of epithelium and connective tissue the epithelium proliferates and invades the connective tissue, simulating the process in beginning epithelioma. 3. The same chemical process which prevents blood from coagulating limits the invasion of one tissue by another. Epithelium everywhere rests on a tissue similar to the membrane elastica of the blood-vessel. It is this layer that confines epithelium within the normal limit. 4. The aberrant growth of cells is but the expression of some disturbance in the chemical relationship of the different kinds of cells. The results of experiments, based on the knowledge of tinction chemistry, permits us to state in general terms the nature of such disturbance of chemical balance."

The X-Ray in Oral Surgery.—G. E. Pfahler describes a focusing device for the *x*-ray tube which, with slight modification, is applicable to any diaphragm, does not expose the operator to the ray, is convenient to operate, and renders results accurate. It consists of a piece of sheet iron or lead that will exactly cover the diaphragm opened. To the center of this is screwed a piece of brass tubing 8 in. long and ¼ in. bore, which is arranged to contain a second piece of tubing similar to a telescope. For use with the Roentgen table the sheet iron is made square, 13.7 c.m. (about 5½ inches), which exactly fits into the diaphragm clamp. To the center of this is attached the telescopic tube. This is then adjusted so that the rays pass through the tube on to a fluorescent screen lying underneath. The focus point will have to be exactly over the center of this tube or no rays will pass through. Having found the position of the Roentgen tube that will

exactly allow the rays to pass through the brass tube and cast a circle on the screen, the operator knows the focus point is exactly central. The Roentgen tube is then marked by a piece of adhesive plaster so that it can be replaced at any time in exactly the same position. This focus finder is then removed and the diaphragm replaced. The focus point will be exactly in the center of the diaphragm. He finds this device of great value, especially in oral surgery, where small, sharp fields are desirable. By careful technique he thinks every portion of either jaw can be clearly shown on the plate, and gives directions for photographing the different regions. Necrosis of the bone as well as malformations and malpositions of teeth can be clearly shown, and the exact lines of fractures determined. The condition of the antrum of Highmore can best be studied by this means, and it is a valuable aid in the diagnosis of malignant disease. Pfahler holds that every obscure condition should be tested by the *x*-ray, which should also be used to determine exactly the extent of disease, even when the general diagnosis is clear. By this, much embarrassment and suffering will be avoided.

Complications of Alcoholism.—L. D. Frescoln says that alcoholism of itself is a manageable affection from a medical point of view, and that it is in the accidental complications and sequelas that we find trouble. He enumerates about twenty disorders which he thinks can be properly considered such, as observed by him in 2,000 cases in the Philadelphia General Hospital. The chief of these, besides delirium tremens, are the different types of nephritis, pneumonia, pulmonary tuberculosis and myocarditis. Besides these there were observed a large number of morbid conditions recorded as complications, but which were merely associated or accidental troubles running hand in hand with the alcoholism, and perhaps antedating it, but not pathologically its consequence. There were also many probable defects in the records due to oversight, etc., and the figures are therefore somewhat deceiving. Only four cases of arteriosclerosis, for example, are recorded in the 2,000, while the condition, he thinks, must have existed in a very large percentage of the cases. The habits that go with alcoholism are important factors, and explain many of the complicating and incidental diseases; of course as a contributing factor to disease, there is the greatest difference between the use of alcohol and the condition called alcoholism.

The Lancet, February 1, 1908.

Open Safety-pin Removed from the Esophagus of a Child Aged Five Months.—D. B. Paterson considers that the use of probangs in such cases is an obsolete method and makes a plea for the modern direct method of esophagoscopy. In the present case, having ascertained the situation of the point of the pin, which was directed upwards, he passed a long tube over it and left the tube *in situ*. Then with a pair of straight forceps passed through this tube he was able to draw the pin into the tube and remove it.

Development of Secondary Nodules in Suture Scars After Operations for the Removal of Cancer.—A note on this topic is contributed by C. W. Mansell Moullin. He records the case of a man of 48 years in whom cancer had supervened on an old gastric ulcer. At operation a tight stricture of the pylorus was found with some disseminated nodules scattered over the serous surface of the stomach. Posterior transmesocolic gastroenterostomy was done and recovery was uneventful. When seen six months later, he was much better, so far as pain was concerned, and was considerably stouter, but there was a double row of cancer nodules on either side of the laparotomy wound. Two sets of sutures had been inserted: one, of stout catgut, interrupted, passing through all the layers of the abdominal wall except the skin; the other, of finer catgut, continuous, through the skin only. Practically all the suture points of the former series were infected; none of the latter. It was evident that cancer cells from the peritoneal cavity had invaded the wall wherever the parietal peritoneum had been pierced by a suture. The sutures had not carried the cancer germs in, for they had never been near the growth; but either by perforating the serous layer or by acting as irritants they had helped the development of the invading germs to such an extent that each point had become a cancer nodule. The immediate source of infection was in all probability the nodules noted on the serous coat of the stomach, which were constantly rubbing against the anterior abdominal wall. The line of the laparotomy incision itself seemed to be intact between the two rows of nodules. The same explanation, it seems to the author, is the more rational one in those cases in which cancer recurs at the suture points after operations for mammary carcinoma. It is not that the cancer germs are carried in by the needle or suture mechanically at the time of the operation and left to grow in the puncture made, but that they are more widely distributed in the surrounding tissue interstices than is apparent at the time, and only develop, or perhaps develop first, at those points where the resistance of the tissues is lowered by the presence of an irritant such as a suture.

The Value of Cytodiagnosis in Clinical Medicine.—Special points referred to by J. E. H. Sawyer are predominancy of small lymphocytes, and of polymorphonuclear cells, predominancy of epithelial cells, and effusions due to malignant effusions. Concerning cell counts in general, the author declares that it is necessary to obtain the fluid as soon as possible after it has been removed from the body. After a few hours the cells begin to degenerate and become in consequence very much more difficult to recognize. Some of the fluid should be centrifugalized gently and then the fluid poured off and a film made of the sediment. Care should be taken not to centrifugalize too long or too forcibly or otherwise many of the cells will be destroyed. It is much better to centrifugalize the fluid than to let it stand in a conical jar and then examine the sediment, for the cells degenerate very rapidly. After a film has been made it can be stained at leisure. The two stains found most useful are Leishman's and Jenner's. The differential count should be made under the one-twelfth oil immersion lens and to get an accurate percentage of the cells 500 should be counted. In many instances, however, and especially in cerebrospinal fluid of which only a small quantity can often be obtained, it is impossible to count so many on account of the scarcity of the cells. The differences in the percentages of the cells to each other in the various pathological conditions are often so great that usually such a large number of cells need not be counted. General conclusions are as follows: (1) Effusions of tuberculous origin contain a large percentage of small lymphocytes, ranging from 59 to 100 per cent.; (2) effusions of acute inflammatory origin, a large percentage of polymorphonuclear cells, ranging from 64 to 97 per cent.; (3) mechanical effusions contain chiefly endothelial cells, the highest count in the author's series being 98.8 per cent.; (4) effusions due to malignant disease can rarely be diagnosticated by count methods alone, but when such a condition is suspected to be present, the predominance of endothelial cells would greatly support that view.

The Unequal Distribution of Filariasis in the Tropics.—G. C. Low describes the researches he has made in the direction suggested by the title of his paper, which must be read in the original by those interested. The intermediate host of the filaria is a suitable mosquito (*e.g. Culex fatigans*), but it is difficult to understand, says the author, why a disease should remain localized to certain parts of the world although its intermediate host is much more widely distributed.

British Medical Journal, February 1, 1908.

The Critical Solution Point of Urine.—W. G. Atkins says that the most exact method of determining the efficiency of the kidney as an excretory organ is the determination of the total solid content of the urine as shown by the depression of its freezing point below that of pure water. The time hitherto required in making this test has been almost prohibitive for the examination of single specimens. The author has devised a new method which is freely described in his paper but the details of which cannot be given here. He concludes that the examination of urine by this method of the critical solution point method gives a reliable measure of the functional activity of the kidney producing it, and may be employed in all cases where cryoscopy can be. The difficulty of obtaining a clear solution with blood or blood serum has so far prevented the application of this method to their examination. The rise in critical solution point should not be less than 8° C. for the urine from a healthy kidney; ordinarily the rise is from 11° to 16° C. Each determination can be made in ten minutes, without weighing and without any special or costly apparatus. Only a small quantity of urine is required, not more than 5 c.c. for each determination; when specimens have to be collected by catheterization of the ureters this is a saving of time and occasions less inconvenience.

Inherited Syphilis.—A general consideration of this subject is given by R. C. Lucas, who discusses the effects of the specific virus on the various bodily organs. He believes that the mode of transmission is invariably through a syphilized mother. To his mind inheritance from the father alone is put entirely out of court. How, he asks, can a spirochete which is highly motile and whose length averages rather more than the diameter of a blood corpuscle penetrate an ovum 1-200 of an inch in diameter and multiply without destroying it? It would seem that when virulent the spirochetes penetrate the chorion or

placenta and occasion miscarriages, macerated fetuses, or premature births; but when the virus is attenuated by time or treatment the placenta forms a complete protection to the developing fetus, and it is the separation of the placenta at birth which allows the infection to take place through the umbilical vein. Hence the regularity of the secondary exanthematous stage from a fortnight to three months after birth. In these cases the separation of the placenta is the first stage and corresponds to the chancre of acquired syphilis. The author states that the milk of a syphilitic woman when received into the alimentary tract of an infant need not convey infection to a child. He also calls attention to the need of criticism in diagnosis. He says that every deformity, from dislocated hip to cleft palate, all defects such as hernia, infantile paralysis of various kinds and even nevi, have been described by various writers as dependent on inherited syphilis, and as if better to cover the anomalies the term "parasyphilis" has been invented to add to the confusion. Such generalizations he regards as crude and misleading. He does not deny that persons whose constitutions have been weakened by disease are liable to produce degenerates in succeeding generations; but in future the most certain test of the disease being syphilis will be the presence of the *Spirochæta pallida* in the part affected. This organism has an extraordinary persistency, producing local symptoms after lengthened periods, but happily we have in mercury and the iodides drugs which control its development and bring about its destruction.

Berliner klinische Wochenschift, January 27, 1908.

Extraperitoneal Cesarean Section.— Fromme says that while abdominal cesarean section under ideal conditions should have no mortality whatever, in practical work this result cannot be attained. Owing to previous attempts at delivery, repeated examinations, etc., the uterus is likely to be infected and then cesarean section is attended with considerable risk owing to the danger of peritonitis induced by the uterine germs. Frank has recently described a method of abdominal cesarean section which is performed extraperitoneally. The incision is a transverse one close above the symphysis and the peritoneum overlying the uterus is pushed back, a procedure which is readily possible if labor has already begun, as in that case the attachments between the membrane and the organ are very lax. Frank's technique is to suture the visceral and parietal layers of the peritoneum together in order to shut off the abdominal cavity and then to open the uterus through a transverse incision, but Fromme finds that it is possible to gain sufficient room to make a longitudinal incision and considers that this is much preferable, as a transverse uterine scar is more likely to give trouble in future pregnancies. The drainage of the abdominal wound advocated by Frank is also undesirable and vaginal drainage is sufficient. Fromme has operated on four patients by this method, all of whom when brought into the clinic were in such a condition as to have rendered the usual cesarean section very dangerous. Three of the patients did well, but the fourth died of eclampsia on the next day and at the autopsy it was found that there was a beginning peritonitis about the uterus.

Münchener medizinische Wochenschrift, January 14, 21, and 28, 1908.

The Effect of Electrical Stimuli on the Distribution of Blood in the Human Body.—Geissler describes a series of experiments undertaken to determine the effect of electrical currents on the distribution of the blood. One arm of the subject was placed in a plethysmograph which was provided with an index that recorded its excursions on a kymograph. One electrode was connected with the water in the plethysmograph and the other was applied either to the back of the neck or to the other extremities. Numerous precautions are necessary in carrying out these experiments and are detailed by the author. As the result of a considerable number of observations it was found that electrical stimuli produce a decrease in volume of the blood-vessels. This effect is produced both by galvanic and by faradic currents and there is no difference in regard to the anode or cathode. Subject to individual variations the degree of the decrease in volume depends on the strength of the current. Observations were also made on the blood pressure and pulse rate. It was found that in general both the galvanic and faradic currents gave rise to an increase in blood pressure which once reached 14 mm. but was usually between 5 and 10 mm. The rise did not always correspond to the strength of the current. The behavior of the pulse was irregular, sometimes increasing, sometimes diminishing in frequency. The author believes that these experiments indicate that the heart and blood-vessels are susceptible to influence by electrical stimuli and that this may be made use of practically.

The Ophthalmoreaction in Tuberculosis.—Blum and Schlippe as the result of a considerable number of observations, some of which were controlled by autopsy and others by the injection of tuberculin, come to the conclusion that the reaction very frequently indicates correctly the presence or absence of tuberculous disease. A negative reaction does not exclude tuberculosis and it is also possible that further autopsies may show that it may be positive in nontuberculous subjects under certain exceptional circumstances. Furthermore it must be borne in mind that while the reaction indicates the presence of tuberculous disease, this does not prove that the illness in the course of which the reaction is performed is necessarily of tuberculous nature. In another article in the same number Schröder and Kaufman in addition to reporting their own observations, present a summary of the cases so far published in which this reaction has been used. The total number of cases is 1,882. Of this number 971 were in tuberculous individuals, and the reaction was negative in 11.5 per cent.; in 284 suspected cases the reaction was negative in 48.6 per cent.; in 627 nontuberculous cases it was negative in 87.3 per cent. The authors consider that it is not quite so reliable as the injection of tuberculin, but they believe that it is less often positive than the latter in individuals having small encapsulated foci in glands or at the apices of the lungs, and that this may to some extent explain the disparity in the results obtained by the two methods. They regard the ophthalmo reaction as practically harmless if dilute solutions are used and prefer it to the subcutaneous injection on this account as well as owing to its convenience.

Eighty Lumbar Anesthesias Without Failure.—Holzbach considers that this method does not deserve the criticisms that have been directed at it and describes the technique now in use at Sellheim's clinic, by means of which the last eighty cases have been anesthetized without misadventure. An hour and a half and again half an hour before the beginning of the operation the patients are given an injection of .01 g. of morphine and .0001 g. of scopolamine. The needle is introduced between the second and third lumbar vertebrae in the midline with the patient sitting up in bed. An important point is to prevent the motion of the needle that is likely to be communicated to it during the injection if it is connected directly to the syringe. To avoid this a piece of rubber tubing should be interposed. The anesthetic used is stovain, .04 to .08 g. with .0001 to .0002 g. of adrenalin, the two not being mixed until just before the injection. The patient is kept upright for five minutes and is then slowly and carefully allowed to lie back against the pillows with the trunk elevated. In the transfer to the operating table care is again taken to keep the head elevated. The Trendelenburg position is used, though the patient is allowed to assume it only very gradually. The theory is that as the anesthetic is lighter than the cerebrospinal fluid it will float on top of this if the change in position is effected slowly. The anesthesia usually lasted sixty minutes and in fourteen cases the operation had to be completed under ether, though only a very small amount of the latter was necessary.

Pentoses in the Feces, and Their Quantitative Determination.—Jolles says that although the urine has been studied from the standpoint of its possible pentose content the feces have received little attention in this regard. He reports the results of a series of observations made on a patient with pentosuria, who excreted from 25 per cent. to 38 per cent. of pentose, amounting to four or five g. a day. Jolles describes a method for the qualitative determination of pentose in the feces and another for the quantitative estimation. It was found that this patient excreted 4.7 per cent. of pentose in the feces (dried), while a normal individual excreted only .14 per cent. to .26 per cent. In order to test the effect of diet, both of these persons were put for three days on a regimen almost entirely free from vegetables, with the result that the feces of the patient contained 4.53 per cent. of pentose, while those of the normal person had only traces too small to estimate quantitatively. A preponderatingly vegetable diet was then given to both during three days, with a result that the patient excreted 6.71 per cent. and the normal person .59 per cent. in the feces. The nature of the pentose was not determined. The author recommends that systematic quantitative determinations of this sort be made in hospitals where the necessary facilities are available.

Vaginal Operation vs. Laparotomy.—Lehmann reviews the comparative merits of these two methods of operation, greatly to the advantage of the vaginal route. In spite of the progress that has been made in the methods of suture and in incisions, such as the transverse incisions of Küstner and Pfannenstiel, the danger of hernia and the deformity of a visible scar still remain. A number of the most prominent gynecologists now perform more than 80 per cent. of their operations through the vagina, and Leh-

mann adopts the view that laparotomy should be performed only when vaginal operation is contraindicated. The contraindications are, however, only malignant new growths or the suspicion of such, and tumors whose growth is principally lateral. Solid tumors such as myomas if they are not too broad may be removed by the vagina even if they reach to the umbilicus. In such cases they are cut into small portions and removed by morcellement. Non-malignant cystic tumors can readily be removed from below even if they reach to the costal border and occasion severe dyspnea through pressure on the diaphragm. Of the operations for retroversion of the uterus the author prefers vaginifixation, and he also speaks highly of vaginal cesarean section as a means of rapid delivery when the pelvic measurements are normal. He admits, however, that in every case of vaginal operation everything should be prepared for a laparotomy should this be necessary.

Meat Poisoning and the Widal Reaction.—Liefmann says that while it has been recognized that in very rare instances typhoid fever may exist without a Widal reaction being obtainable, it is also true that a positive Widal may be present in an acute illness other than typhoid fever. An instance of this kind occurred in a garrison of which fifty soldiers as well as twelve inmates of a neighboring home for the indigent within the space of a few days developed an acute illness which at first was taken for influenza, but on the appearance of diarrheal symptoms was diagnosed as due to food poisoning. These patients all gave a positive Widal reaction and from the stools of some of them a Gärtner bacillus was isolated. The serum also reacted with this organism, but not in as high dilutions as with the typhoid bacillus. The meat supply was suspected and it was found that at the time when the cases of illness occurred both the garrison and the home had been supplied with the same mixture of chopped meats from a single butcher. One of his clerks was somewhat indisposed at this time and it was discovered that his serum, as well as that of another clerk who complained of no symptoms, also agglutinated the typhoid bacillus. The author concludes that when the Widal reaction is performed in a laboratory the examiner should be supplied with a brief clinical history of the case, as in the present instances in which the agglutination was positive in dilutions of 1-50, 1-100, and in many cases much higher, a laboratory diagnosis of typhoid would have seemed justified.

Deutsche medizinische Wochenschrift, January 9 and 16, 1908.

The Ophthalmo-Reaction in Tuberculosis.—Schenck says that while as yet it has not been determined for this method what is the minimum dose which on yielding a negative result enables it to be said definitely that the subject in question is not tuberculous, for routine use it is wiser to use only two drops of a ½ per cent. tuberculin dilution. It is important that this be freshly prepared. It is not a sufficiently large dose for all cases, but still is the most advisable for regular use. It is also extremely important to inspect the eyes carefully for any possible differences that may exist between them and also to detect any inflammatory conditions, which always contraindicate the ophthalmo reaction. The advantages of the method over the injection reaction are that it is simpler, less dangerous, and may be applied in febrile cases. The reaction was positive in every one of eight tuberculous patients tested, in 48.3 per cent. of 29 patients suspected of tuberculosis, and in 14.28 per cent. of 63 unsuspected cases. In 30 cases in which tuberculin was injected as a control the two reactions were the same in 25 instances. The general reaction to tuberculin injection after the ocular reaction has subsided causes the latter to reappear again. If the ocular reaction is positive the probability of the existence of tuberculosis is very great, but if the result is negative while there is good clinical evidence of the disease, the finding should be controlled by a tuberculin injection. The fact that it sometimes cannot be obtained in advanced cases does not militate against its value, since the diagnosis is not in question under these conditions.

Functional Diagnosis in Intestinal Disease.—Aldor says that high irrigation with diluted Carlsbad water is an effective means of treating chronic intestinal catarrhs, while the action of drugs is more or less symptomatic. Successful dietetic treatment of these conditions depends on an exact functional diagnosis. When such cases are carefully studied it will be found that in many instances chronic intestinal catarrh is accompanied by disturbances of gastric function, which form a useful field for therapeutic measures. In diarrhea accompanied by achylia hydrochloric acid is a valuable remedy. Investigation of intestinal function by means of Schmidt's diet is of much service, but the administration of raw meat as part of the test is superfluous. The formation of gas, and alkaline reaction in the feces indicate increased proteid putrefaction, if accompanied by acid reaction, carbohydrate fermentation. If the former condition is plainly evident it is safe to assume that the entire intestinal tract is involved. Functional examination of the intestinal tract is useful in determining what types of food are the most suitable in the case under consideration. If the meat test is positive, the proteids are cut down, and the carbohydrates when the fermentation test is positive. Gelatin is an ideal food for patients who are unable to take albumin on account of a positive meat test.

The Treatment of Injuries of the Liver.—Neumann describes twenty-two cases of injuries of the liver of various sorts which were treated surgically. Two of the number were stab wounds, six gunshot injuries, and fourteen ruptures of the organ were due to blunt violence. In seventeen cases there were serious injuries to other viscera besides the liver. Both of the stab wound patients, four of the gunshot patients, and four of those with ruptures of the liver recovered. The author is in favor of prompt laparotomy in both stab and gunshot wounds in which there is an injury which it is suspected may involve the abdominal cavity. Even if there is only a probability of this, opening the abdomen is indicated, and any wound apparently involving only the abdominal wall should be laid open freely in order to determine whether or not it is a perforating one. In twenty-one cases in which the patients were admitted soon after the injury there was no noteworthy abdominal distention, and observation in accordance with Heineke's statement that early meteorism by itself speaks against rather than for a serious injury In dealing with ruptures of the liver prompt operation is often wonderfully effective, and three of the author's recovered cases were instances of very severe trauma. For controlling the hemorrhage he prefers packing to suture, but states that in order to be effective large amounts of gauze must be used. In one instance eleven and one-third meters of gauze bandage 20 cm. wide were introduced for this purpose. Portions of liver tissue partly sequestrated and whose future nutrition seems doubtful should be resected; thus, in one of the author's cases followed by recovery the entire left lobe was removed.

The Conjunctival Tuberculin Reaction.—Levi says that this term is preferable to the ordinarily used one of ophthalmo-reaction. He tested the measure in forty-one cases of demonstrated tuberculosis with 85 per cent. of positive results, the six negative patients being very far advanced and cachectic. In fifty-four suspicious cases 40 per cent. of positive results were obtained, the method apparently being a little less delicate than the hypodermic injection of tuberculin. Two hundred and thirty-five individuals either entirely healthy or showing no signs of tuberculosis were also tested. Of this number six, or 2.5 per cent., gave a positive reaction. Two of these also gave a positive result on the hypodermic injection of tuberculin. One of the patients dying of diabetes, at the autopsy showed no evidences of tuberculosis. The author thinks favorably of the method on account of its convenience, but states that a positive reaction does not always indicate tuberculosis, especially not in typhoid fever patients, while negative results do not certainly preclude the disease, particularly in anemic and cachectic persons. Owing to the hypersensitiveness which appears in 75 per cent. of nontuberculous individuals the same eye should not be used a second time in case the first application has been negative.

Treatment of Carbuncles.—Reissman gives the following advice: Do not abort a carbuncle by injection; do not poultice; do not cut, unless there is a very serious and extensive involvement of the adjacent tissues. The Bier hyperemia gives excellent results and is helpful in alleviating the pain. The general plan of treatment, while, of course, modified to suit individual cases, is this: If the inflammation has attained quite considerable proportions with a good deal of induration and no opening or outlet, I make a small incision about a quarter inch in length under local ethyl chloride anesthesia and then apply a cup large enough to extend a little beyond the external margin of the swelling. This cup is left in place from ten to twenty minutes at each sitting. On removal of the cup the surface is cleansed and a plain wet dressing is applied. This treatment carried out for five to six days will in nearly all cases effect a cure which has been painless from the beginning and has left the patient free from discomfort all the time. A serviceable cup may be devised with a glass, a piece of cotton and a match.—*Medical Times.*

Book Reviews.

Bilharziosis. By Frank Cole Madden, M.D. Melb., F.R.C.S. Eng.; Professor of Surgery, Egyptian Government School of Medicine; Senior Surgeon Kasr-el-Ainy Hospital, Cairo. Illustrated. New York: William Wood and Company, 1907.

Many more cases of bilharziosis are now seen in the United States than in the past decade, owing largely to the increased immigration from the islands of the West Indies, where there are a number of endemic foci of infection, so that physicians, especially those of the Atlantic coast, are not infrequently meeting with more or less advanced cases of this disease. It is not unlikely that some of the workers returning from the Panama Canal Zone may have become infested with this parasite, and may spread it in this country. It is, therefore, most timely and important that a monograph of this scope should be placed within the reach of the American practitioner. The volume is most excellent in every regard. The illustrations, almost all of which are from photographs, give a very complete picture of the parasite and the lesions produced by it. The writer holds the theory of invasion proposed by Looss, that the ciliated embryos or miracidia penetrate the skin, and finding their way to the liver there pass through a sporocystic stage, the young worms of both sexes developing and appearing in the veins of the liver, and by the portal circulation finally invading the mucous membranes of the intestine and bladder. In both these situations they give rise to hyperplastic new growths and extensive ulcerations. The diagnosis is made by finding the ova either in the stools or in the urine. The symptoms and treatment of the disease are very fully given. The present volume may, therefore, be considered a very valuable addition to our knowledge of this important tropical disease, especially for those who cannot consult the German publications on the subject, particularly those of Professor Loos, which have appeared in a very complete form in Mense's Handbuch der Tropenkrankheiten.

Introduction à la Psychiatrie Clinique. Par le Professeur Emile Kraepelin, professeur de psychiatrie à l'Université de Munich. Traduite sur la Seconde Edition Allemande, par MM. Albert Devaux et Prosper Merklen. Préface de M. le Docteur Dupré, professeur agrégé à la Faculté de Médecine de Paris, médecin des hôpitaux et de l'Infirmerie spéciale de la Préfecture de Police. Paris: Vigot Frères, 1907.

Kraepelin is without doubt the most distinguished psychiater of recent times. It does not, therefore, excite surprise that his writings are translated from the German into the other modern tongues. This French translation of the second edition of his Introduction to Clinical Psychiatry is a literal translation and well done. The second edition contains two additional lectures and a number of corrections of the original text, especially alterations in the diagnoses of some of the numerous cases used as illustrative examples in the lectures. The frankness with which the author makes these alterations indicates his innate desire for accuracy; and the careful descriptions of the cases reflect the free interchange of opinion and discussion between the master and his assistants which is conducive to the best work and for which Kraepelin is peculiarly noted. Theoretical discussions are practically eliminated. Cardinal signs and symptoms are emphasized for diagnosis. Several chapters are devoted to dementia præcox in which Kraepelin finds some general analogy with dementia paralytica. There are many things in this work which are at variance with expressed French psychiatry, but such books as this and de Fursac's Manual (based on Kraepelin's writings) are calculated to do no harm at least to the somewhat conservative French school. The title is misleading. Many buy the original or the English translation under the impression that it is Kraepelin's textbook; whereas it is chiefly a description of cases. Could not this confusion be prevented by entitling the work "Clinical Lectures on Psychiatry?"

A System of Medicine by Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College; and Humphrey Davy Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital and to the Victoria Hospital for Children; Sometime Fellow of St. John's College, Cambridge. Volume III. London: Macmillan and Co.; New York: The Macmillan Company, 1907.

In this volume of the new edition of Allbutt's system are considered the "diseases of obscure origin," among which are included the rheumatoid affections, rickets, osteomalacia, diabetes, gout, and a number of minor affections. This part of the book constitutes a new work rather than a revision, for some of the more important articles, such as rheumatoid arthritis, have been entirely rewritten, and new articles, such as achondroplasia and pulmonary osteoarthropathy, have been added. The article by Garrod on rheumatoid arthritis and osteoarthritis, or arthritis deformans, is an excellent presentation of conditions well grouped among those of obscure origin. The author questions whether the affections so named constitute a definite morbid entity; he makes a definite distinction between rheumatoid arthritis and arthritis deformans, and is inclined to regard even rheumatoid arthritis as a group of arthritides of varying causation, though there is a form occurring in adults the features of which are so uniform as to make it probable that they do constitute a morbid entity. It cannot be affirmed that the author has yet solved the problem of the chronic arthritides, but his article throws a flood of new light on these diseases and may be said without fear of contradiction to be the best and clearest exposition of this difficult subject that has ever been written. The volume also treats of the diseases of the alimentary canal and of the peritoneum in a series of twenty-seven articles by many of the best known British writers. The subject is well presented in these contributions, but there is little that is new or striking to attract the attention of a reviewer in search of novelties. Old subjects, however, may be presented in a new light, and this is the case with many of these, the hackneyed theme of constipation, for example, being set forth by Lauder Brunton in a peculiarly fresh and thought-provoking manner. The volume well sustains the reputation of this new edition of a capital treatise.

The Sexual Instinct, Its Use and Dangers as Affecting Heredity and Morals. Essentials to the Welfare of the Individual and the Future of the Race. By James Foster Scott, B.A. (Yale University), M.D., C.M. (Edinburgh University), Late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C., etc. Second edition, revised and enlarged. New York: E. B. Treat and Company, 1908.

The first edition of this book was published about ten years ago, and was at once recognized as one of the very best works dealing with a difficult but important subject. The present edition differs but little from its predecessor; a few slight additions have been made to some of the chapters, and two new chapters have also been added. The chapter on Perversions has been dropped, as it was of little practical use to any except experts, and they will seek and find all that they want on this subject in the works of Kraft-Ebing, Havelock Ellis, and others. The volume differs from several others on the same subject, in that it cannot possibly do any harm. At the same time it is capable of accomplishing an immense amount of good; and physicians and parents will, alike, welcome a book which can be placed in the hands of those who most need the information and advice therein contained. There are no morbid and revolting case-histories or prurient and unnecessary details; but the book stands preeminent for its honesty and purity of purpose, its plainness of speech, and its manifest helpfulness to readers of every class.

The Skin Affections of Childhood, with Special Reference to those of More Common Occurrence and their Diagnosis and Treatment. By H. G. Adamson, M.D., Lond., M.R.C.P. Physician for Diseases of the Skin, Paddington Green Children's Hospital; Physician in Charge of the Skin Department (Formerly Physician), Northeastern Hospital for Children; Assistant in the Skin Department, Westminster Hospital, pp. 287. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1907.

It has been deemed wise by the author to write a special treatise on the skin diseases of childhood inasmuch as the extreme youth of the patients makes clinical differences in the grouping and distribution of the lesions and in the mode of treatment. He classifies his cutaneous manifestations under congenital affections, affections due mainly to direct physical causes, those due to parasites, those due to toxemias and microbic infections, those due to nervous and to unknown origin. This etiological classification is helpful in treatment, both prophylactic and curative. The lesions are well described, the author assuming that the reader knows the elementary divisions such as papules, pustules, bullæ, etc., and thereby saves time and space. The pathological processes could have been described more fully, but in a work of this size it is excusable when the diagnosis, gross lesions, general course, and treatment are so well given. Twelve excellent plates, some of them double, are very helpful and are well executed, and constitute a most desirable way of teaching dermatology.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held January 2, 1908.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

Annual Reports.—The reading of these reports preceded the scientific session. The meeting was held under the auspices of the Section on Pediatrics, and was devoted to the topic, general tuberculosis in children.

The Pathology of Tuberculosis in Children.—Dr. JOHN MCCRAE of Montreal, Canada, read this paper. He said the first year of life was comparatively free from tuberculosis, although Schwer found 14 per cent. of his series of autopsies between the second and twelfth months tuberculous. The first three hemidecades were all liable, the first being perhaps most so, although Müller's figures were greatly in favor of the first. Of 11,000 indoor patients in hospitals in the cities of England, Scotland, and Ireland, 25 per cent. were tuberculous, and roughly half of these were being treated in the surgical wards. In children up to 15 years of age there were several groups of cases to be considered. First, the small class of those who in early infancy had intestinal tuberculosis from ingestion; second, those of any age who stored up the germs for a longer or shorter time, and, finally, suffered from an infection which was generalized; this showed itself in a variety of different forms; third, those few older children who developed phthisis. Tubercle bacilli, originally, were probably all of one kind; by lapse of time and difference of environment, strains had been developed, so that they now had human, bovine, avian, piscine, and reptilian forms; each of these was non-pathogenic for races other than its own host-race, save for those animals that were particularly susceptible to any form of tubercle bacilli. It was probably the case that the average human could overcome an infection of bovine bacilli more easily than that by human bacilli; nevertheless, it was certain that a number of bovine infections occurred. There was a type of infection in children which was called "bovine," viz., a slowly progressive tuberculosis, tending to much overgrowth and to dry cascation, which affected mainly lymph nodes anywhere in the body. Children were liable to infection by air-borne bacilli of the human, but less frequently of the bovine type. They could ingest human bacilli picked from the floor or from food carelessly exposed. They were liable to infection by ingestion of bovine bacilli from milk and other forms of food of which milk was a component part. The latter infection only was discussed. Milk and butter were likely to contain the tubercle bacillus, if the cows giving the milk had tuberculosis of the udder, and might contain it even if udder disease was not present; the bacilli in the milk supply depended then on the number of infected animals in the environs. Some people drank with impunity milk containing tubercle bacilli, but weakly children and those whose diet consisted largely or wholly of milk were apt to be infected. Of children under five years of age affected by tuberculosis, four-fifths were probably infected by air-borne human bacilli. One-fifth might show the bovine form, and this percentage decreased greatly as the age progressed. He said that the one who dogmatized least as to what nodes were primary and what secondary was most likely to be least in error. It must be admitted that bacilli could pass through tissues and glands without leaving traces visible to the eye, and could remain in tissues for considerable time without exciting even lesions so slight as to be recognizable only by the microscope. He gave his personal experience in a special class of infants, foundlings; these segregated children artificially fed on milk that was pasteurized were practically free from tuberculosis. In 747 autopsies, of which 60 per cent. were on children three months of age or less, tuberculosis was found but five times (0.66 per cent.). Of the five, one was three months, two five months, one fourteen months, and one was a baby of ten days, with tuberculous mesenteric glands and tuberculous ulcers of the ileum and cecum. He believed that the phenomenon of the disease manifesting itself in bone and joint and remaining there was some expression of the sum total of lowered bacterial virulence and heightened resistance of an individual tissue. He was not prepared to accept that such infections were necessarily bovine; he felt sure that the individual resistance was a greater factor than the bacterial variation of virulence in producing these cases of apparently a typical course. The concentration of the disease in lymph nodes might be but a mark of the tremendous fight the lymphatic tissue was making, and perhaps the universally tuberculous nodes were but another expression of a generalized miliary tuberculosis, but one that had been countered by a better resistance on the part of the child. He wished to show that meningeal tuberculosis in a large percentage of the cases was merely a local evidence of a generalized tuberculosis. At the Royal Victoria Hospital, the inmates of which were mostly children of fifteen or less, in 1,000 autopsies, they had 29 cases of tuberculous meningitis, with complete autopsy; 21 of these had a generalized tuberculosis of many organs. Two others had tuberculous foci elsewhere in the body. Thus, nearly 80 per cent. of the cases of tuberculous meningitis had a hopeless extension of the disease elsewhere.

Recent Diagnostic Methods.—Dr. W. H. PARK spoke on this subject. He said that he would limit his remarks to the recently proposed skin and eye inoculations. But, before touching upon technique, he thought it best to speak of the meaning of the reaction following inoculation. If one took an animal, a guinea pig, for instance, and injected a minute quantity of serum into it, that animal after ten days would be sensitized, so that if a fairly large quantity of serum was injected the animal would die in convulsions; whereas if the same dose of the serum was given to a guinea pig not so sensitized, results would be absolutely harmless. It was also found that egg white would sensitize such an animal. It was further found that other proteids, as well as bacterial proteids, would in the same way sensitize animals. Thus, if guinea pigs or rabbits or even men were injected with dead tubercle bacilli they would after ten days be sensitized. This sensitization would last for a considerable length of time, for months or longer periods, until the newly formed substance was eliminated from the body. The important point was that a minute quantity of suitable proteid would thoroughly sensitize an animal or man to similar proteids, and this sensitization would continue for months or even years. Larger quantities did not experimentally sensitize much more than a minute quantity. When one got a reaction from the subcutaneous injection of tubercles, it was not a reaction because of the presence of tubercle poison in the body, but because of the formation of antibodies due to the body having reacted to the tuberculosis infection. Therefore, if the body ceased to produce these protective substances, the poison in the tissues adjacent to the disease and in the circulation would not be neutralized, and no tuberculin reaction would occur. These reactions were not reactions to bacterial poison, but to the body products produced in response to the poison. In advanced cases, therefore, reactions would frequently not occur. Dr. Park said that all knew, no doubt, the old method of injecting subcutaneously minute quantities of Koch's original tuberculin, using 1-1,000 dilution, and giving from one to five c.c. subcutaneously and increasing the dose. This was the old method and this gave a temperature curve and slight local disturbances at the seat of disease. This summer von Pirquet, Wolff-Eissner, and Calmette had brought out new methods. When von Pirquet was working with serum

sickness and studying the reaction of vaccination with cowpox in immunized persons, he was led to try placing tuberculin upon the abraded skin, using 1-4 strength, one drop of which was rubbed into the abraded skin. He found that in tuberculous cases he got a typical reaction. Von Pirquet usually took an arm and made a little vaccination mark by rotating the point of the vaccine blade against the skin until a little abrasion was made. That would be the control spot. Then two other vaccinations or scarifications were made and into them was rubbed a 25 per cent. solution of Koch's tuberculin. The tuberculin could also be applied as in ordinary vaccination to an abrasion made by a needle. In the course of eight, twelve, or twenty-four hours appeared a papular swelling and redness the size of a dime or even a twenty-five cent piece. So, by contrasting the reaction of the two scarifications with tuberculin with that without the tuberculin, one could judge the difference between the very slight inflammatory reaction due to the abrasion and that due to tuberculin. Dr. Park had seen something over 20 positive cases of this kind, and in most of them the reaction was quite striking. In about 33 per cent. there was a rise in the temperature of from one to one and a half degrees along with the reaction. In the cases he had seen the inoculation never gave rise to other noticeable constitutional disturbances. Wolff-Eissner believed that he might get the same reaction without the use of this scarification by applying it to the conjunctiva, and he tried using a 1 to 10 dilution, placing one drop of it on the lower eyelid. This gave a marked reaction. He did not try a much weaker solution. Calmette, in order to avoid such a marked reaction or any nonspecific irritation, tried the method of purifying the tuberculin by precipitating the toxins in a 65 per cent. alcohol. The precipitate was washed, dried, and a 1 per cent. solution of it made in water. This 1 per cent. solution was then used as in the Wolff-Eissner method. An important point was to note carefully the condition of the two eyes before the inoculation, because one eye might be previously congested. The reaction might develop in from six to thirty-six hours. If one could only examine once it should be after twenty-four hours. It was very important in following up these new methods to note carefully the amount of reaction that occurred.

The method of application was as follows: Two solutions were employed in diagnosis, which contained 0.5 per cent. (No. 1) and 1 per cent. (No. 2), respectively, and which might be used successively in each eye if time permitted. In this way unnecessarily severe reactions might be avoided. The eyelid should be held down until the drop was distributed about the sac without overflowing on the cheek. The same eye should not be used for a second test, as it appeared to become sensitized to a certain degree by one test. The tested eye should be kept from external irritation by rubbing, wind, dust, and smoke. The first sign of a reaction appeared in from three to twelve hours in most cases, but might be delayed twenty-four and even forty-eight hours, and continue for a week. The presence of a reaction was indicated by a scratchy feeling, secretion, and redness of the inner canthus. The following scheme was proposed for recording the degree of reaction: Negative, no difference in color when the lower eyelid was pulled down. Doubtful, slight difference with redness of caruncle. + = distinct palpebral redness with secretion. + + = ocular and palpebral redness with secretion well marked. + + + = deep injection of entire conjunctiva with edema of lids and photophobia, and secretion. Contraindications: Any existing disease of the eye or lids, conjunctiva, blepharitis, trachoma, keratitis, and iritis. Eyestrain from errors of refraction need not prevent the use of the test so far as had been observed.

The objections to the test were slight. In a few the reaction, when very marked, might last for several days, or even a week or two, but no permanent ill effects had remained. Dr. Cutler in nearly 200 cases had not seen any bad effects in the use of the tuberculin in this way. Dr. Park had seen over one hundred cases and in none were there any disagreeable effects nor were there left any bad effects whatever. Dr. Park said it was as yet too early to try to estimate the exact value of either the skin or the eye reactions. Most considered that the skin reaction was little less apt to occur than the eye reaction. In young children the reaction was believed to indicate an active focus of tuberculosis, while in older children the reaction became less definite, as it might mean either a present or recently healed infection. In the adult the reaction was present in such a large percentage of the cases that it was hard to know whether there was an active or latent tuberculosis, or whether the bacilli had simply been absorbed, giving no reaction whatever except sensitizing the individual. Negative results were always helpful in excluding absorbed tubercle bacilli, latent or active tuberculosis. Dr. Park said that he had notes of the first cases which he tested in cooperation with Dr. Huddleston, which illustrated the difference between the two tests. First there were the tuberculin tests at North Brothers Island. There were four adults believed to have tuberculosis: the eye test was positive in three, doubtful in one. The vaccination test was positive in three and negative in the same one in which the eye test was doubtful. The doubtful case was in a lad eighteen years old, and the process involved two-thirds of the left side, was quiescent, and without any elevation of temperature. The control cases were three children who were convalescing from scarlet fever. The eye test and vaccination test were negative in two. The eye test and vaccination test were positive in one; the mother of this patient died of consumption.

The tests at Gouverneur Hospital on twelve children, all living in families with a case of tuberculosis, showed the eye test was positive in five, doubtful in three, and negative in four. The cutaneous test made on ten was positive in four, doubtful in two, and negative in four. Of these cases in one the eye test was doubtful, the vaccination test was negative, while in another the eye test was negative and the vaccination test was doubtful. In a third case both tests were doubtful.

While both these methods could be so readily employed, it should be borne in mind that sometimes patients became unduly alarmed, since they interpreted a positive reaction to mean an active and advancing tuberculosis, when, as clearly noted, it might mean nothing but a recently healed point of infection. Very anemic persons, as well as those in an advanced or dying condition, frequently did not react. The precipitated tuberculin for use in the eye was at least fairly stable, and could be kept for a number of weeks; the tuberculin for the skin was good for at least six months.

Laboratory Aids to the Diagnosis of Tuberculosis in Infants and Children.—Dr. T. Homer Coffin read this paper. He said that tuberculous affections in children often ran an obscure course and his paper was intended to emphasize those aids which were to be found in the laboratory. The microscopical examination of the blood usually showed a marked diminution in the hemoglobin and number of red blood cells. There might be a leucocytosis if the process was associated with suppuration. As Cabot had already stated, there was a functional debility of the blood through lack of nutritive substances in the plasma. In tuberculous meningitis the blood count was about normal, while in other forms a leucocytosis was found. Tubercle bacilli had been demonstrated in the blood. It had been stated by some authors that the tubercle bacilli might be demonstrated in the urine when the tuberculous process was elsewhere than in the urogeni-

tal tract, but in such cases they occurred, if at all, in very small numbers. In examining urine for tubercle bacilli one should guard against mistaking for them the smegma bacillus. In examination of the sputum Findlay's method was employed, *i.e.* the stomach tube, inversion of the child during a paroxysm of coughing, or expectorant mixtures might be employed. In older children the examination of the sputum often revealed the presence of the bacilli. With regard to the examination of the fluids of the body, he said the predominating type of cell was more indicative of the stage and severity of the disease than its etiology. The cerebrospinal fluid in tuberculous meningitis often showed the presence of the bacilli. Holt had found them present in every one of forty-two cases. The examination of the feces made many very sanguine regarding the diagnosis of tuberculosis.

This was particularly so because children swallowed their sputa. In tuberculosis of the intestines, associated with diarrhea, blood, and mucus, the bacilli were usually found after careful search. Examinations of the secretions of the eye, ear, nose, throat, etc., were of value. In various portions of the body, such as the throat, nose, tonsils, etc., if the microscopical examination of the secretions was negative, portions of the tissues might be excised and hardened, and the examination of sections might reveal the presence of tuberculosis.

Channels of Communication; Their Relative Significance.—Dr. S. McC. Hamill of Philadelphia read this paper. He said the avenues by which the tubercle bacillus got into the human body were the maternal circulation (congenital tuberculosis), the skin, the ear, the conjunctiva, the urogenital, the respiratory, and the intestinal tracts. It had been advocated by Baumgarten and his pupils that the majority of the cases of tuberculosis were of congenital origin. There was no doubt, however, that the vast majority of tuberculous subjects got their infection through the respiratory and alimentary tracts, and it was regarding the relative frequency of these two modes of infection that there existed such a wide difference of opinion. The evidence at hand led them to believe that fetal infection, as compared with other forms, was exceedingly rare. The frequency with which the tubercle bacillus found its way through the skin to the body was extremely difficult to determine, but it was generally thought that this mode of infection was uncommon. The other avenues of infection, through the conjunctiva, the ears, and the urogenital tract, were less frequent but well established. In the vast majority of tuberculous subjects infection occurred through the respiratory or alimentary tract. In the light of facts he presented it was manifest that one could not safely determine the portals of entry of the tubercle bacillus from the appearance of lesions found at autopsy. They were compelled, therefore, to turn to the results of animal experimentation. The experimental results bearing on inhalation tuberculosis which were most deserving of consideration in detail were those of Flügge. He produced pulmonary tuberculosis by inhalation in guinea pigs, rabbits, calves, and dogs, by means of a very small number of tubercle bacilli; in guinea pigs with less than fifty. The bacilli were floated in air in the shape of droplets. He concluded from these experiments as follows: 1. That inhalation represented a mode of infection as efficacious as subcutaneous injection, with regard to the very small dose required, and that inhalation infection produced a disease more rapid in course than did subcutaneous injection. 2. That it might be accepted as proven by the inoculation of the peripheral parts of the lung into guinea pigs immediately after exposure to an atmosphere containing droplets that at least some of the bacilli inhaled with the air in the shape of droplets were carried to the finest bronchi. 3. That the quantity of bacilli required to produce manifest symptoms of disease, when ingested with the food, was millions of times larger than when infection was by inhalation, and the fatal termination took place at a much later period. He accepted it as proven, therefore, that inhaled tubercle bacilli were capable of producing tuberculosis directly, and not, as some authorities asserted, because some of them were swallowed and penetrated into the body from the intestines or throat. These observations of Flugge required confirmation. His claim that the floating of bacilli-infected droplets in the air was more dangerous than the bacilli-laden dust was not in accordance with the results of other investigators, and this view was directly opposed to clinical experience. It would make living with a tuberculous patient dangerous, not so much from the particles of dried sputum attached to a dirty patient as from the droplets coughed up by them. This would make the nursing of tuberculous patients in sanatoria and hospitals a particularly dangerous occupation. Practical experience entirely disproved this, since cases of infection among nurses were almost unknown. The work of Bartel and Spieler would seem to indicate that the intestinal tract was the most common avenue of infection. These authors admitted the possibility of infection by both the alimentary and intestinal tracts. The tonsillar mode of infection had been advocated by many as a common, if not the most common, mode of infection. Grober had taken the attitude that the lungs might be directly infected through the tonsils and that the frequent involvement of the apex of the lung was explained by this mode of infection. He supported this view by the results of experimental work done on dogs, in which he injected into the tonsils some Chinese ink in suspension. A considerable quantity of this ink was found in the glands directly above the costal pleura at the dome of the pleural cavity and in the efferent glands. As the apex of the lung was in direct contact with this portion of the costal pleura, it was easy to understand why granules were also found in the pleura covering the apex. Infection through the medium of the intestinal tract had obtained a great deal of support in recent years. Calmette, Guerin and Delearde, in an article on the intestinal origin of tuberculous tracheobronchial adenopathy, reached the following conclusions: 1. That experimentally in animals and clinically in infants every time a tuberculous infection occurred in the tracheobronchial glands tubercle bacilli existed in the mesenteric glands even if they seemed healthy. 2. If the infection of the mesenteric glands preceded the appearance of the tracheobronchial adenopathy, that these, as well as pulmonary tuberculosis in the child and adult, must be considered as resulting from a tuberculous infection of intestinal origin. After a complete consideration of the literature the following conclusions were offered: (1) That it was impossible to gain any knowledge as to the port of entry either from the location or the degree of development of the tuberculous lesions. (2) That fetal infection was proven but not common. (3) That infection through the mouth, tonsils, and pharynx was of frequent occurrence and might be produced by inhalation or ingestion. (4) That primary inhalation infection through the lungs did occur. (5) That infection through the intestinal tract was definitely proven. (6) That the bronchial glands and lungs might be infected through the latter channel as well as through the lungs. (7) That the relative significance of the various modes of infection was very difficult to determine, on the basis of their present knowledge, since it had been clearly shown that it mattered not from what point the tubercle bacillus was introduced it could eventually reach the bronchial glands and lungs without leaving any evidence of its mode of entrance. It was possible, however, on account of the greater exposure of those portions of the body, that infection through the upper respiratory and alimentary tracts was the most common, and next to this, for similar reasons, through the lower respiratory and intestinal tracts. He said he was prepared to believe that infection by the in-

testinal tract was more common in infants and children than infection through the lungs.

The Management and Treatment of Tuberculosis in Infants and Children.—Dr. John Lovett Morse of Boston presented this paper. He said that the general principles of the management and treatment of tuberculosis in early life were the same as in later life, but they had to be somewhat modified in their application because of the manner in which tuberculosis manifested itself in early life and because of the different ways in which children bore exposure and reacted to climatic conditions. The chief characteristics of tuberculosis in infancy were its malignancy and its tendency to dissemination. The restriction of tuberculosis to a single organ and the involvement of the lungs, as it occurred in childhood and in adult life, were very unusual. The fatality at this age was so great that little could be hoped from any form of treatment. In young children the tendency to localization was greater. The bones and serous membranes were much more frequently involved than the viscera, and there was a decided predilection for the lymphatic system. In older children the pulmonary lesions were more common, increasing directly with the age, but they were comparatively rare before puberty. The course of pulmonary tuberculosis at this age was more rapidly progressive than later. At puberty the lesions, course, and treatment were essentially the same as in adults. For practical purposes tuberculosis in children he divided into two classes, surgical, including scrofulosis and lymphatism, and visceral. Children suffering from surgical tuberculosis did better at the seashore than inland, especially if the climate was temperate. Experience at the Convalescent Home of the Children's Hospital in Boston, however, showed that they might do well inland and in a cold climate, but a stay of at least one year was necessary. Children of the erethitic type usually did better inland in comparatively mild climates. Children with pulmonary tuberculosis were less able to bear extreme cold than were those with surgical tuberculosis, and withstood hardening and exposure very poorly. The dietetic treatment of tuberculosis in early life was essentially the same as in adult life. The drug treatment was purely tonic and symptomatic. The susceptibility to opium in any form at this age should be remembered. He knew nothing from his own experience of the use of tuberculin in children. The children of tuberculous parents should be sent away if possible. Those suffering from latent tuberculosis, or if predisposed to it, should be given proper climatic treatment or sent to sanatoria. The great problem of the management of tuberculosis in childhood was to prevent its spread. All children in families in which there was open tuberculosis should be removed and sent to the country or seashore. Schools should be inspected at least once in six months and those scholars infected with the disease should be sent to sanatoria. Fresh air schools should be established. For those who could not be sent away, day camps should be established. Advanced cases should be treated by themselves in special hospitals.

Dr. David Bovaird, Jr., opened the discussion by considering the relation between bovine and human tuberculosis and calling attention to the two schools whose claims were so directly opposed to each other.

Dr. Henry Dwight Chapin called attention to the difficulties encountered in making an early diagnosis of tuberculosis in infants and children and cited an interesting case. While tuberculosis in cattle seemed to be increasing, it was a noteworthy fact that tuberculosis in man was decreasing.

Dr. Harlow Brooks said that the anatomical lesions were not infallible in pointing out the location of the tuberculosis invasion. He had found that tuberculous infection in the orang-outang and chimpanzee could be prevented by attention to the respiratory tract; preventing the possibility of infection by the respiratory tract wiped out an epidemic in his experience.

Dr. William P. Northrup said that one of the most iniquitous things in cities to-day was the overheating of the houses, as well as the excessive variation of the heat. If one could not have continuous heat, it was better that the atmosphere should be cold. A dry skin kept one from catching the so-called "cold." One of the best ways to prevent tuberculosis was to cool the houses. He was surprised at Dr. McCrea's statement that tuberculoma in the brain was about one-fourth as frequent as meningeal involvement. In his experience tuberculosis occurred but very little in the brain itself, and it was surprising how limited it was to the meninges. The Calmette reaction was a most remarkable phenomenon, and was of great aid in diagnosis.

Dr. Roland G. Freeman said that there were a great many cases which at autopsy apparently were of inspiration tuberculosis, but which were really cases of intestinal tuberculosis, with little or no trace of the site of inoculation left. It should be remembered that milk from tuberculous cows often contained no tubercle bacilli.

Dr. A. F. Hess spoke of the relative practical importance of bovine and human tuberculosis, especially as concerned infants and children. By means of the morphology and of cultural and biological tests, the human and bovine types might be distinguished. In speaking of the deductions that might be drawn from the work already done, he said that it had been shown that primary tuberculosis of the lung was almost invariably caused by a bacillus of the human type. Laboratory methods might enable us to make a clinical entity of bovine or human tuberculosis, so that we might be able to diagnose it without the time-consuming methods of isolating cultures.

Dr. A. Jacobi disagreed with what Dr. Morse had said regarding the giving of opium in these cases, for opium was not a rank poison for little babies and children when they had tuberculosis. Otherwise he believed Dr. Morse's paper to be one of great value, showing the results of a wide experience. Dr. Jacobi advocated bringing milk to the boiling point instead of attempting to pasteurize it; one then would be sure to obtain the proper temperature.

Election of Officers.—After the adjournment of the regular meeting, the following officers of the Section on Pediatrics were elected: *Chairman*, Dr. Godfrey R. Pisek; *Secretary*, Dr. Eli Long.

Stated Meeting, Held January 16, 1908.

The President, Dr. John A. Wyeth, in the Chair.

Clinical Notes on Laryngeal Phthisis.—Dr. Beverley Robinson read this paper, presenting his personal observations and experience on tuberculosis as it appeared in the larynx, together with certain facts pertaining to its management and treatment. For many years he had had an extensive opportunity of seeing and treating this condition. In a fair proportion of the cases pulmonary tuberculosis had laryngeal complications. Laryngeal phthisis was more frequent among men than women because the former were exposed more by their different occupations in which the larynx was exposed to irritation. A laryngeal examination might frequently fix the diagnosis which was obscured prior to it. There were few, and sometimes no, laryngeal symptoms. Sometimes the patients presented huskiness, hoarseness of voice, intermittent or remittent, which was often treated as a slight cold; the appearance of the larynx under the laryngoscope would differentiate it as laryngeal tuberculosis. In those cases with a marked hoarseness, with pain, with dysphagia, etc., such an examination should always be made. In young adults with a cold or cough, which persisted despite rational treatment, and where the causation seemed obscure, one should invariably insist upon a laryngeal examination. By judicious management one might prevent the disease from going on. He admitted that the general treatment which was the wisest

or best in pulmonary tuberculosis was judicious often in laryngeal complications. In the treatment two things he insisted upon, rest for the larynx and inhalations. In some sanatoria for tuberculosis, where the larynx was affected, complete silence was insisted upon; spoken words were not allowed, but writing pads were furnished all such patients. Such a method gave the patients a far better chance for cure. In no disease was rest so useful as in disease of the larynx. In a few instances tracheotomy had been performed for laryngeal tuberculosis with stenosis, and this apparently modified the disease favorably by giving rest to the larynx, which this measure afforded. Dr. Robinson said that formerly he made use of atomized solutions, iron with glycerin, etc. When there was edema of the laryngeal folds or of the glottis, or posterior portion of the larynx, he often used alkaline carbolic spray as the best cleansing application before he used zinc, iron, or other agents. These were used in moderate strengths. Whenever there was ulceration attempts were made to reach the ulcer directly with stronger pigments by means of a probe on which chromic acid had been fused. When there were excrescences present he used the tube or other form of forceps. In no instance had he made use of intralaryngeal injections, a method of treatment that never appealed to him. To punch an infiltrated or hardened tissue over the cartilage he did not believe was indicated or desirable. If the ulcer was localized or single it might be moderately curetted with advantage; while he had not attempted this, he saw no objection to it. After these excrescences were in part or wholly removed by the forceps, then applications might be made. Formerly, when the patients had laryngeal pain, ulceration, infiltration, etc., he applied iodoform or morphine or both combined; this lessened the patient's suffering and made deglutition easier. Again the position with the head over the bed and sucking fluids through a rubber tube afforded some relief. To-day these patients were relieved by the use of orthoform, a drug which had the advantage of being innocuous. Among applications to ulcers of the larynx lactic acid in 10 per cent. to 80 per cent. solutions, or even pure, was used this helped to complete the healing of the ulcer. If lactic acid was to be applied in strong solution, or pure, it should be done with great care to avoid undue pain or distress. Its curative effects were much increased by complete rest of the larnyx. In rare cases where the epiglottis was the seat of ulceration, with dysphagia, it might be found desirable to remove it with the knife or snare. The most important local measure to be employed by the sufferer from laryngeal tuberculosis at any stage of the disease, was the persistent, long-continued use of the perforated zinc inhaler (see Fig. 1, page 297), using creosote and alcohol, combined, or not, with spirit of chloroform. This was of great value. In 1885 Dr. Robinson read a paper on antiseptic inhalations; at this time he drew attention to their value in bronchial and laryngeal diseases. The inhalations modified the sputum, diminished its quantity, lessened the cough, promoted sleep, etc. He said he knew of no other method or surgical measure which afforded the same amount of relief of symptoms or promoted a cure in suitable cases as the use of this perforated zinc inhaler with the fluids mentioned. According to the researches of Horn, 97 per cent. of the cases of pulmonary tuberculosis had symptoms referable to the larynx during the course of the disease. The use of tuberculin might establish beyond a doubt the existence of tuberculosis. Calmette's reaction was a great advantage. Tubercle bacilli in the feces might aid in the diagnosis. The *x*-ray was also of value in certain cases.

Dr. A. Jacobi said that his remarks referred to the lymph connection of the larynx with the rest of the body. The lymphatics of the larynx had been studied mainly by Sappey in his famous atlas, by P. Poirier and B. Cunéo in the second volume in "Poirier et A. Charpy, Traité d'Anatomie Humaine," 1902, and by Aug. Most, *Zeitsch f. d. Chir.* 1900 and his "Topographie des Lymphgefass-Apparates des Kopfes und des Halses," 1906. The lymphatics of the larynx were most copious where the mucous membrane was the most thick and succulent, viz., in the region above the vocal cords; very much less below the vocal cords where the mucous membrane was very thin. Here the lymphatics were scarce and so narrow that their infection was attended with great difficulty and mostly failed. The anastomoses of this portion of the laryngeal lymphatics with the digestive and respiratory organs, viz., tongue, pharynx, and trachea, were defective. The upper part of the larynx was connected with the lymphatics located along the jugular vein. The subglottic part had no or few such connections. Indeed, the small glands found on the level of the thyrohyoid membrane, received no lymph vessels from the larynx at all, but from the pharynx and the epiglottis and arytenoid part of the larynx. The lymphatics of the trachea resembled very much those of the lower half of the larynx. There were four lymph outsets from the larynx, two lateral ones from the upper, one anterior and one posterior from the lower part of the larynx. These latter were very thin and few in number. All of these lymph connections were of vast importance to the surgeon dealing with carcinoma of the larynx. As long as the tumor was lateral it affected the glands of the same side. Thus the location of a metastatic glandular tumor serves as a rule in making the diagnosis of the tumor. Bilateral metastatic tumors indicated the bilateral seat of the cancer. Tuberculosis of the larynx did not affect the neighboring glands to the same extent. Even the deep cervical glands were more frequently infected from the pharnyx than from the larynx. Peritracheal glands were rarely tuberculous. The prelaryngeal glands swelled in a few cases only. When they were found, however, even when of small size, bacilli could be demonstrated (Most, p. 125). But they were not often found. This agreed perfectly with other clinical observations. We had known this third of a century that, for instance, in cases of diphtheritic croup, when the membrane was confined to the larynx exclusively, necessitating tracheotomy or intubation, the system did not participate in the process at all. There were no constitutional disturbances. That was shown by the absence of fever and the absence of swelling of the lymph bodies of the neighborhood. This observation was even more positive than the relations to diphtheria of the tonsils, which, so long as they were the exclusive seat of a diphtheritic exudate, gave rise to no, or very little, glandular swelling. These anatomical remarks, he said, covered all cases of laryngeal tuberculosis, both secondary and primary. The latter, though rare, might occur at all periods of life, even in the nursling. The few cases occurring in the latter were complicated with extensive tuberculosis of the bronchial glands. The explanation of this complication was furnished by the changes which took place in the anatomy of the several periods of life. In all mucous membranes the lymph vessels decrease in size and numbers with advancing years; in the intestine, in the pharynx, principally in the tonsils, and mainly in the larynx. The prevailing diphtheria of this half century and universal observation proved that anatomists had learned that the injection of lymph vessels in the newly born was easy, began to be difficult in children a few years old, and was very difficult or impossible in many localities in the adult body. That was why the bronchial glands were easily affected by the primary tuberculosis of the larynx in the newly born, and why with increasing years the same local disease might not, or but little, spread to the lymph circulation of the body at large, and might remain localized. Indeed, the relative absence of general tuberculosis in laryngeal phthisis was often observed. Dr. Jacobi said he had had very little experience with the local treatment of the tuberculous larynx, but he saw a good deal of pharyngeal tuberculosis in its complication with tuberculosis of the larynx and lungs. We were well acquainted with the

fierce suffering of dysphagia in such cases. Gargles did no good. They never reached the posterior wall of the pharynx, for there were very few who would ever learn how to reach it and expel the fluid through the nares. He liked to spray the throat, either directly or through the nares, once or twice a week with a one or two per cent. of nitrate of silver solution. The excessive pain caused by swallowing might be relieved or removed by the use of small doses of morphine a few minutes before each meal. A hypodermic tablet of one-eighth of a grain, more or less, was placed on the tongue and sucked down without water. Its absorption was local and required but a few minutes. This was very little more than that of the same amount of morphine used subcutaneously for other purposes. Four or five drops of Magendie's solution, not diluted, applied in the same way, had the same effect. Finally, he said, he had always protested against leaving any tuberculous patients—and mainly those with pulmonary tuberculosis—alone with fresh air, good food, sanitarium treatment, and all that. For seventeen years he had treated tuberculosis with guaiacol, or, better still, if the patient was not too poor to pay for it, a guaiacol salt, preferably the carbonate. Good creosote contained only 60 per cent. of guaiacol. He knew it worked well. If he had any voice in the matter, no sanitarium patient would be treated without a preparation of guaiacol year in and year out. He was certain that he had given it in these seventeen years to five thousand patients. He said he would continue doing the same in the next seventeen years unless he found something better. We were frequently, indeed, in a position to utilize the evidence of clinical experience and to learn the reason and the theory afterwards. It might be that the guaiacol acted as an intestinal antifermentative only; it might be, as he believed, it had a peculiar antidotic action on the circulating toxin of the bacillus.

Dr. Walter F. Chappell wished to contribute some clinical notes on laryngeal phthisis, and desired to dwell briefly on primary laryngeal tuberculosis, avenues by which the tubercle bacillus entered the mucosae of the larynx, diagnosis and treatment. In regard to primary laryngeal phthisis he said that at every discussion on tuberculous infection of the upper air tract, the primary method of infection should be strongly presented as the acceptance of a possible primary infection cleared up many cases which were doubtful in former times, and added greatly to a favorable prognosis. His experience had prepared him to believe that primary disease in the upper air tract might be viewed from the aspects of its pathology, diagnosis, prognosis, and treatment, without any infection being present in the lungs. Not infrequently the tubercle bacillus gained an entrance into the mucous membrane of the larynx without producing any serious disturbance. Its subsequent history depended upon the personal equation of the mucous membrane of the individual. Mild infections were often unrecognized and entirely recovered. Severe primary infections were rather uncommon and their prognosis unfavorable. There was considerable mystery in regard to the avenues by which tuberculous infection entered the upper air tract. The common sense theory of direct infection through a damaged mucous membrane was in his belief the reasonable view, and was amply supported by clinical facts. It applied alike to primary and secondary forms of tuberculosis. This form of superficial infection produced more or less superficial disturbances of the mucous membrane and might be arrested in a short time or continue through the various stages of tuberculous laryngitis. Three stages were recognizable, the premonitory stage, the advanced infiltration stage, and the ulcerative stage. In regard to a recognition of the premonitory stage, he said that he believed that more or less definite symptoms preceded the deposit of tubercle in the larynx. Many catarrhal inflammations had a close relation with this infection, but it was often difficult to determine whether they were cause or effect. He had frequently seen severe laryngorrhea in a tuberculous patient continue for months before a definite diagnosis could be made. Recurring superficial, local hyperemia were the usual characteristic signs of early laryngeal tuberculosis. The interarytenoid space, ventricular bands, and epiglottis were the usual locations for early circumscribed infections; persistent redness and thickening of these locations in a tuberculous patient should cause anxiety. The ulcerations following a surface infection were superficial and usually quite extensive in area. Sometimes the initial appearance was a gradual thickening of the deeper tissues of the larynx, progressing slowly one or two years until most of the interior of the larynx was filled with thickened tissue and local tumefactions. When ulceration occurred it was small, deep, and increased very slowly and not infrequently healed with special local treatment. These cases were, in his experience, always secondary to pulmonary tuberculosis, and he thought the infection took place through the pulmonary vessels and entered the larynx through its vascular supply. These patients usually gave a history of more or less pulmonary hemorrhage with cavity. There was little that was new in diagnosis, but some irregular cases taxed all one's skill and experience, as, for instance, syphilis affecting the cartilage of the larynx, producing a thickening and bulging of the mucous membrane of the larynx, resembling tuberculous tumefactions. Mixed infections of syphilis and tuberculosis were not infrequent and were difficult to make out. Constant pain in laryngeal ulcerations was a prominent point in favor of tuberculosis. The subcutaneous tuberculous test had been of value in doubtful cases. He had employed Calmette's test with positive results in one case and hoped that it might be brought into more general use. He said that no uniform treatment was applicable to all cases. Laryngeal rest was most important in all cases and could be obtained by absolute cessation of the use of the voice and also by all the milder forms of infection and to ulcerations in all stages. To be effective it should be continued for three months or longer. Treatment might be classified as medicinal, surgical, and climatic. In the early stages soothing sprays and warm inhalations such as oleum pini pumilionis, creosote, menthol in milk of magnesia, were of value. When the tuberculous infiltrations were large, submucous injections of lactic acid and creosote might be used, but only in the quiescent stage when there was no fever. When the disease had progressed to the ulcerative stage all applications of an irritative character were contraindicated. When the temperature was normal and the laryngeal infection in a quiescent stage, applications of 25 per cent. lactic acid might be used or the creosote solution. The general aching of the laryngeal region might be relieved by the external application of menthol, camphor, and chloral hydrate. The icebag was also beneficial. Tracheotomy should be done in severe cases, when there was great infiltration of the mucous membrane threatening life. In four cases the operation had proved satisfactory in his practice, the urgent dyspnea being immediately relieved, and later the great thickening receding. In all cases a temporary arrest of the disease was effected. Tracheotomy in ulcerative conditions was harmful and he could not speak too strongly against it, as well as against the removal of tuberculous thickenings and ulcerations by means of cutting forceps and sharp curettes. When the curette was used it should be dull and employed gently in scraping a tuberculous ulcer. When more heroic measures were employed new avenues of infection were opened and the disease spread rapidly. In regard to climatic treatment he said he would rather take his chance in a good climate without treatment than in a poor one with the best of treatment. It was not easy to decide just what was the best climate. Residence near the sea or a large inland body of

water was not good for tuberculous throats. In the early stages a dry, cold climate was beneficial. If the disease process was active a moderate temperature was important. High winds and damp, foggy days were bad for all ulcerations. As a rule, tuberculous throats were better in a moderately warm, dry climate free from dust and winds. In his opinion the future of all arrested cases, either laryngeal or pulmonary, depended upon early diagnosis, and the patient's willingness and financial ability to keep himself under proper climatic and hygienic treatment.

Dr. Joseph W. Gleitsmann said that several years ago he had pointed out the importance of the consideration of the lymph glands in laryngeal cancer. In many cases of laryngeal tuberculosis the lymphatic glands were hard to the touch. Infection was not always as some claimed it to be, by inhalation; it arose simply through the lymphatic system. It had been shown, and in a clear manner, by some French observers, and others, that tubercle bacilli could enter an intact epithelium without leaving a trace. This also explained some infections occurring by the tubercle bacilli entering through the intact mucous membrane of the intestinal canal and causing tuberculosis elsewhere. He wished to testify and bear testimony to the good effect of guaiacol, especially in dispensary work. He was glad to have heard Dr. Robinson call attention to the perforated zinc inhaler. Dr. Gleitsmann said he had heard of it, but had never used it. Absolute silence did much good. Advanced cases must be treated differently from the acute cases. The early cases of laryngeal tuberculosis were not easily diagnosed. He said we had been taught that in laryngeal tuberculosis there was at first anemia of the vocal cords or laryngeal walls; this he could not confirm. The vocal cords were not anemic, but congested, and showed minute vessels on the surface. There might be, however, a unilateral hyperemia in tuberculosis here. Horn had emphasized the importance of recognizing this. A point that was new to him was the importance of the infiltration of the interarytenoid spaces he was speaking of the puffiness or fullness of the posterior walls of the interarytenoid spaces. Dr. Gleitsmann then referred to laryngeal tuberculosis occurring in pregnant women, and said that, in such cases, some observers advocated artificial abortion. Some observers had seen cases far advanced in laryngeal tuberculosis give delivery to healthy children. With regard to the treatment, he said that lactic acid should be applied only after the ulcers had been first cleaned. In 1885 or 1886 he recommended the application of lactic acid simply for ulcerations of the larynx, and not for infiltration. If the acid were applied properly and not smeared around promiscuously, it acted upon the ulceration proper and left an intact mucous membrane. It had no effect at all in reducing the infiltration.

Some Notes on the Etiology, Prophylaxis, and Therapeutics of Laryngeal Tuberculosis.—Dr. S. A. Knopf and A. J. Huey read this paper (see page 297).

Dr. Francis J. Quinlan called attention to the objective and subjective picture in laryngeal tuberculosis. One was dealing here with a condition which had symptoms, such as cough, dyspnea, huskiness, dysphagia, etc., and these symptoms, more or less verified by the objective signs as shown by the laryngoscope, made it almost impossible to mistake the nature of the trouble. But the subjective must be reinforced by the objective signs. The diagnosis could be made by attention to the temperature, the pulse and the respirations, and above all by an examination of the sputa. In many instances the remedial agents did not reach the parts, because the parts were covered with mucus, layers of mucus, and pus, and myriads of bacilli. Unless the parts were first cleansed thoroughly the things advocated would be useless. He had used with satisfaction the vapors spoken of by Dr. Jacobi. The patients, however, should be built up. Cough was an explosion, a reflex act, and this could not be controlled by ordinary measures. The parts should be put at rest, and cocaine was the only thing of benefit in such cases. Formaline, lactic acid, and other agents were beneficial. The dyspnea could be controlled in many cases by the use of nitrate of silver. When the patient's life was in danger, tracheotomy should be thought of.

Dr. Emil Mayer said that in the main he agreed with what Dr. Chappell had said. Doing a tracheotomy had shown him the advantage which followed such an operative procedure in prolonging life and even enabling a cure to result. He took issue with one statement made in which Dr. Chappell said that he himself preferred climate treatment rather than the best laryngeal treatment; this statement he took issue to. It was best to give both. The patient should be sent to a place where he could be kept under the care of a laryngologist, and where he could get advantage of the air as well. For some time they had an arrangement at the Mount Sinai Hospital whereby when a patient came directly to their department with all the evidences of tuberculosis of the larynx he was referred to the department of internal medicine with the request for a report. Invariably a report was received from that department, and the work was checked off. They made the diagnosis, which was confirmed by the department of internal medicine. With regard to the treatment, many of the things suggested were not of great value. Some cases would do well under intratracheal applications. He advocated the use of a glass tube with a rubber bulb so arranged that the patient could apply the orthoform emulsion directly to his own larynx. The emulsion used was that suggested by Dr. Freudenthal, a combination of orthoform with morphine and cocaine.

Dr. Thomas J. Harris said that, in his own experience, he had arrived largely to the same conclusions already drawn by Dr. Robinson. He did not believe in meddlesome interference in laryngeal tuberculosis. With regard to the use of extensive surgical procedures, they did not seem to do good in the patients that came to him. He believed in the great value of rest, and called attention to the case of a distinguished specialist who went without speaking for one year, and to-day was a cured man. With regard to the local treatment, there was in his opinion one thing better than anything else where active local treatment was required, and that was galvanocautery. He had never seen any decided or severe reaction follow its use. This offered a means of getting at the seat of the disease and without reaction.

Dr. Robinson closed the discussion. He wished it to be understood that he meant all that he had said. He was absolutely sure and convinced that there was no one single thing that would do half the good as the proper, consistent use of what he had told them about. Once again, he could not emphasize too strongly the value of the perforated zinc inhaler with the inhaling mixture mentioned. He believed the inhaler should be used not only in every dispensary, hospital, sanatorium of the country, but also very widely in private practice whenever and wherever indicated.

Bed Sores.—When a patient is to be in bed for a long time, as in fracture of the thigh, great care must be exercised that bed-sores do not form. In the first place linen draw-sheets must be made, sufficiently large that they may be firmly fastened to the sides of the bed so as to prevent creases or wrinkles forming under the body—these and dribbling urine being the most frequent causes. Whenever the sheets become soiled by urine, feces or discharge from a wound, they must be changed. As soon as the slightest redness of skin is observed the affected surface must be rubbed with alcohol (65 per cent.) and dried and then carefully anointed with glycerin; twice daily at least. Or equal parts of tincture of catechu and liquor plumbi may be substituted for the glycerin if that causes much smarting, as it sometimes does.—*American Journal of Clinical Medicine.*

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, Held at St. Louis, Mo., December 30 and 31, 1907.

THE PRESIDENT, DR. CHAS. W. OVIATT OF OSHKOSH, WIS., IN THE CHAIR.

(*Concluded from page 289.*)

Lymphatic and Portal Infections Following Appendicitis.—Dr. ROLAND HILL of St. Louis, Mo., reported an interesting and unique case illustrating these infections, and said that in the present stage of surgical knowledge we were almost absolutely helpless in the presence of some of the severe forms of infection when the infecting organism had once passed into the general circulation. It went without saying that early removal of the appendix should be the keynote in all cases, together with an attack, wherever possible, upon any focus that might form. Considering what had been accomplished along the lines of serum therapy, the remarkable effects of antitetanic serum as a prophylactic of tetanus, and the miraculous results of diphtheria antitoxin, it did not seem too much to hope and expect that experiment medicine would soon offer specific agents which would nullify the effects of the various pathogenic organisms when once they had been introduced into the blood.

Extrauterine and Intrauterine Pregnancy of Five Months, with Operation and Death.—Dr. D. C. BROCKMAN of Ottumwa, Iowa, reported the case of a woman, five months pregnant, with extra and intrauterine pregnancy. An attempt was made to remove the ectopic sac by abdominal section, but the parts were so vascular that he was obliged to desist. Furthermore, the patient was so debilitated from vomiting that he did nothing further. But in ten days he opened the sac from below, removed the fetus and packed the cavity with gauze, intending to remove the placenta later. Uterine hemorrhage and pains occurred on the third day, and the woman died two days later from extra- and intrauterine hemorrhage. He asked, could a better method be suggested?

Dr. D. W. BASHAM of Wichita, Kan., reported a case of hernia of the appendix, which was complicated with appendicitis, and reviewed the literature on the subject.

Sexual Perversion as an Accompaniment of Prostatic Hypertrophy.—Dr. J. F. PERCY of Galesburg, Ill., believed that the old prostatic, who showed aberrant sexual activity, was in a large proportion of cases suffering from a psychosis rather than senile dementia, to which the symptoms were usually attributed. Under the influence of the irritation from his enlarged prostate, he might commit all forms of sexual crime, and after removal of his prostate his functional sexual aberration disappeared, and he remained cured. This phase of the diseased prostate opened up the possibility of a more rational study of the pelvic environment of the prostate gland in the sexual perverts among men, old and young. Many old prostatics were in insane asylums, many of them were in the government and state soldiers' homes, as well as in the various county almshouses. The strain of sexual excesses from early life until old age, the intimate connection maintained between the prostate gland and the sympathetic and the cerebrospinal nerves, the unknown secretory functions of the prostate gland along physiological lines—these all made prominent the fact that with the hypertrophied prostate could be had a class of symptoms referable to the sexual system, where the mental life of the sufferer carried him close to the border where insanity had its dominion, and which could be corrected by the aid of surgery.

Intestinal Obstruction.—Dr. B. MERRILL RICKETTS of Cincinnati, Ohio, contributed a paper on this subject, in which he defined obstruction as the stoppage or blocking of a canal or opening in the body, due to any of the numerous causes. The symptoms such as vomiting, pain, distention (symmetrical or asymmetrical), sweating, collapse, rigid parietes, and toxemia, one or all might be present in any form of obstruction in the large as well as in the small bowel. These being facts, why should exploration be delayed, when simple incision through the abdominal wall was done without mortality? Should exploration and direct digital and ocular examination of the abdominal viscera be delayed in intestinal obstruction, because experiments, reports, symposia, and discussions had failed to satisfactorily explain its etiology, symptoms, and treatment? Intestinal obstruction probably had a higher immediate mortality with or without surgical intervention than any of the surgico-pathological diseases. The non-mechanical type without operation had a supposed mortality of 90 per cent. when not complicated with general peritonitis, and from 60 to 84 per cent. with operation. This mortality in post-operative obstruction exceeded that of preoperative obstruction of the same degree, whether of the mechanical, non-mechanical, or septic type. This increased mortality was due to the added surgical trauma, and especially the anesthetic. In the mechanical type the mortality was given as 100 per cent. without operation, and from 50 to 80 per cent. with operation. This difference in per cent. was probably due to the advantages of palpation and the Roentgen ray in detecting neoplasms and foreign bodies, which were its most common cause, hence earlier surgical measures might be resorted to. In the septo-peritonitic type without operation the mortality was generally given as 100 per cent., while with operation it was somewhat less. There were certain forms of obstruction with or without infection that had been considered invariably fatal. If this was so, there was nothing to be lost in opening the abdomen. If, after opening the abdomen, an imperfect mechanism within could be made perfect without destruction of the nerve or blood supply, in the absence of infection, surely many more cases would recover; even with many forms of infection this was probably so. But if the patient became exhausted from vomiting, pain, infection, or want of nourishment, with or without infection of any kind, the mortality would be proportionately high. Pain, distention, and vomiting were always alarming, and the majority of patients went on to death regardless of any effort to relieve them. Intoxication had not yet been proven to be the cause of death in any given case of obstruction. If cases of obstruction indicated by one or more symptoms were opened at the onset, under ordinary precautions, the mortality would be less than if they were operated upon late in the attack. The element of delay in surgery is more serious than the element of aggressiveness. In no other surgical condition was this statement more fully verified. The most skilled operators had many times opened the abdomen for a condition made certain by one or more symptoms, and found one entirely different. If this was sanctioned in other lesions of less importance within the abdominal cavity, why could not exploration for obstruction based upon one or more symptoms be undertaken? This would determine the character and degree, if obstruction was present. If not present, no special harm would ensue. If the character or degree or both were believed to be fatal, the remedy should be applied regardless of its character, because that verdict was only an opinion, not an established fact.

Dr. A. A. KERR of Salt Lake City contributed a paper in which he discussed obstructions of the common bile duct and reported a case in which he performed cholecystostomy, partial gastrectomy with posterior gastrointestinal anastomosis, cholecystenterostomy, and enteroanastomosis.

The following papers were also read: "Hydrocephalus, Its Surgical Management," by Dr. Wm. Jepson of Sioux City, Iowa; "Sarcoma of the Liver," by Dr. Van Buren

Knott of Sioux City, Iowa; "The Diagnosis and Treatment of Extrauterine Pregnancy, with Report of a Case," by Dr. Geo. C. Barton, of Minneapolis, Minn.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. W. W. Grant of Denver, Colo.; *First Vice-President*, Dr. Willard Bartlett of St. Louis, Mo.; *Second Vice-President*, Dr. Harry A. Sifton of Milwaukee, Wis.; *Secretary-Treasurer*, Dr. Arthur T. Mann of Minneapolis, Minn.; *Executive Council*, Drs. C. H. Mayo of Rochester, Minn., and J. F. Percy of Galesburg, Ill. Minneapolis, Minn., was selected as the place for holding the next annual meeting; time, December 29 and 30, 1908.

New Instruments.

A NEW STETHOSCOPE.

By DUNLAP P. PENHALLOW, M.D.,

BOSTON, MASS.

SURGICAL HOUSE OFFICER, BOSTON CITY HOSPITAL.

Some time ago I became interested in stethoscopes and, after considerable experimenting, devised one which was small, light, simple of construction, and at the same time one which gave a clearer and a relatively louder sound than any of those with which I am familiar.

The instrument consists essentially of a solid metal body containing a relatively deep cone (Fig. 1), from the apex of which leads a metal tube to

Fig. 1.

which the rubber tubing of the binaurals can be attached. The size of the instrument is such that for localizing lesions, such as cardiac murmurs, it is invaluable. The sounds are brought out clearly and distinctly, without being confused with sounds from surrounding organs, as is the case when a larger bell is used. In comparing this instrument with others I have found that murmurs which were inaudible with stethoscopes of a larger size could be heard distinctly with this small bell. The sounds are of a much clearer tone than those produced by others, and, in addition, they are of a relatively greater volume. The size is such that the instrument may easily be used in the supraclavicular or in the intercostal spaces.

The construction is shown in the accompanying diagram (Fig. 2) in cross section, and consists of the body (*a*) in which is the cone-shaped air-chamber (*b*), which is relatively very deep. From the apex of this air-chamber leads the tube (*i*) to which the binaurals may be attached. The body of the bell is flat, as is shown in the diagram, with rounded edges. Close to the lower edge of the bell is a groove (*f*) into which is fitted a spring ring (*e*), which is used to hold the diaphragm in place. The diaphragm (*d*) consists of some easily vibrated material, such as sheepskin, which is applied while wet and is stretched into place by means of the ring, which then holds it firmly. When the skin dries it becomes tense, thus forming a very sensitive diaphragm. After the diaphragm is in place it may be covered with paraffin, which renders it impervious to moisture, and thus prevent the absorption of moisture from the body of a patient.

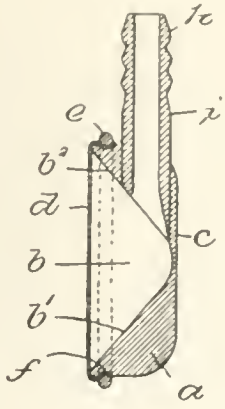

Fig. 2.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Skin Affections of Childhood. By H. G. Adamson, M.D. Lond., M.R.C.P. 12mo, 287 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Diseases of the Male Generative Organs. By Edred M. Corner, M.A., M.B., B.Sc., F.R.C.S. 12mo, 270 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Practical Anesthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P. 12mo, 178 pages, illustrated, half morocco, $1.50. University Press, Oxford.

Abel's Laboratory Handbook of Bacteriology. By M. H. Gordon, M.A., M.D. Oxon., B.Sc. 16mo, 224 pages, half morocco, $1.50. Oxford University Press.

A Treatise on Plague. By W. J. Simpson, M.D. (Aberd.), F.R.C.P. (Lond.), D.P.H. (Camb.). 4to, 465 pages, illustrated, muslin. Cambridge University Press.

Rabies. By David Sime, M.D. Large 8vo, 290 pages, muslin. Cambridge University Press.

A Manual of Venereal Diseases. By Officers of the Royal Army Medical Corps. 12mo, 282 pages, illustrated, half morocco. Oxford University Press, New York.

The Elements of Homeopathic Theory, Materia Medica, Practice, and Pharmacy. 16mo, 218 pages, cloth, $1.00 net. Boericke & Tafel, Philadelphia.

Atlas der Pathologisch-Anatomischen Sektionstechnik. By Prof. Dr. M. Westenhoeffer. 8vo, 53 pages, paper, illustrated, 2 marks. Verlag von August Hirschwald, Berlin.

Atlas and Textbook of Human Anatomy. By Dr. Johannes Sobota and J. Playfair McMurrich, A.M., Ph.D. Large 8vo, 342 pages, illustrated, cloth. W. B. Saunders Co., Philadelphia.

Diseases of the Nose and Throat. By D. Braden Kyle, A.M., M.D. 8vo, 797 pages, illustrated, cloth. W. B. Saunders Co., Philadelphia.

Minor Surgery. By Edward Milton Foote, A.M., M.D. Large 8vo, illustrated, cloth. D. Appleton & Company, New York.

Comparative Electro-Physiology. By J. C. Bose, M.A., D.Sc. 8vo, 760 pages, illustrated, cloth. Longmans, Green & Co., New York.

Variations of the Bones of the Hands and Feet. By Thomas Dwight, M.D., LL.D. Royal 8vo, illustrated, cloth. J. B. Lippincott Company, Philadelphia.

Light and X-Ray Treatment of the Skin. By Malcolm Morris, F.R.C.S. (Ed.) and S. Ernest Dore, M.D. (Cantab). 12mo, 172 pages, muslin, illustrated, $1.50 net. W. T. Keener & Co., Chicago.

Medical Items.

Modifications of the Bacterial Flora of the Intestine Under the Use of Buttermilk.—Eduardo Gilberti and Giovanni Centela have examined the feces of infants suffering from various gastrointestinal affections and taken buttermilk as a diet to ascertain its effect on the bacteria contained in the intestine. The authors find that the pathogenic bacteria are hindered in their growth, while those microorganisms that prevent putrefaction and antagonize the pathogenic bacteria are aided in their growth. Buttermilk is an efficient food and one of easy assimilation, and acts as a therapeutic agent as well. The action of buttermilk is also due to the special chemical condition of the food which produces important modifications in the contents of the digestive tube, it having a marked antifermentative action due to the scarcity of fats. The fats aid in the production of putrefaction in the intestine. Buttermilk develops the physiological saprophytes. The feces become modified in from thirty-six to forty-eight hours after the use of buttermilk begins, and soon become normal.—*La Pediatria.*

Night Blindness.—At a recent meeting of the Ophthalmological Society of the United Kingdom, Nettleship gave some interesting facts concerning a genealogy of ten generations of congenital, stationary night blindness. This disease, often hereditary, was, he said, less known than retinitis pigmentosa and its so-called unpigmented variety, and, unlike them, did not progress. A great part of the present case was published by Cunier nearly seventy years ago, and had been mentioned by many writers. But the nature of the disease was unknown until a year ago, when, at Mr. Nettleship's request, Professor Truc of Montpelier examined several living night-blind descendants, established the diagnosis, and instituted a fresh inquiry, resulting in an extension of Cunier's tables from upwards of 600 persons in seven generations, to nearly 1,800 in ten generations. Only certain branches of this large tree, containing about 260 persons, bore the disease, and of this number just one-half (129), contained in 60 childships, were affected. In half the affected childships (29) the proportion of disease to healthy agreed with the Mendelian theory; others showed a near approach to agreement, and others again, would conform if the dominance were supposed to have been reversed. About a quarter of the cases seemed inconsistent with Mendelism, but incompleteness of record doubtless accounted for some of these. The disease always passed from parent to child without a break, was rather commoner in females than males, did not lead to blindness, and was not accompanied by any other defects or peculiarities. It was not due to consanguinity; there were two first-cousin and seven second-cousin marriages, and only one of these nine produced night-blind children.—*The Lancet.*

Lactation and Typhoid Fever.—M. Péhu discusses the advisability of continuing lactation during the course of typhoid fever, both from the standpoint of the mother and the child. He draws his conclusions from the observation of five cases seen in the hospital at Lyons. It has been established that lactation is not desirable in such acute infectious diseases as variola, scarlatina, and diphtheria, but typhoid fever has not been always classed with them. He finds that the mammary gland acts as an efficient filter against the typhoid bacilli and that the disease is rarely transmitted to the child. There is no especial gravity in typhoid arising during lactation. In the author's cases lactation did not seem to harm the mothers, and convalescence was established at the usual time, and was not especially slow. The use of cold baths did not seem to have any effect on the function of the mammary glands. The secretion of milk was diminished, but continued for a considerable period of time. The disease was not transmitted to any of the children, although one presented the seroreaction of Widal in a slight degree. The mother's milk in this case also gave a reaction of agglutination. The normal mammary gland does not allow of the passage of germs which circulate in the blood. The microbes must first alter the epithelium of the glands.—*Annales de Médecine et Chirurgie.*

Population in Germany.—The recently published statistics for the year 1906 show very encouraging conditions in Germany. The number of deaths was 1,174,464 as opposed to 1,255,614 in 1905, the smallest absolute mortality since the formation of the German Empire, except for the year 1896. The rate per 1,000 was 19.2, the smallest on record. The number of births was 2,084,739, also a gain over the previous year. The improvement is attributed largely to the advances in the control of epidemics and in checking infantile diseases.

Tobacco in England.—According to a recent estimate, $75,000,000 are spent annually for cigarettes by smokers in the United Kingdom, $45,000,000 for pipe tobacco, and $5,000,000 for cigars. It is calculated that 80 per cent. of the men and 20 per cent. of the women in the country use tobacco in some form. The average consumption of cigarettes daily is eight per man, while pipe smokers consume at least six pipefuls a day.

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending February 14, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alabama, Mobile	Jan. 26–Feb. 2	2	..
California, Los Angeles	Jan. 18–25	13	..
San Francisco	Jan. 18–25	16	..
District of Columbia, Washington	Jan. 25–Feb. 1	6	..
Illinois, Springfield	Jan. 23–30	13	..
Indiana, Indianapolis	Jan. 26–Feb. 2	2	..
La Fayette	Jan. 28–Feb. 3	1	..
South Bend	Jan. 25–Feb. 1	1	..
Iowa, Ottumwa	Jan. 25–Feb. 1	1	..
Kansas, Topeka	Jan. 18–25	3	..
Wichita	Jan. 18–25	4	..
Kentucky, Lexington	Jan. 25–Feb. 1	1	..
Louisiana, New Orleans	Jan. 25–Feb. 1	6	Imported
Michigan, Saginaw	Jan. 8–Feb. 1	41	..
Missouri, Kansas City	Jan. 18–25	5	..
St. Joseph	Jan. 11–25	18	..
Ohio, Cincinnati	Jan. 26–31	8	..
Dayton	Jan. 25–Feb. 1	1	..
Oregon, Portland	Jan. 18–25	4	..
Pennsylvania, Williamsport	Jan. 25–Feb. 1	1	..
South Dakota, Sioux Falls	Jan. 1–25	2	..
Tennessee, Knoxville	Jan. 25–Feb. 1	6	..
Nashville	Jan. 25–Feb. 1	12	..
Texas, San Antonio	Jan. 18–Feb. 1	14	..
Washington, Spokane	Jan. 18–25	8	..
Tacoma	Jan. 8–25	2	..
Wisconsin, Appleton	Jan. 18–25	1	..
La Crosse	Jan. 25–Feb. 1	8	..
Oshkosh	Jan. 18–25	1	..

SMALLPOX—FOREIGN.

Brazil, Rio de Janeiro	Dec. 27–Jan. 3	32	15
China, Hongkong	Dec. 7–14	1	1
Great Britain, Edinburgh	Jan. 11–18	4	..
Leith	Jan. 11–18	17	1
India, Bombay	Dec. 1–Jan. 7	..	6
Calcutta	Dec. 14–21	..	2
Italy, General	Jan. 8–23	70	..
Genoa	Dec. 2–21	4	..
Japan, Kobe	Dec. 21–Jan. 4	501	138
Yokohama	Dec. 20–Jan. 14	55	13
Portugal, Lisbon	Jan. 11–18	1	..

YELLOW FEVER.

Cuba, Habana	Feb. 4–6	2	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec. 14–21	4	4

CHOLERA.

India, Bombay	Dec. 31–Jan. 7	..	1
Calcutta	Dec. 14–21	..	51
Madras	Dec. 27–Jan. 3	..	9
Rangoon	Dec. 21–28	..	7

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Dec. 27–Jan. 3	4	1
Africa, British Gold Coast—			
Accra	Jan. 13	..	Present
India, General	Dec. 14–21	3,410	2,602
Bombay	Dec. 31–Jan. 7	..	9
Calcutta	Dec. 14–21	..	18
Madras	Dec. 21–27	..	1
Rangoon	Dec. 21–28	..	7
Peru, Catacaos	Jan. 4–11	4	..
Lima	Jan. 4–11	2	..
Paita	Jan. 4–11	16	..
Piura	Jan. 4–11	6	..
Trujillo	Jan. 4–11	15	..

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Original Articles.

CHRONIC SIGMOIDITIS.

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THE sigmoid flexure is the seat of some enduring inflammatory processes to which has been given the collective name of chronic sigmoiditis. This affection has as yet not found recognition in the text-books on general medicine, and even in the special works on intestinal diseases it is dealt with in rather a cursory fashion. Boas, for instance, in his "Diagnostik und Therapie der Darmkrankheiten"[1] (one of the best treatises on the subject), devotes just twenty-two lines to chronic sigmoiditis apart from the space which is occupied by the history of two illustrative cases.

There is one paramount reason why chronic sigmoiditis is so rarely thought of by the average clinician, and this is the vagueness and incompleteness of its symptom-complex as it is generally understood. Says Boas (loc. cit.): "By chronic sigmoiditis I understand a clinical picture in which there is a permanent sensation of pain belonging exclusively to the region of the S. Romanum." To this meaningless definition he adds: "Conforming therewith, the pressure-pain is localized exclusively in that region." As remaining symptoms of the affection he mentions "well-marked diarrhea with more or less admixture of mucus, or, the opposite, obstipation." Chronic sigmoiditis, according to this conception, consists therefore of a permanent sensation of pain and of pressure pain confined to the sigmoid region, together with diarrhea and mucous discharge, or, together with obstipation.

I know of no intestinal affection of a catarrhal nature which is accompanied by a permanent sensation of pain. If this were a fact, the knife of the operator would be still oftener resorted to than it is at the present day. An apparently continuous pain on the basis of a chronic inflammatory process in the intestinal mucosa is in reality a succession of painful seizures of varying intensity with shorter or longer intermissions.

The pressure pain, of course, is a valuable symptom if one is sure of his ground. In the presence of coprostasis in the descending colon and the sigmoid flexure pressure pain may be evoked in every instance. The pain elicited by pressure upon retained feces naturally varies much in severity, it may not be more than a slight intensification of the localized uneasiness, but it may also amount to real suffering and distress. Nevertheless inflammatory processes, situated in the parts of the colon which are immovable, or almost so, namely in the ascending and descending portions, may be often localized by means of the pressure pain. On the other hand, a chronic inflammatory condition in the sigmoid flexure, a section of the colon endowed with great locomotion, can hardly ever be designated to a definite position by palpation alone. The painful sensation in the region of the sigmoid flexure is not always circumscribed and may be quite diffuse at times. This diffusion of pain may be due to the mobility of the flexure but also to the fecal column causing distention of this, the narrowest portion of the colon. Again, by pressure upon the adjacent organs, the more or less displaced sigmoid flexure often precludes the recognition of chronic sigmoiditis and gives rise to all kinds of wrong diagnosis. Nonrecognition of chronic sigmoiditis is especially apt to occur when obstipation is its concomitant. Thus, in the female, the generative organs are commonly thought to be at fault: neuralgia of the left ovary, for instance, is a rather frequent diagnosis; catarrh of the small intestines, enteralgia, intestinal rheumatism, and even appendicitis are occasionally diagnosed,* and on account of a concurring cystitis, the affection in the male remains once in a while entirely unrecognized.

The third, respectively the fourth conjoint diagnostic phenomenon of chronic sigmoiditis according to Boas, namely diarrhea with more or less mucous discharge, or, the opposite obstipation, are certainly not occurrences which are pathognomonic of chronic sigmoiditis. In chronic inflammatory conditions of other parts of the colon we have to deal with the identical eventualities. Quality and quantity of the mucus, and the manner and degree of its admixture with the feces are practically the same when it is derived from any part of the alimentary canal downward of the splenic flexure of the colon. Cell elements and other histological bodies occurring in this mucus will not disclose the latter's seat of origin as will the epithelia in the case of pus in the urine.

It is, of course, evident that on the hand of the symptom-complex critically reviewed in the foregoing, the physician hardly thinks of anything else but of chronic colitis of the descending segment of the large bowel. Chronic sigmoiditis, however, is of much more frequent occurrence than is commonly supposed, and its recognition, not only on account of instituting the proper treatment, but even more so for the reason of preventing wrong therapeutic measures, is of decided importance.

Definition.—I would describe chronic sigmoiditis as a chronic inflammatory state of the sigmoid flex-

*It must be recalled that the loose fold of peritoneum which holds the sigmoid flexure in its position is of quite discrepant dimensions in different individuals. Thus, in the newborn the sigmoid mesocolon may be elongated to such an extent that the sigmoid flexure may be situated on the right side in proximity to the cecum. Also, in some adults, the entire sigmoid flexure does not lie within the left iliac fossa. In such instances the diagnosis of chronic appendicitis instead of chronic sigmoiditis is not to be wondered at. I know of a pertaining case, a young woman in whom during an interval of the apparent perityphlitic attacks the healthy appendix was sacrificed to a wrong diagnosis.

ure, characterized by frequent exacerbations, lasting from several hours to several days, of the otherwise more or less subdued phenomena, viz., tenderness or pain in the lower left lateral and median anterior regions of the abdomen increasing upon pressure, moderate abdominal distention, with some resistance in the left iliac fossa, slight elevation of rectal temperature, obstipation, burning and aching sensation in buttocks and left thigh, various nervous phenomena, and, frequently, vesicular irritation in males, and spasmodic leucorrhea in females.

Symptoms in Detail.—Inflammation.—The recognition of the local inflammatory process by means of the sigmoidoscope is synonymous with the diagnosis of the affection. In every instance of long-continuing colitis an examination of the lower portion of the colon should be undertaken. The electrical sigmoidoscope, of which there are a number of modifications on the market, is very well suited for that purpose. I am employing now an instrument which I had made on the Strauss principle, and which permits a direct inspection of the entire lumen of the greater part of the pelvic colon. However, a long Kelly tube and the reflected light will also render good service. Only by sigmoidoscopy can we come to an appreciation of the real extent and intensity of the local inflammatory state. By the direct inspection we learn that an inflammatory process of the sigmoid flexure may be entirely confined to that part of the colon. In the majority of cases examined by me the descending portion of the sigmoid flexure was the seat of the inflammation. Of course, an inflammatory process of the sigmoid, especially in its lower part, may extend into the rectum, and, as a matter of fact, the inflammation involves the portion of the rectum nearest to the junction of the sigmoid, in a goodly proportion of pertaining instances. In other instances, the inflammation undoubtedly extends upwards and into the descending colon. Naturally, only such inflammatory processes are considered here, which take their origin in the sigmoid flexure, and not those cases of general colitis that, spreading downward, entangle the sigmoid flexure.

The pathological changes in chronic sigmoiditis are mostly confined to the mucosa. In about one out of four cases the cellular coat is involved. The muscular coat is not very frequently affected. We may find all gradations of the inflammatory process, from simple hyperemia to circumscribed and diffuse suppuration. The condition mostly encountered is exudative in character, with partial or more or less complete organization and marked induration. The inflammatory swelling is quite hard as a rule and seems to interfere with the free mobility of the affected area. Hypertrophy of the interstitial connective issue may be present to such an extent that the lumen of the affected segment of the sigmoid flexure may be considerably narrowed. A slight contraction at the site of the inflammatory process is almost always noticeable in cases of very long standing. As a result of ulcerative processes in the mucosa we may find a cicatricial stenosis. Cicatrization, ensuing on one side, may occasion kinks or twists of the flexure. In other instances we find superficial erosions which appear to be the result of epitheiial desquamation and atrophy. Some authors have described a granular variety of chronic sigmoiditis. I have thus far seen but four cases which were really granular in character. The mucous secretion is mostly augmented. Hemorrhages from the inflamed areas are often the result of very slight provocations. Suppuration, when present, is mostly superficial and is characterized by thick and cream-like pus which, as a rule, is not generated abundantly. In some instances, however, as in a case of personal observation reported hereafter, almost incredible amounts of so-called laudable pus are produced and discharged. Thin and watery pus is not a concomitant of uncomplicated chronic sigmoiditis; when present it points strongly to indolent ulcer or to malignant disease.

Pain.—The recurrent attacks of pain in the lower left lateral and median anterior regions of the abdomen—after irregular intervals of comparative ease—are usually the first and only symptom drawing the attention to chronic sigmoiditis. Were it not for the pain most patients with chronic sigmoiditis would not consult a physician. The individual attack of pain is usually of sudden onset. The patient is rarely capable of definitely locating the pain at the beginning of the attack. The painful area, in chronic sigmoiditis, is as a rule decidedly more fluctuating, than that which is the consequence of an inflammatory condition in any other portion of the colon. Pain arising from inflammation of the descending colon, for instance, is pretty well fastened to the seat of the affection and is more or less circumscribed. The peculiar anatomical character of the sigmoid flexure seems to be the main cause to which may be assigned the greater fluctuation of the pain, and the nonaccentuation of the point of tenderness, in chronic sigmoiditis, at the onset of the attack. Again, most mistakes in diagnosis, such as ascribing the pain to an effection of some other abdominal organ, are likely the result of the singular shape of the flexure and of the remarkable and strange anatomical relations it may occupy when it is chronically diseased. When the point of maximum tenderness is once ascertained the exacerbation is generally pretty well under way and the pressure-phenomenon—increased pain on pressing upon, or, on compressing, the area of maximum tenderness—is invariably present.

In chronic inflammations of the cecum, and especially of the appendix, the degree of tenderness and the intensity of the inflammatory process correspond quite closely in many instances. In chronic sigmoiditis this is generally not the case, at least not to that degree. Here a small and superficial lesion in the presence of coprostasis may occasion considerable pain while an ulceration with free evacuation of the pus may give rise to very little tenderness, even upon pressure. When there is an accumulation of feces in the chronically inflamed sigmoid the tenderness, and especially the pressure pain, is often transmitted directly to the back. The backaches of women, in my opinion, are at least as often due to a distended sigmoid as to a distended transverse colon. The burning and tenderness in the buttocks and the very frequent "heavy" and painful left thigh appear to be the result of pressure exerted upon blood-vessels and nerves by the displaced and distended sigmoid. Bodily and mental exertion are apt to bring on an exacerbation and an aggravation of the painful sensations if one of the periodic seizures is already in progress. Riding on horseback and on the bicycle, even sitting for a long time in a certain position, may provoke pain. The immediate irritation of a certain inflammatory area in the emptied sigmoid causes generally much less discomfort to the patient than the external pressure upon the point of maximum tenderness of the non-evacuated flexure. The direct irritation of the inflamed region calls

forth a certain amount of soreness which is more or less circumscribed in extent.

Abdominal distention.—A genuine exacerbation of chronic sigmoiditis is always accompanied by some flatulency and consequently also by some distention not only of the upper portion of the sigmoid but also of the other segments of the colon. The distention, which is mostly quite moderate, may subjectively announce itself in a mere fullness and tightness, while objectively nothing but an augmented area of colonic tympany may be ascertained. In no instance of uncomplicated chronic sigmoiditis did I encounter excessive intraabdominal tension, but the abdominal surface appeared mostly uniformly even and regularly rounded. There is always some resistance of varying degree in the left iliac fossa. This seems to be due to the impacted feces as a rule, but it may be also caused by the indurated area or connective tissue formation in the sigmoid walls, or by adhesions from an antedating perisigmoiditis.

Elevation of temperature.—There is no inflammatory process—even none of a chronic nature in acute exacerbation—which is not accompanied by an elevation of local temperature. This local heat phenomenon may not be sufficiently pronounced to give rise to general pyrexia, but at its seat of production, or near it, its occurrence may usually be ascertained. Thus, during a paroxysmal aggravation of chronic sigmoiditis, the rectal temperature will mostly be found to be somewhat augmented. This may range from 99.5°F. to 103°F. When the rectal temperature is above 100° F. there will be more or less systemic pyrexia. In case the rectal temperature is 1.5°F. or more higher than that of the mouth we very likely have to deal with pus production in the upper rectum, the sigmoid flexure, or the appendical region.

Obstipation.—There exists an innate tendency to obstipation in chronic sigmoiditis. The accumulation of feces in the lower portion of the descending colon and the sigmoid, indeed, seems to stand in more or less close relationship to the recurrence of the individual attacks. Coprostasis undoubtedly acts as an excitant in the chronically affected sigmoid area, but the inflammatory process, in its turn, may give occasion to spasmic or, probably, to atonic conditions of the sigmoid which may stand at the foundation of the constipation. The circumstance that diarrhea frequently supersedes obstipation does not in the least contradict the fact of the inherent tendency for fecal retention in chronic sigmoiditis. Diarrhea following habitual obstipation has to be looked upon as a reactive occurrence, as an effort on the part of the organism to rid itself of foreign material. The watery evacuations in chronic affections of the sigmoid, although ushered in by colicky pains and frequently followed by tenesmus, have a salutary effect. They continue, however, for but limited periods while the inclination to obstipation is prevalent practically all the time.

The obstipation of chronic sigmoiditis may be of the atonic or the spasmic variety. The atonic variety occurs more frequently, but the spasmic type is not uncommon, particularly in males. The atonic constipation may be due to congenital or acquired asthenia of the musculature of the sigmoid, to systemic deterioration, to an atrophy of the mucosa resulting from long-continued catarrhal processes, to degeneration of the splanchnic nerves, and to enteroptosis. Spasmic obstipation is either a reflex phenomenon due to disease of some other organ, or, with greater frequency, it is the result of an exaggerated motor innervation of the muscular structure of the sigmoid manifesting itself in spasmodic contractions of a part of the flexure.

Atonic obstipation of the sigmoid is generally characterized by feces of short cylindrical form and small diameter or by hard and firm fecal nodules, which are occasionally enveloped in a thin layer of transparent mucus. When spasm of the sigmoid is the cause of the retention of fecal matter the fecal cylinders may be somewhat softer and longer, and may appear ribbon-like or flattened on two opposite sides. On other occasions, the evacuations may be entirely scybalous, or may be composed of scybala and unformed masses.

Nervous Phenomena.—It is often difficult to say whether certain neuropathological manifestations are the cause or whether they are the result of the chronic inflammatory process of the sigmoid, or, finally, whether they stand in any relationship at all. We may meet with sensory disturbances, and may notice angioneuroses as local congestions, and erythematous and urticarial exanthema; secretory disorders especially of the stomach, are not uncommon; nerve exhaustion, mainly that variety which has been described by Abrams as splanchnic neurasthenia, is frequently encountered in a more or less pronounced form. Various manifestations of the neuropsychosis hysteria are in evidence in a majority of the instances of chronic sigmoiditis.

Vesicular irritation and leucorrhea.—An irritable bladder is the frequent concomitant of chronic sigmoiditis in males. This is undoubtedly due in most instances to tension and pressure exerted by the intumesced and displaced sigmoid upon the bladder walls. The vesical irritability often ceases after a thorough evacuation of the sigmoid. When the coprostasis extends to the rectum there occurs mostly an undue amount of residual urine, from which the bladder is relieved as soon as the fecal accumulation passes out of the rectum. The irritable condition of the bladder is characterized by a local sensation of burning, tenesmus, and frequent and painful micturition. In some cases we find evidences of vesicular inflammation. Then we have in addition to aforementioned symptoms, which are more pronounced, turbid urine with more or less pus. Cystitis accompanying chronic inflammation of the sigmoid may be due in the first instance to congestion of the mucous membranes of the bladder or to the accumulation in the same of residual urine.

The leucorrheal discharge which is almost invariably an accompanying phenomenon of chronic sigmoiditis in women, is of a more or less spasmodic nature. It appears to be entirely dependent upon the exacerbation of the sigmoidal inflammatory process, arising and declining with them. Up to a certain point, this spasmodic leucorrhea may be looked upon as a manifestation on the part of the nervous system; to the greater extent, however, it seems to be the outcome of the mechanical interference of the diseased sigmoid with the uterus or the adjacent generative organs.* In the intervals, the leucorrheal discharge may persist, assuming, however, a certain degree of latency. It becomes markedly diminished in amount, loses its muco-

*The diseased uterus—on the other hand—may interfere with the function of the sigmoid. The retroverted uterus, for instance, is found in Douglas' pouch tightly agglutinated to the sigmoid after a local perimetritis, and an exudate, due to parametritis, may even diminish the lumen of the flexure temporarily.

purulent character, and appears as a simple catarrhal excretion.

Frequency, Sex, Age.—A chronic inflammatory state of a portion of the sigmoid flexure is by no means a rare occurrence. In my experience, an inflammatory process is of much greater frequency in the sigmoid than in any other segment of the colon. I am of the opinion that a large proportion of cases designated as "chronic colitis" or "chronic enteritis" are in reality instances of chronic sigmoiditis. The extent of sigmoidal distention and displacement may be so great as to *quasi* invite inexact or wrong diagnosis. As a matter of fact, however, any chronic intestinal affection not especially limited to the lower right quadrant of the abdomen, is briefly (and superficially) referred to as "chronic colitis" or "chronic enteritis" by the overwhelming majority of practitioners. Chronic sigmoiditis is an apparently rare affection for the reasons that hitherto but few differentiated between disease of the sigmoid and that of the colon, and that it has as yet not acquired full-fledged citizenship in the works on medicine. Again, the name of the affection is of little importance; it is the extent and location of the lesion which interest us for the sake of the treatment.

The literature concerning chronic sigmoiditis being so scarce it is impossible to give any definite statistical data as to its frequency at this date. I can refer therefore to my own experience only. According to this (which dates back to somewhat over six years, when I began to make a systematic search for sigmoidal involvement in every instance of abdominal disease brought to my attention) *inflammatory processes occur fully as often in the sigmoid flexure as in the cecal and appendical regions.*

I have seen about four times as many cases of chronic sigmoidis in females as in males. All the males in whom I diagnosed the affection were thin and undernourished individuals. The women who exhibited sigmoidal inflammation were generally in a better state of nutrition. The prevalence of the affection in woman must be consequential to gestation, and to the frequent occurrence of general enteroptosis, more especially coloptosis and sigmoidoptosis, and their inevitable concomitant, obstipation.

Almost all the instances of chronic sigmoiditis, which came under my observation, occurred in individuals over thirty years of age; in but a few cases the clinical picture was fully developed between the second and third decennary of life. A majority of the cases started around the thirty-fourth or thirty-fifth year. In a few instances the affection had not appeared before the fifth decennary of life. When first brought to my attention the symptom-complex had existed in the various instances for from a few months to fourteen years.

Course.—The affection runs an exceedingly chronic course. It may be ushered in as an acute sigmoiditis; however, as the symptom-complex develops but gradually we may assume that it is not necessarily in etiological relationship to the acute variety. Chronic inflammatory processes of the sigmoid are characterized by irregularly occurring exacerbations of the symptoms, by remissions and intermissions. The exacerbation lasts usually from twelve to thirty-six hours, the stage of abatement of the acute symptoms from three days to two weeks, and the intermission—the pain-free period—is of most irregular duration. Rational management of the condition should bring about some improvement—a functional improvement so to say—in every instance. A complete amelioration is certainly possible in all those instances where the inflammatory process is superficial and limited in area. Many of the graver forms of inflammation are undoubtedly amenable by proper surgical treatment. The subsidence or cessation of the systemic phenomena ensues runs generally parallel with the amelioration of the local condition.

Diagnosis.—Chronic sigmoiditis is readily recognized by its symptomatology, and particularly by the direct inspection of the affected area with the sigmoidoscope. In every case of recurrent pain in the lower left quadrant of the abdomen, increasing upon pressure, and in the presence of more or less acute aching in the buttocks and the left thigh, and habitual constipation, chronic sigmoiditis should be thought of. The history of the case, the rather sudden onset of the individual attack, and the obstipation facilitate the diagnosis of chronic sigmoiditis. Inspection reveals in almost every instance some abdominal distention in the vicinity of the affected area, which is more pronounced in lean

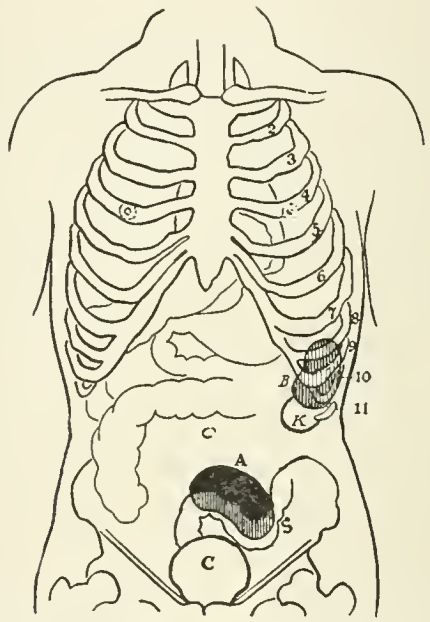

FIG. 1.—One of the author's cases of splenoptosis. A, splenic tumor; B, spleen after retraction; C, bladder; K, kidney. S, sigmoid flexure. (*From the International Journal of Surgery.*)

persons. The abdominal distention is best noticed when the eye of the examiner, who is standing at the head of the reclining patient, can travel down the latter's body. Percussion, which I *always* perform with hammer and pleximeter, elicits the deadened sound to which Traube has already drawn attention, and the tympany, due to gaseous inflation, in the upper portion of the involved colonic segment. Palpation increases the sensitiveness of the affected area and may hence serve as a means for its localization. Schilling[2] has given some valuable points on the palpation of the sigmoid flexure. Auscultation is of no assistance in determining the seat of the pathological process.

Differential Diagnosis.—The principal abnormal states from which chronic sigmoiditis must be distinguished are neoplasms, adhesions, prolapse of the left kidney, wandering spleen, and the diseases of the female internal organs of generation. The spleen, in exceptional cases, may descend into the pelvis and come into close contact with the sigmoid flexure as shown in the accompanying drawing of one of the author's cases of splenoptosis.[3]

By a careful physical examination—even without sigmoidoscopic inspection—the various affections with which chronic sigmoiditis may be confounded, can be readily excluded as a rule. Of course, when one or the other of these affections concurs with chronic sigmoiditis a discriminating diagnosis is more difficult to arrive at. In all pertaining instances the employment of the sigmoidoscope is imperative.

The following instances of chronic sigmoiditis are a few of those which have come under my observation:

Case 1.—The true nature of this instance of chronic sigmoiditis—the first case of the affection ever brought to my attention—was only recognized by me some years after it came under my observation. It must be remembered that in 1894, the year when the case was first seen by me, we did not know anything at all about chronic sigmoiditis. Besides, the case was not of the rather frequent and typical catarrhal form, but one of the much rarer suppurative variety.

In the night of February 12-13, 1894, I was hurriedly summoned to Mrs. Anna D., thirty-four years old, a native of the United States, the mother of one child. The patient appeared to be in great agony, and her husband told me that she had had a number of similar attacks before, that she was under treatment for uterine disease for some years, and that nothing but hypodermics of morphine would afford relief of the acute pain. She had a temperature of 103.5° F. (taken by the mouth), which, as on previous similar occasions, was preceded by a chill. The abdominal examination revealed pronounced tenderness in the hypogastric and left inguinal regions. Palpation proved unsatisfactory on account of the insufficient pressure which could be exerted. A diagnosis was not attempted that night. Morphine was introduced hypodermically, and soothing applications were ordered to be applied upon the abdomen.

Four days later, when the acute symptoms had abated, the following history was elicited from the patient. For three years previously she had periodic attacks of severe cramp-like pains in the left lower abdomen, which always followed constipation of some days' duration. The pains would be felt in the back and would often extend down the thighs. The attacks would come on at irregular intervals, and were always ushered in with chills, after which a rise in temperature would set in. Unless morphine was administered and free evacuations secured the pain would last for some days. There was a vaginal discharge all the time, which became more profuse and of very offensive odor during the attacks. The attacks would not, as a rule, concur with the menstrual periods. In the intervals the feces would cause more or less trouble, and would invariably be discharged together with goodly amounts of what was considered yellowish pus. The excretion of pus would also frequently ensue on going to stool when defecation did not take place. The patient had consulted a number of physicians, who, it seemed, were unanimously of the opinion that the attacks were due to disease of the uterus or its appendages, and that the apparent pus came from some part of the generative system opening through a fistula into the upper part of the rectum. A thorough examination of the rectum made by me did not show a fistulous opening, but pointed out that the pus came from beyond the rectal ampulla. A special examination of the sexual organs by a gynecological expert revealed a chronic endometrial inflammatory process and a slight bilateral salpingo-oophoritis. The source of the pus, which apparently traversed some part of the intestinal canal, could not be determined.

The patient, strongly objecting to an exploratory laparotomy, as she felt quite comfortable in the intervals, remained under my care for a long time. I thus had occasion to observe and study numerous attacks, all of which resembled the one described in the foregoing. There would be pain in the abdomen and the sacral region, the obstipation, the chill, the fever, and the cessation of the excretion of suppurative material. After a while I came to the conclusion that the retention of the pus seemed to stand in close relationship to the production of the chill and the subsequent temperature elevation. So long as the discharge continued there ensued no temperature variation. A careful inquiry into the nature of the discharge showed the following:

Amount of discharge in twenty-four hours (average of four consecutive days), estimated, 25 cc.; color, light yellowish (Vogel's scale of urine tints No. 2); odor, none; consistency, creamy; reaction, slightly alkaline; water, 84.3 per cent.; solids, 15.7 per cent.; fats, 1.8 per cent.

The microscope showed pus corpuscles in enormous and erythrocytes in moderate amounts, also epithelia and goodly numbers of young leucocytes (mucous and lymph corpuscles). The microchemical reaction left no doubt as to the pus character of the discharge.

If the case had not been of such decided chronic nature (and if the patient had shown pronounced pyemic symptoms) the origin of the pus could have been assigned to a paraintestinal suppuration breaking through and into the colon. The pus was pure and was discharged either alone or but superficially adhering to the outside of the hardened feces. A real admixture of the pus with the feces was never observed. Floccules of pus, grayish white and resembling small mucous flocks as they are occasionally seen in chronic inflammatory disease of the small intestines, were hardly ever met with. Pieces of membranes, or other components of the pathological excretion denoting membranous catarrh of the intestines, could not be distinguished.

The abundance of the pus excretion and the perfect morphological condition of the pus corpuscles pointed to a suppurative process in the lower segments of the colon. Were the pus cells derived from an ulcerative condition in the small intestine, or had they taken their origin in the cecum, they would have been disintegrated—by digestion and putrefaction—to such an extent that but small floccules, undeterminable as pus, could have passed out of the anus.

In the course of time the attacks became more frequent, and in consequence thereof the patient grew weaker and became morose. She had consulted a number of gynecologists and a proctologist in the meantime—neither, however, having arrived at a proper understanding of the pathological condition. In 1898, after an attack, when the temperature remained between 101.5° and 103° F. for about one week, I insisted upon the exploratory laparotomy, and if possible, a curative operation. The abdominal section was performed by Dr. Charles K. Bridden, at the Presbyterian Hospital. I do not remember all the details of the operation, but, although the appendix and some of the uterine appendages were removed for minor disease, the seat of the pus formation, in spite of a thorough search for it, could not be detected. The operation

availed nothing whatsoever so far as the attacks and the pus excretion were concerned.

Early in 1899 I succeeded in definitely locating the lesion in the middle and lower portion of the sigmoid flexure by means of Trousseau sounds and a long Kelly endoscope. The olive point of the sound which was introduced through the endoscope could be clearly felt through the abdomen, and the point of maximum tenderness could be located in the sigmoid flexure without the shadow of a doubt. On the withdrawal of the sound the endoscopic tube was introduced further and I could see the oozing of the pus from the exposed and inflamed areolar tissue of the sigmoid. For this cellulitic state local treatment was advised, which soon brought about some relief. On account of a four months' absence from town the patient drifted from my observation.

Case 2.—Mrs. Fannie F., mother of one child, came first under my observation in 1899 when she was 63 years old. She had irregular periodic attacks of pain in the lower left abdomen, radiating toward and beyond the median line, recurring every week or second week and lasting, on the average, for about two days. Obstipation and subsequent compensatory diarrhea, with more or less discharge of mucus, were the rule. The temperature was always increased, varying from 99° F. to 100° F. in the mouth, and from 100° F. to 102.5° F. in the rectum. Painful sensations of apparent neuralgic character in both thighs and buttocks were invariably present. She also experienced a good deal of vesical tenesmus during and after the seizures, and the urine showed the characteristics of a slight inflammatory state of the bladder. The patient had undergone treatment at the hands of a number of practitioners. She had been treated for chronic appendicitis, for enteritis, and for mucous colitis. In spite of all medication, the attacks had become more frequent of late.

A local examination during an interval revealed a number of thrombotic hemorrhoids and an apparently chronic or subacute congestion of the rectal mucosa. A flexible sound brought through the endoscope into the lower portion of the sigmoid flexure, disclosed therein a pronounced state of tenderness. The case was therefore treated as one of sigmoid inflammation. Local treatment, by means of irrigation, was instituted. The attacks soon became less violent and diminished in frequency. During 1900 the patient had five attacks, in 1901 also five attacks, in 1902 three attacks, in 1903 six attacks, in 1904 four attacks, in 1905 no attack, in 1906 one attack. Numerous examinations made between 1900 and 1904 disclosed the much improved condition of the sigmoidal mucosa.

Case 3.—Mrs. Kate E., 43 years old, no children, was referred to me on January 26, 1901. Patient gave a history of manifold ills and aches extending over a period of more than twenty years. For the past ten years she had had on a few occasions fecal impaction of very firm consistency which could be broken up and removed with the greatest difficulty only. She was obstipated practically all the time, and the various physicians who attended her had in vain tried to overcome the intestinal atony. Every now and then she had an attack of severe pain in the lower left side of the abdomen increasing upon pressure and concurring with sigmoidal and colonic inflation, aching pain in the lumbar region and the buttocks, and neuralgic manifestations in the left ovary and thigh. There was always an elevation of rectal temperature during and after an attack. In one instance the rectal temperature, varying between 101.5° and 102.5° F., continued for more than two weeks after the attack. Severe headaches and hysterical manifestations completed the clinical picture. Endoscopic examinations of the sigmoid showed a great deal of granulation tissue in all parts of the mucosa. There were also raw spots and some bloody serum. The patient was put upon constitutional and local treatment. A course of Fleiner's oil cure, continued for about ten weeks, finally overcame the lethargy of the lower bowel.

Case 4.—Mrs. Lillian C., 30 years old, mother of two children, was referred to me on January 30, 1903. The patient was very lean, weak, and nervous. She suffered from habitual obstipation, and had the recurrent attacks with all the earmarks peculiar to chronic sigmoiditis. There was the pain in the left inguinal fossa extending to the umbilical region, becoming intensified upon pressure; the pain in the back, buttocks and left thigh, the elevation of rectal temperature during and after the seizures, the spasmodic leucorrhea, and occasionally colonic mucus containing once in a while some streaks of blood. Abnormal phenomena on the part of the nervous system were also not wanting. An examination of the electric sigmoidoscope confirmed the diagnosis of chronic inflammation of the sigmoid flexure. The proper treatment, which was principally a local one, has in the course of time brought about a complete restoration of the patient, whose weight, vigor, and resistance have materially increased.

Case 5.—Mrs. Esther B., 33 years old, no children, consulted me on April 23, 24, and 25, 1905. For a year and a half she is suffering with pains in the left side extending from the region of the bladder to the buttocks. The pains usually occur once or twice weekly, and invariably concur with obstipation. The pain-free interval occasionally lasts for one or two and even three weeks. The pain is of a pressing nature and increases when manipulating the affected area. The point of maximum tenderness is referred to as being situated in the left iliac fossa. The pain produces a tired feeling in the left leg and continues to be quite severe for three or four hours. Frequently a burning sensation in the bladder and frequent micturition are in evidence. A moderate fever generally accompanies the attacks. Intestinal mucus and some shreds of membrane have been noticed once in a while. The physical examination shows the sound condition of the genital organs, and the limitation of the intestinal inflammation to the sigmoidal segment.

Case 6.—Francis H. J., 35 years old, native of the United States, a lawyer by occupation, was referred to me for the diagnosis of his condition on Sept. 25, 1905. The symptom which troubled the patient more than any other was severe headache recurring at irregular periods, but generally once a week, for which all kinds of treatment at the hands of general practitioners, neurologists, and ophthalmologists had been without avail. Hand in hand with the headache there always occurred obstipation and pain in the left lower abdomen, the lumbar region, the buttocks, and the left thigh. Vesical irritation was also not missing. My first examination of the patient was made on a day of an attack. He had vomited a number of times in the morning, was very weak, and complained of intense migraine. The rectal temperature was 103.2° F., pulse frequency 110, and the pressure of the radial arteries equivalent to 120 mg. of mercury.

The bowels had not moved for three days. There was a distinct maximum area of tenderness in the

left iliac region, which could be referred to the sigmoid flexure. This, as well as the descending colon, could be readily palpated as they were loaded and dilated with hardened feces. The patient complained of heavy pressure pains in the lumbar region and of numbness in both legs. The pupils appeared rather contracted, co-ordination was impaired, and the various reflexes were exaggerated. The urine exhibited a specific gravity of 1015, and no pathological constituents of any sort.

The symptom-complex offered by the patient was one which is characteristic of intestinal toxicosis, or of autointoxication originating in the intestinal tract. The patient was treated according to the rules laid down in my work on autointoxication.[4] On the day of the second examination, three days later, the entire syndrome had disappeared, but there was present some diarrhea and tenesmus. The latter appeared of sigmoidal origin. The rectosigmoidal examination, made in the knee-chest posture, disclosed external hemorrhoids, a spongy condition of the rectal mucosa, and a profound granular inflammation of the entire sigmoid flexure.

Case 7.—James D., 37 years old, native of United States, a coachman, came under my observation on February 14, 1905, giving the following history: Every few days, when driving in the late afternoon, he would get a cramp-like pain in the abdomen, which forced him to draw up his knees and sit on his right buttock. The pain would increase when he would stretch himself out or was lying flat on his bed, and would make itself evident all over the abdomen and the lumbar region. The thighs, especially the left, would often feel as being compressed by a tourniquet. Obstipation and meteorism would prevail practically all the time. There would occur occasionally a small discharge of mucus from the rectum, together with that of the feces, but not intermingled with them. The abdominal pain would also be felt in the bladder, which, becoming irritable, would cause a frequent desire to micturate. The attacks would be ushered in with a chill, as a rule, and the patient would be feverish for a day or two. He would take all kinds of cathartics and laxatives, and would increase the dose when they had failed to act sufficiently. He was examined by some physicians, who pronounced his case one of chronic appendicitis, advising an operation.

The abdominal examination revealed three distinct points of maximum tenderness: Over the hepatic and the spleenic flexures of the colon and in the left iliac fossa. In the latter there was marked rigidity. The entire colon seemed to be full and inflated. A large dose of castor oil was ordered to be taken in order to procure a complete evacuation of the bowels. The examination on the following day elicited rigidity of the abdominal muscles, tympanitis over the area of the cecum and the transverse colon, much exaggerated gurgling sounds in the cecum, an area of maximum tenderness increasing upon manipulation in the left iliac fossa, and excruciating pain in the anterior rectum on palpation. The acute symptoms, including the obstipation, subsided after about two days, the treatment consisting merely in the administration of atropine.

The inspection of the sigmoid flexure with the endoscope, made a week later, causing no inconvenience in the rectum, evinced a general inflammatory condition of the sigmoid, including minute pus foci and streaks of apparently raw surface. Abdominal palpation over the sigmoidal area, performed while the endoscope was in situ, demonstrated the presence of a circumscribed but quite extensive area of tenderness on all sides of the instrument. This fact was deemed rather suggestive of concurring chronic involvement of the peritoneum, with possible adhesions. The case was hence diagnosed as one of chronic sigmoiditis complicated by perisigmoiditis. Since the institution of treatment for this condition, the patient had but one recurrence of the attacks (Feb. 1, 1907).

Case 8.—Mrs. Betty L., 53 years old, born in Russia, mother of four children, came under my observation on Feb. 13, 1907. She complained of painful seizures in the left hypochondrium, which would supervene at irregular intervals, occasionally twice a week, but mostly weekly or biweekly. The attacks would come suddenly, but would be preceded by obstipation, which always prevailed more or less. The pains would be dragging or pressing in character and would radiate toward the back, the groin, and the genital organs. Occasionally there would be some mucus in the stools. She had been treated for prolapsed left kidney, for colitis, and for uterine retroflexion. The physical examination on a pain-free day elicited the condition of general enteroptosis, including the prolapse of the stomach, the transverse colon, both kidneys and the uterus. On percussion there was a tympanic note over the transverse colon, but a pronounced, deadened sound over the hepatic as well as the spleenic flexure of the colon. Traube's phenomenon was present in the left iliac fossa. Palpation demonstrated the presence of hardened fecal material in the descending colon and the sigmoid flexure, and an area of maximum tenderness in the left inguinal region. There was no tenderness on the right side nor over the bladder or the internal organs of generation. The rectal temperature was 99.6° F. There were some external and internal hemorrhoids. The sigmoidal mucosa appeared in a state of congestion and was quite tender throughout. The endosigmoidal tenderness corresponded exactly with the area of maximum tenderness in the left inguinal region, which was elicited from without. The case was diagnosed and treated as one of uncomplicated chronic sigmoiditis.

General Conclusions.—The eight instances of chronic sigmoiditis, the brief histories of which are recounted in the foregoing, form about the sixth part of all the cases of that affection which have come under my observation. Naturally, extent and intensity of the inflammatory processes were of manifold degree in the various instances. That an inflammatory condition may be limited to the sigmoid flexure there is no question. That such an inflammatory condition may be idiopathic, at least in a proportion of cases, we have to assume on logical grounds. However, we will not be far out of the way when we maintain that a goodly number of the pertaining instances are deuteropathic in character; that they are, in other words, the consequence of a pre-existing condition. The direct local condition predisposing to inflammation of the sigmoidal mucosa is habitual obstipation and long-continued drug-catharsis, the more mediate cause acting as predisponent for sigmoiditis being an adequate or perverse nerve impulse in the descending and especially in the sigmoidal segments, of the colon.

In every instance of chronic sigmoiditis which came to my notice, there prevailed obstipation or a tendency thereto, and the characteristic lethargy of the large intestine, which is directly attributable to

the customary ingestion of purgatives. Stagnation of the feces occurs mostly in the lower portion of the descending colon, and in the sigmoid flexure the peculiar anatomy of which virtually invites the retention of feculent material. Inflammatory processes of the colonic and sigmoidal mucosa may thus be set up readily to some extent, by mechanical injury on the part of the accumulated excrementitious substances, to some extent by chemical irritation of the products of secondary fermentation evolved from the impacted feces.

Intestinal spasm, atony, or paresis, by giving occasion to obstipation, may be the more remote causes of chronic inflammatory processes of the sigmoid flexure. The great majority of all intestinal affections which are due to insufficient or perverse innervation arise in the sigmoid. An initial intestinal spasm is almost in every instance confined to the sigmoid; intestinal atony or paresis, as a rule, starts in the sigmoid; seventy per cent. of all cases of volvulus—due primarily in almost every instance to fecal impaction, and induced forced peristalsis, that is, perverse innervation—occur in the sigmoid flexure.

Of course, chronic sigmoiditis may be associated with numerous concomitants and complications. Its occurrence, in fact, favors the production of other, especially functional, disturbances of the alimentary canal. Functional disorders of the cecum, for instance, it seems to me, are often due to a chronic pathological condition of the sigmoid. The synchronous occurrence of cecal derangement and the syndrome of chronic sigmoiditis often present the clinical picture of chronic appendicitis. Again, we know that in the etiology of appendicitis itself, chronic obstipation (and consequently sigmoidal disease) plays an important rôle. Furthermore, perisigmoiditis may be due to the same cause which gives occasion to endosigmoiditis, or it may be the direct consequence of the latter, and inflammatory processes in other parts of the peritoneum may be engendered by chronic sigmoiditis or its most frequent immediate precursor—obstipation.

Having abundant evidence that the vast majority of instances of colitis are limited to the extreme lower portion of the colon, the sigmoid flexure, that obstipation and the aforementioned neuroses of the intestines concern, at the outset at least, virtually only the lowest portion of the colon, we are at loss to understand why the present day treatment of the affections occurring in that region consists almost exclusively in the ingestion of drugs which have to traverse about thirty feet of the alimentary tract before they reach the seat of the lesion. Small wonder, therefore, if the target is not hit at that distance, if the drug loses its efficacy during its passage from one end of the alimentary tube to the other, if its effects are uncertain and ephemeral, and if it even contributes to the aggravation or the perpetuation of the local lesion. We do not treat a local affection of the nose by the exclusive internal administration of medicines, and there is no reason whatsoever why affections in those parts of the lower colon which are accessible to local treatment should not receive the benefit of the latter in addition to the proper causal and constitutional management.

Treatment.—The *causal treatment* of chronic sigmoiditis consists in the regulation of the functional activity of the sigmoid flexure. In my experience, sigmoidal spasm (and therefore many cases of intestinal occlusion) is readily amenable to atropine in practically every instance. To this end, the alkaloid should be given hypodermically, in doses of 0.0006 gram (1/100 gr.), which should be repeated until relaxation of the affected parts has ensued. When the spasm is less pronounced, but occurs on the slightest provocation—a factor which stands at the foundation of so-called spasmic obstipation—a mild nervine-narcotic, administered by the mouth or in the form of suppositories, will generally give the best results. Lupulin is probably the most effective, and at the same time an innocent, enteric nervine-sedative.[5] Enterospasm of this nature is often permanently overcome by the long-continued administration of lupulin in daily doses of from 2 to 4 grams. Lupulin, in the following combination, may be found of service in the motor neuroses of the sigmoidal segment of the colon.

℞ Lupulini .....
Strontii bromidi ....aa 0.15
Ft. caps. d. t. dos. No. L.
Sig. Two capsules 3-5 times a day.

℞ Lupulini 0.3
Pulvis ipecacuanhae 0.02
Ft. caps. d. t. dos. No. XX.
Sig. One capsule 4-6 times a day.

Strychnine and kindred tonic medication have in my hands proved very inefficient in overcoming intestinal atony of any degree. Drugs of the class of lupulin have proved in my experience decidedly more valuable in the treatment of intestinal motor insufficiency. In all sigmoidal neuroses I have often prescribed to advantage lupulin in the form of suppositories (in hollow glycerogelatin cones if possible), which I ordered to be introduced as high as possible into the rectum. However, medicines are the least effective remedial agents which are at our disposal in the management of long-continued sigmoidal lethargy. Regulation of the diet is the foremost curative factor. A regimen in which the proteids preponderate leaves very little residual matter in the intestines and tends therefore to obstipation. One, in which the carbohydrates occur in abundance, is productive of flatulence and intestinal hyperfermentation and therefore of mucosal irritation. The diet, best suited for sigmoidal lethargy, is one in which green vegetables like spinach, lettuce, savoy cabbage, string beans, and absorbable fats with comparatively high melting point, like the yolk of the egg, predominate. In the ratio in which the motor mechanism improves may the amount of green vegetables and fats be reduced, to be replaced by proteids and carbohydrates. The sugars are the carbohydrates producing the least digestive difficulty.

However, it is best to defer the ingestion of starches for as long a time as possible; when the functional activity of the sigmoid has been definitely re-established they may be permitted in small amounts. No matter how well individuals who have been subject to intestinal motor insufficiency feel at the time, starchy foods should always be partaken of by them sparingly. Yolks, and in a measure also, the green vegetables, should compensate for the loss of nutritive elements.

The next important means in overcoming sigmoidal atony is exercise, active as well as passive. Of course, the active exercise must not exhaust the patient, as overexertion would not only impede his improvement, but would probably cause an aggravation of the atonic state. Walking is a good mode of exercise, but swimming is greatly more efficient as a rule. Calisthenics, promoting the vigor of the abdominal organs, are very useful. A gymnastic

exercise which seems well adapted for the reduction of intestinal motor insufficiency in general and sigmoidal lethargy in particular, is the following: The patient, standing, raises the bent leg so that the knee comes to the level of the hip, and after holding it in that position for a few seconds, suddenly jerks it forward forcibly. This exercise is executed by alternating with the two legs in the manner that the left leg performs it always twice in succession and the right leg but once. Thirty of these individual exercises, twenty with the left leg and ten with the right leg, should be carried out from three to ten times during each day for a more or less protracted period. Breathing exercises, developing abdominal breathing, are imperative in the treatment of sigmoidal motor insufficiency. They should go hand in hand with the other exercises.

Of the passive exercises, massage, electrical and vibratory massage, and the Zander mechanical movements, in my experience, have proved to be grossly overrated devices in the management of sigmoidal lethargy. By far the best results in the way of passive exercise I have obtained with a strong faradic-sinusoidal current. This combination current is to be applied by means of sponge electrodes, one pole in the left iliac fossa or on the left thigh, the other either near the splenic or the hepatic flexure of the colon. The secret of success when employing this form of electricity for the treatment of deficient sigmoidal motor mechanism depends on the one hand on the proper placing of the electrodes and on the other, on the length of time the affected area is subjected to the current. The applications, of which each must occupy at least one hour, should be made daily, if possible. Three or four weeks' continuous treatment will mostly show the desired results.

Hydrotherapeutic procedures often render efficient service in the treatment of sigmoidal lethargy. Cold sitz baths, the cold abdominal pack, and the Scotch douche should be given a trial in conjunction with the other physical means. When the sigmoidal lethargy goes hand in hand with a relaxed and elongated state of the muscle fibres of the sigmoid, sigmoidal atony—when, in other words, functional disturbance concurs with structural changes, rest and other measures employed in the treatment of enteroptosis, should be resorted to. Rose's belt, with a number of additional supporting straps of zinc oxide plaster in the left iliac fossa, will yield very satisfactory results as long as the patient is kept on his back. Later on a well-fitting abdominal supporter, as the one devised by me,[9] with special upbearing pads in the inguinal and sigmoidal regions, should be worn for an indefinite period.

For the *pain* of an acute exacerbation of chronic sigmoiditis opium, or any of its derivatives, for well-known reasons, should never be prescribed. Usually the evacuation of the bowels is promptly followed by the subsidence of the more intense pains. Hot applications and counterirritants may be applied to the abdomen, the buttocks and the thighs. In case the painful sensations continue, suppositories containing belladonna, the extract or powdered leaves, should be inserted into the rectum as high up as possible. If tenesmus is present, it is advisable to add lupulin in gram doses to the suppository which should have for its base a glycerogelatinous mass.

The *local treatment* is imperative in the rational management of chronic sigmoiditis. The success of the local treatment depends in a certain measure upon the transitory quiescence of the sigmoid flexure. Such a state of repose of the sigmoid, as we have seen, is the rule when it is chronically inflamed. Of course, an active intestinal peristalsis should be reduced as much as possible during the time of local treatment. However, a complete suppression of the peristalsis, as is advocated by many clinicians in certain acute processes, is neither called for nor possible to carry through without producing additional injury. Opiates are here again entirely out of place. Belladonna, lupulin, valerian, viburnum opulus or prunifolium, bromides, chloral hydrate, cannabis indica, and similar agents—when small amounts of liquid and solid ingesta are taken—induce a transitory state of additional sigmoidal inactivity sufficing for our purposes.

Before local treatment is applied the sigmoid flexure must be entirely evacuated and cleaned. There is nothing that accomplishes this end better than a high enema of warm soap suds. In many of the ordinary cases the local treatment may be applied by means of sigmoidal irrigation through a 50 cm. (18 inch) soft rectal tube. Of course, care should be taken that the tube becomes properly engaged in the sigmoid, but it is not essential that it be pushed into it for more than 10 cm., that, in other words, the tube be inserted for more than 30 cm. (12 inches) measured from the anus. For soothing the irritated or inflamed surface of the mucosa I am in the habit of ordering irrigations with freshly made infusions of chamomile flowers or with infusions of sage (sage, 15 grams, water, boiling, 500 cc.). The compound infusion of sage, warmed to about 110° F., the formula of which is appended, serves as an excellent emollient and very mild astringent.

℞ Sage ..... 15 grams
Hyssop ..... 15 grams
Borax ..... 2 grams
Water, boiling ..... 500 cc.

Infuse the drugs with the water, and dissolve the borax in the colature.

The healing process is undoubtedly hastened by irrigation with very mild astringents. For this purpose, borax alone in 2 per cent. solution, or boric acid in the same strength, or zinc sulphate 1:1000 H_2O, or lead acetate 2:1000 H_2O, or aluminum acetotartrate 10:1000 H_2O, may be freely employed.

All other local treatment should be applied through an ordinary rectoscopic tube of about 25 cm. (10 inches) in length, or in inexceptional instances, through the much longer sigmoidoscopic tube. I prefer the smaller tube, firstly, because it is long enough to serve as a guide for the flexible applicator which is gently pushed to the diseased area in the sigmoid, and, secondly, because the reflected light or the electric headlight can be employed to greater advantage with a short than with a long tube. Protective and healing agents other than bismuth or calcium carbonate, which may be injected as an emulsion through a stiff catheter, should be applied directly to the inflamed mucosa. It is always best to try first the milder protectives and astringents before resorting to agents like silver nitrate or tannic acid. The strong astringents, it is true, call forth reduction of the inflammatory phenomena, as pain, heat, redness, swelling, and hypersecretion, in many instances, but they produce a leathery mucosa which cannot functionate properly.

As the disappearance of the symptoms of inflammation is not synonymous with the reestablishment of a physiological state, and as the strong astringents give rise to an abnormal condition of the sig-

moidal mucosa, it is invariably advisable to wait with their administration until the weaker agents have proved inefficient. Good protective applications which are slightly astringent and have decided analgesic and antiseptic action are the following pastes:

℞ Menthol .....2.5 grams
Oil Eucalyptus .....20. grams
Bismuth subnitrate ..12. grams
Glycerin .....15. grams
Gum tragacanth / Water } q.s. ad 60. grams

℞ Oil Eucalyptus .....30 grams
Bismuth subnitrate....30 grams
Oil olive .....15 grams
Powdered gum acacia.....
Make emulsion.
Water.enough to make 60 grams

These pastes will not deteriorate and are always ready for use.

The organic silver compounds I classify among the milder astringents; they may be used in proper solutions as local applications. If the case cannot be successfully treated without taking recourse to tannic acid or silver nitrate, they should be employed as direct topical applications and never in the form of irrigations.

There are, of course, a great number of agents which may be of use in the local treatment of sigmoiditis. In their employment we must be guided by the same principles which underlie the treatment of mucous membranes in other parts of the body, viz., not to replace one abnormal state by another, but to bring about the physiological activity of the diseased tissue without injuring the structural or functional conditions of the adjacent areas. Deep-seated suppurative conditions of the sigmoid and certain forms of chronic sigmoiditis associated with perisigmoiditis, perisigmoidal abscess, adhesions, or other complications involving the structure of neighboring organs, do not belong in the realm of the internist, but demand surgical interference. The earlier the nature of such cases is recognized and the earlier they are operated upon, the more chance there will be for ultimate recovery. If after abatement of an exacerbation of chronic sigmoiditis and in the absence of any other disease, an elevation of temperature has continued for two or three weeks together with chills, emaciation, anemia, and malaise, we very likely have to deal with a suppurative process in the sigmoidal structure or its vicinity requiring operation.

The treatment of all uncomplicated cases of chronic sigmoiditis, however, belongs unquestionably to the general practitioner.

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250 WEST SEVENTY-THIRD STREET.

CARDIAC HYDROTHORAX.

REPORT OF A CASE ASPIRATED 311 TIMES.*

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WHILE the case I have to report belongs to a class whose occurrence is too frequent to call for any special attention, it is particularly interesting on account of the large number of times the man's chest was aspirated and the enormous quantity of serum withdrawn in a comparatively short space of time.

Hydrothorax of cardiac origin is a condition too well known to require a lengthy discussion of its morbid anatomy, etiology, symptomatology, etc., at this time. Suffice it to say that it is an effusion of serum into the pleural cavity, not due to a disease of the pleuræ. It is a symptom resulting from a variety of causes which produce physical exosmosis of the blood serum. It is merely a dropsy of the pleural cavities. These cavities become reservoirs of serum just as the interstitial tissues of the body become waterlogged in the same diseases. It is never idiopathic, but invariably accompanies some disease or condition which is characterized by an abnormally increased venous pressure following dilatation of the right heart after compensatory hypertrophy has reached its limit and the heart yields to the backward current of blood. It is the result mainly of resistance to the free circulation of the blood through the vascular bases of the pleural membrane. There is no lesion of the pleura itself, but the pleura and subpleural connective tissues are swollen and thickened by maceration in the serum.

Hydrothorax more frequently accompanies valvular diseases of the heart and chronic nephritis, and when due to these causes it is usually bilateral. It is occasionally caused by pressure upon the venous trunks and upon the thoracic duct due to intrathoracic tumors, aneurysms, emphysema or sclerosis of the lung, and then it is usually unilateral and occurs without general dropsy.

The patient, a physician not in active practice, was 46 years of age, had always led a fairly active, more or less outdoor life, and while not in the most robust health, had never had any serious illness. His previous habits as to alcohol and tobacco were fairly good, but during this illness he stopped their use entirely. While a medical student, at the age of twenty, he had discovered that his urine contained a small percentage of albumin. He did not know the cause of this condition, when it first made its appearance, or whether it had been constantly present since that time, for he never had had his urine examined, and owing to the fact that he knew it had contained albumin he never applied for life insurance, fearing rejection. When twenty-five years of age he contracted syphilis, for which he was treated for about three months, until all the secondary manifestations had disappeared, when specific treatment was discontinued. As far as he knew he never had any of the ordinary tertiary lesions of the disease. He married shortly after this, and although his wife was never pregnant she never developed any specific lesion. I removed her appendix and right ovary and tube in 1903 for acute inflammatory conditions. His family history was

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excellent. His parents and grandparents were very long-lived. One grandmother died at the age of 104 and his mother is still living at 87 or 88, and is in good health.

When I first examined him in 1903 I found his heart greatly hypertrophied with obstructive murmurs at both the mitral and aortic valves. He had no edema and only suffered inconvenience from dyspnea and cardiac irregularity on severe or prolonged exertion. There was no fluid in his chest or abdomen at that time. His urine contained about .5 per cent. of albumin and a few hyaline casts with a normal urea percentage. During the summers of 1903 and 1904 the patient sailed a small yacht, and on several occasions, especially in 1904, he was in considerable danger and was compelled to overexert himself. Shortly after a particularly severe exertion, when his boat went ashore in a storm, dyspnea on the slightest exertion began to develop, his feet and legs became edematous, and I found a small amount of fluid in both pleural cavities. Regurgitant murmurs at the aortic and mitral orifices were noticed and he was unable to sleep lying down. His condition became worse very rapidly, the fluid in his chest increased, ascites appeared, and the edema reached his buttocks. A diagnosis of specific aortitis had been made and the iodides had been pushed to the point of tolerance without the slightest benefit. His condition became so distressing from dyspnea and edema that on October 15, 1904, I aspirated and withdrew 80 ounces of ordinary serum from his left pleural cavity, and the following day fifty ounces were removed from his right side.

With the first aspiration his dyspnea, edema, and cardiac irregularity decreased. It was soon noticed that there was a marked decrease in the amount of urine he was secreting, and during the rest of his life he averaged but 12 to 18 ounces daily. Frequent analyses of his urine showed little or no variation. Specific gravity 1.025, strongly acid, color very dark, urea 2.5 to 3 per cent., chlorides increased, albumin .7 per cent. Hyaline, granulohyaline and pure granular casts were present, together with epithelium from the pelvis of the kidneys and from the bladder. The uranalysis indicated that he had a chronic parenchymatous nephritis.

The results of frequent blood examinations were about as follows: Red cells 8,670,000, leucocytes 13,500, polynuclear neutrophiles 85. per cent., small lymphocytes 8 per cent., large lymphocytes 3 per cent., eosinophiles 2.5 per cent., hemoglobin 60 per cent.

I aspirated his chest for the first time October 15, 1904, and from that date until he died of the grip on May 19, 1906, 580 days, I aspirated his chest 311 times, averaging one aspiration every 1.9 days for the entire 19 months. The total amount of fluid withdrawn was 10,690 ounces or about 80 gallons, weighing nearly 700 lbs. The amount of fluid withdrawn at each aspiration varied from 12 to 110 ounces, averaging 34 ounces. There was an average daily loss through this channel of about 19½ ounces. As he averaged less than 16 ounces of urine each day, he passed more fluid through the aspirating needle than through the kidneys. The patient's average weight throughout his illness was about 140 lbs., and as I withdrew about 700 lbs. of fluid from his chest in 19 months, there was a loss through this channel of an amount equal to his bodily weight every 118 days.

The fluid withdrawn from his chest was usually a straw-colored serum, with a specific gravity of 1.030, containing 1.2 per cent. of albumin, epithelial cells, and a great deal of fibrin. Its coagulability was similar to that of normal blood. Occasionally the aspirating needle passed through a small vessel, and for some time afterward the serum would be more or less tinged with blood, and microscopically would show the presence of blood cells. This condition would gradually disappear and the serum return to its normal straw color.

During the first eight months the patient was aspirated on an average of once every five days; during the next two months, every other day. During the last six months of his illness he was aspirated 193 times, and there was withdrawn from his chest more than 5,600 ounces of serum—a daily average of over 31 ounces. Each side of his chest was aspirated on alternate days for most of this time, but during the last three weeks, on many days I aspirated his chest twice daily—that is, one side in the morning and the other side at night. During the last five days I aspirated each pleura twice daily. The day he died I was compelled to aspirate each side of his chest twice, and I also tapped his peritoneal cavity in an effort to relieve his terrible dyspnea.

The left side of his chest filled up more rapidly than the right and was tapped somewhat more frequently, and considerably more fluid was withdrawn from the left than from the right side. Of the last 200 tappings, 103 were on the left and 97 on the right side. The 103 left side tappings yielded about 3,100 ounces, an average of 30 ounces, and the 97 right side tappings yielded about 2,700 ounces, an average of almost 28 ounces for each tapping. Emptying the left side of his chest relieved his dyspnea more readily than when the right side was aspirated.

Early in his illness he was very tolerant of the effusion, and he would frequently go until a hundred ounces or more would be drawn from his chest, but later on in the disease his dyspnea would be extreme, and only thirty or forty ounces would be withdrawn, and toward the end he would suffer more dyspnea from a small quantity of fluid than he had formerly suffered when the large quantity was present.

These frequent operations were of necessity a great tax upon my time, but I found that by simplifying and systematizing the procedure I could sterilize the instruments, my hands, and the site of the puncture and complete the tapping in about twenty-five minutes, at the same time doing the operation aseptically. That it was done aseptically is proven by the fact that although the chest walls were punctured more than 400 times there never was the slightest evidence of infection in spite of the fact that I was operating frequently on all kinds of cases, clean and otherwise. I always made it a point, however, whenever I anticipated operating on a pus case, to tap this patient before the other operation. I endeavored to prepare my own hands, the site of the puncture and the instruments used in the operation with the same care necessary as for a laparotomy.

At first I used an ordinary aspirating needle with a beveled point, introducing it through the ninth, tenth, or eleventh costal interspace, at about the posterior axillary line. Owing to the pain and discomfort produced when the puncture was made too far anteriorly and the thickness of the chest walls when it was made too far posteriorly, I was limited to

about two inches of the eleventh, four inches of the tenth, and about three inches of the ninth interspace, and as the punctures were made so frequently it can be readily understood that a great deal of trouble was often encountered to find a place through which the needle had not recently penetrated. There was never the slightest evidence of infection at the side of the puncture, but the tissues became thick, brawny, and inelastic from frequent punctures, so that the needle in passing through would often carry with it a plug of tissue which would stop the flow of serum. When this occurred it was necessary to withdraw the needle and reintroduce it, and for this reason, although I aspirated his chest 311 times, it was sometimes necessary to make several punctures before the fluid would run freely. On one occasion I remember I was compelled to introduce the needle six times before I obtained a good stream. The frequent clogging of the needle and the constant danger of injuring the lung with the unprotected needle point led me to devise, with the aid of the patient, an aspirating needle better suited to the purpose and which we considered new. After having the needle made and using it for a couple of months we found that an almost identical needle had already been devised and manufactured in Germany. Our needle was an improvement on the German needle inasmuch as the shank of the trochar was much smaller than the caliber of the cannula, enabling us to see the flow of serum before the trochar was withdrawn. The employment of this needle minimized the danger of injuring the lung and the introduction of unsterilized air into the pleural cavities.

As an instance of how accustomed the human system may become to any condition, however abnormal, it may be stated that when this patient's chest was first aspirated at intervals of 10 or 12 days he suffered severely from shock and was 8 to 10 hours recovering from the operation, but later on when I was tapping him every day, removing at times as much fluid as I had formerly obtained, he had practically no shock and was able to go about as usual within a few minutes after the operation.

During his entire illness, and up to within a day or two of his death, the patient was able to go out, attend theaters, etc., and to a certain extent enjoy his existence. He did not lose as much weight as one might expect from the enormous loss of albumin through his kidneys and pleural effusion. This may be accounted for by the fact that from the first of his illness he had an abnormally large appetite, and appeared to suffer more acutely, both from dyspnea and abdominal pain whenever his stomach became empty and was only made comparatively comfortable when his stomach was full. Early in his illness it was his custom to eat heartily at least five times in 24 hours. He ate largely of eggs and other albuminoid foods. Later on he was compelled to eat oftener, especially at night. He partook of a fairly hearty meal every two or three hours. His stomach appeared to be able to assimilate this enormous quantity of food, for he seldom suffered from indigestion, although his condition prevented him from getting exercise.

As can be well imagined, the plans and methods of treatment employed in this very interesting case were very numerous and varied. In addition to what I did for him, the suggestions of a number of consultants, who very kindly saw him, were fully carried out. The patient, being a physician, spent about all his spare time reading up on his case, and many of his suggestions were tried. I doubt if he escaped a trial of any plan of treatment which did not carry with its employment too great a risk. In addition to the efforts of regular medicine, like a drowning man catching at a straw, he surreptitiously tried Christian Science, osteopathy, etc. After employing all the usual and unusual heart stimulants, diuretics, etc., we tried absolute bodily rest; the withdrawal of fluids; a non-saline diet; the intrapleural injection of adrenalin solution, etc., but I regret to say that everything had about the same result.

It seemed at first that the intrapleural injection of adrenalin diminished the secretion of serum, but the apparent improvement was only temporary and the serum returned in greater quantities than before. It also appeared that while the adrenalin caused a diminished secretion of serum in his pleuræ, the edema in his extremities was increased and there was no increase in the secretion of the urine.

Many plans for intrapleural injections of styptic and irritating substances to obliterate the pleural sacs were suggested, but the patient was afraid to allow them to be tried owing to the fact that both pleuræ were involved, and when adrenalin was injected the flow of serum lessened temporarily, but the amount of urine was not increased, and his extremities became more edematous. Permanent drainage was suggested, but the danger of infection seemed greater than the method we were employing, and the danger of collapsing his lungs was too great.

The patient was going along about as comfortably as he had been for many months, except that he was growing slightly weaker, and a smaller effusion in his chest produced such an amount of dyspnea as to make him uncomfortable, when early in May, 1905, he developed a well-marked attack of influenza, with a temperature rise to 103°. He at once began to suffer more acutely from dyspnea and abdominal distress, which were relieved only by removing the fluid from his chest more frequently than before. I was compelled at first to aspirate each side every day—one side in the morning and the other in the evening—removing from 18 to 20 ounces at each aspiration. The relief obtained was of very short duration and I was soon compelled to aspirate each side twice daily, withdrawing 12 to 15 ounces each time. He grew worse very rapidly, and during the last day of his life I was compelled to aspirate his chest four times and his abdomen once in the effort to relieve his distress. No autopsy was made.

The literature upon the subject of frequent aspirations for hydrothorax is particularly meager.

Pepper in his "System of Medicine" reports 22 aspirations at weekly intervals, where the total quantity of serum obtained was 1,563 ounces. At each tapping there was withdrawn from 49 to 112 ounces.

Ziemsen (*Deutsches Archiv. für klinische Medizin*, 1869. Vol. V) reports a case of double hydrothorax which he tapped 16 times, removing in all 420 ounces.

A. S. Joske of Australia (*Australasian Medical Journal*, 1887) reports a case which he aspirated 17 times at intervals of ten days, and when the case was discharged from the hospital there was fluid still remaining in the pleuræ. The subsequent history of the case is unknown.

In a quaint old volume on "Hydrothorax" written by MacLean in 1814 there is reported an old case of ovarian dropsy in a woman, whose tombstone in

a Scotch churchyard bears this interesting and unique epitaph:

Here lies Dame Mary Page,
Relict of Sir Gregory Page, Baronet.
She departed this life March 4, 1728,
In the 56 year of her age.
In 67 months she was tapped 66 times,
Had taken away 240 gallons of water
Without ever repining at her case
Or ever fearing the operation.

While the gross amount of fluid removed from Dame Mary Page's ovarian tumor exceeds the amount of fluid withdrawn from my patient's chest, she lost an average of 29 pints of fluid per month, while my patient's loss averaged 35 pints per month. During the last six months it averaged over 58 pints per month.

As far as I can ascertain from the medical literature at my disposal, this record of 311 aspirations of the pleural cavities, with the withdrawal of 10,690 ounces of serum in 19 months, stands as a record which has never been surpassed.

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ACUTE BULBAR PARALYSIS, WITH AN UNUSUAL SYMPTOM.*

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The case I am about to report presents an especially unusual feature, so that its classification is a matter of great difficulty.

Mrs. M. W., 40 years of age, housekeeper, in July, 1906, suddenly and without premonitory symptoms, became unconscious. She remained in a comatose state for three days. When she regained consciousness she was totally aphasic and her face was drawn to the right. Subsequently her speech improved, but never became normal. In December of the same year she had another attack, which was not accompanied by unconsciousness. It consisted of a sudden protrusion of the tongue and of a spasm of the jaws so that the tongue was caught between the teeth. The face became drawn to the left. For twenty-four hours the jaws could not be separated and the protruded portion of the tongue was swollen and injured from the insertion of the teeth. During this time the patient could not be fed. Gradually relaxation took place. The following symptoms were noticed: There was an inability to swallow, to move the tongue in any direction, to masticate; also difficulty of breathing, absolute loss of speech, and aphonia. The condition began to improve only at the end of a couple of months.

At present the patient presents the following symptoms: She can make sounds, but they are all monotonous and identical. She cannot utter a single word, syllable, or letter. Her face is deviated to the left. When she is told to show her teeth, the left nasolabial fold alone is deepened. When she is told to hold the lips tight together the face is drawn to the left. The tongue is thin, flabby, and affected with a fibrillary tremor; its movements are decidedly limited, and it presents the reaction of degeneration. The uvula is not elevated in attempts to swallow or to talk. The pharynx is anesthetic. There is still some difficulty in swallowing and in masticating. There is continuous salivation. She cannot bring the jaws tightly together. Blowing and whistling are almost impossible. The lower part of the face is wrinkled, and this, according to her sister, has been particularly marked lately. The lips are thin. The muscles of the right side of the face present partial reaction of degeneration. (CaClC=AnClC).

The grip of both hands is equal and normal. The gait is normal and there is no evidence of paralysis. The knee jerks are exaggerated and there is a paradoxical reflex on the right side, but no Babinski or Oppenheim. There are no sensory disturbances. Sphincters are normal. The eyes present no abnormality except a slight astigmatism. The epiglottis is in a state of a partial paralysis, allowing it to fall forward in inspiration. Aside from a slight engorgement of the arytenoids and of the cords, which approximate well, there is no other abnormality.

The intelligence is well preserved. She understands spoken or written words. There is no agraphia.

The heart is diseased. There is a systolic murmur at the apex. Her previous personal and family histories are negative. No evidence of specific infection could be detected.

Comment.—The difficulty of swallowing, of masticating, the limited movements of the tongue, and the atrophy of the latter are sufficient evidences in favor of a bulbar affection.

The diagnosis should be made chiefly between acute and chronic bulbar paralysis, also pseudobulbar palsy. In acute bulbar palsy the onset is sudden and accompanied by general symptoms, as headache, fever, and pain in the neck; the picture of glosso-labio-laryngeal palsy sets in rapidly. A comatose state appears and death is the usual termination. In my case, during the first attack, there was a sudden loss of consciousness, and the face became drawn to the right; the speech was totally lost. There was no involvement of the other cranial nerves. In the second attack, the twelfth, tenth, ninth, seventh, and motor part of the fifth became involved, but there was no loss of consciousness. Besides, a total loss of speech is not a symptom of acute bulbar palsy. In chronic bulbar paralysis the onset is insidious. There is at first a dysarthria and later anarthria, but total mutism is not characteristic of this affection. Besides, the lips being immobile the mouth remains open. The facies appears stupid. In my case the onset, the mutism, and the expression of the face militate against the chronic form of bulbar palsy.

With psuedobulbar palsy my case presents this similarity, that there were two apoplectiform seizures, but on the other hand, there was no hemiplegia. In pseudobulbar palsy there is a difficulty of swallowing, of masticating, and of speaking (dysarthria) but what especially characterizes this affection is absence of atrophy and fibrillary tremors in the paralyzed muscles, preservation of normal electrical reactions, and, finally, mental disturbances, such as loss of memory, apathy, confusion, and dementia. Attacks of laughing or crying are almost typical of the pseudobulbar palsy. My case is, therefore, not an example of the latter disease.

Summing up the history and the symptoms of the case, one can see that while it presents some of the manifestations of each of these three affections, it is nevertheless wanting in some of the typical symptoms. Is it a case of amyotrophic lateral sclerosis with an irregular bulbar onset? The

*Read and patient exhibited before the Philadelphia Neurological Society, November 26, 1907.

state of the knee-jerks with the presence of the paradoxical reflex seem to favor this view.

Irrespective of the view we may adopt, there is one symptom which it is difficult to explain, viz., the loss of speech. All the affections of the medulla usually give place to a dysarthria or anarthria. A complete inability to speak can be present only when the atrophy and the degenerative reactions are very much pronounced in the muscles participating in enunciation of words. In my case the condition of the lips, tongue, palate, and larynx is not such as to abolish entirely their function.

In aphemia of cerebral origin there is loss of ability to articulate words, but the patient is always able to emit sounds or syllables which resemble more or less words. My patient is completely deprived of the power of pronouncing even letters.

Is it finally a case of hysteria? The persistent difficulty of swallowing, of masticating, the atrophy, fibrillary contraction and reaction of degeneration of the tongue, atrophy and reaction of degeneration of the muscles of the face, are certainly against the conception of hysteria. Moreover, the patient presents no stigmata of this neurosis.

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SIGNIFICANT FEATURES OF MIDDLE-EAR SUPPURATIONS IN INFANCY AND CHILDHOOD.*

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The study of the distinctive features of ear disease, as it affects the infant and young child, is of especial importance no less for the otologist than for the pediatrist. The fact that a considerable number of all cases of ear disease occurs in children is both significant and suggestive. Accounted for to a certain extent by the susceptibility of the young to the common infectious diseases, such as scarlet fever, diphtheria, and measles, the prevalence of ear affections in children is largely referable to the local anatomical characteristics of the immature auditory apparatus. These are reinforced by the greater vulnerability of the youthful nervous system, the tendency to convulsions, and the relatively slight resistance of the growing organism against the effect of general intoxication through the entrance of toxalbumins into the circulation. Hence, the pathological conditions of the organs of special sense, more particularly the ear, in the child are characterized by certain distinctive features, indicative of the reaction of the juvenile organism to the invasion of the injurious agent.

The very evident predisposition of the growing ear to infections both primary and secondary, rests upon the anatomical basis of structural peculiarities, for the auditory apparatus of the newborn child is far from having reached full maturity. It is a common observation that an organ at rest is less liable to disease than one which is undergoing either progressive or retrogressive changes. The slight resistance of the immature petrous bone is still further diminished by the delicate structure of the juvenile skeleton as a whole, and by the histological behavior of the tympanic mucosa, with its greater vascularity and more abundant secretion in the young. The tympanic cavity at this early age contains many remains of embryonic tissue, which upon the entrance of bacterial invasion of only slight virulence is easily broken down, with the result that suppuration becomes established. In certain cases, this suppuration persists during a more or less prolonged period, without any external signs to indicate the gravity of the underlying lesion.

The Eustachian tube in the infant and young child is short, almost straight, and its wide open lumen affords an outlet for the accumulating pus. This spares the drum, and explains the peculiarly significant feature of the ear suppuration among these patients, namely the preservation of an imperforate drum, with or without bulging, until late in the course of the disease. The discharge of the Eustachian tube brings in its train a series of symptoms which are significant. These are gastrointestinal disturbances, the functional derangement being associated with a considerable loss of body weight. I recently had under observation a child who, because of diarrhea and loss of weight, accompanied by vomiting, was put for some time upon a diet of various modified milks. No suspicion was attached to the ears, until there suddenly appeared facial paralysis, closely followed by otorrhea. It must be borne in mind that the bowels may be involved coincidentally with the ear disease, prior to it, or in consequence of it. In such cases, the attempt to analyze the clinical picture, to differentiate the general from the local disease, is beset with additional difficulties.

In certain cases in my experience the nutrition of the child was impaired, and there was an unmistakable departure from the normal standard. Meanwhile, the attending physician had been unable to locate the disturbing factor, and our own otoscopic examination demonstrated only a thickened drum. These cases remained obscure until an examination of the pharynx showed a purulent exudate coming from the Eustachian tube. The patients were a girl of three, and two boys of three and two years of age, respectively; in the case of the youngest patient, the purulent exudate also came away from the nostril of the affected side.

With special reference to intestinal disturbances, these have actually been reported by many observers as coincident with ear disease, and to these cases may be added a personal observation. Whereas some have held the bowel derangement and vomiting responsible for the ear trouble (Goppert[1]), others interpret the bowel derangement as the result of the ear trouble (Preysing, Ponfik, Hartman); and Jacobi believes both contentions to be founded on fact. Preysing, whose conclusions seem the most trustworthy,[2] regards the diarrhea as a kind of septic diarrhea, and recalls to mind the fact that the pneumococcus—the most frequently offending microorganism—belongs to that class of streptococci which are causal agents of sepsis; it having been demonstrated that streptococcus toxins cause diarrhea (Homer and Laetinen[3]).

Whatever may be the cause of the gastrointestinal disturbance, it remains a fact that one often sees the onset and the termination of the disease in the ear, synchronous with the onset and termination of the bowel derangement, and I hold with Gomperz that any one who has observed this must be impressed with the direct effect produced upon the entire body by ear suppuration in infancy, the bowel derangement being a manifestation of this systemic effect.

*Read at the Eastern Medical Society, New York City, January 10, 1907.

The presence of the colon bacillus was pointed out in the middle ear by Stern,[4] and in octogenetic brain abscess by Lentert. According to Baginsky, this bacterium plays a rather important part in the middle-ear affections of children.

Kossel[5] demonstrated the Löffler diphtheria bacillus in acute otitis media of children having diphtheria. Primary otitis media diphtheria was observed by Krepuska, Kobrak, and Hans Daae.[6]

Experience teaches that a number of other pathogenic microorganisms play a part in the production of inflammatory middle-ear disease. According to the investigations of Zaufal and others, the diplococcus pneumoniæ enters into consideration in the etiology of primary acute otitis media. The streptococcus, the *Staphylococcus pyogenes albus* and *aureus,* and Friedlander's pneumonia bacillus, may be involved in the remaining secondary infections. The clinical variations observed in a number of cases have been demonstrated as due to the invasion of different bacteria. It is claimed, for instance, that acute otitis media due to pneumococcus infection takes a more rapid course, and is more liable to be complicated by epidural abscess, the result of propagation of the inflammation to adjacent organs (Leutert).

The etiology of otitis media in infants is identical with the etiology of the disease in adult patients. In either group of cases, a number of pathogenic microorganisms have been demonstrated, which had reached the tympanic cavity either through the Eustachian tube, or by the hematogenous route (Kossel, Preysing, loc. cit.).

A brief glance may be given to the otitis media of the newborn, an independent disorder which has of recent years been referred to the presence of a foreign body, by the investigations of Aschoff.[7] He showed that the mucopurulent secretion frequently met with in the tympanic cavities of newborn children, contains a considerable admixture of amniotic fluid, vernix caseosa, and meconium. While these substances do give rise to cellular infiltration of the mucosa, the changes are never as severe as those usually observed in the infectious forms of otitis. These cases constitute mild attacks of otitis, with an inflammatory transudate, rather than a physiological process due to the absorption of fetal tissues.

Whereas, in adults, middle-ear suppurations only occasionally produce a rise of temperature, in infants and young children the febrile movement is more or less the rule. This is present even when the disease is limited to the tympanic cavity. When the mastoid antrum becomes the seat of an empyema, then the temperature usually rises sharply, and convulsions among the younger patients are by no means rare. After the disease has spread to the mastoid antrum (there is no mastoid process in the infant) the destruction of osseous tissue is rapid indeed. We are often surprised in the operative findings of these cases, at the amount of destruction, which seems out of all proportion to the evident symptoms. Bearing in mind this frequent finding, in connection with the ever-recurrent presence of defects in the osseous encasement of the facial nerve, we can in a measure account for the early paralysis of the facial nerve, another significant feature of middle-ear suppuration at this age. Reflexes from the ear are much more commonly observed in children than in adults.

While not intending to dicuss the anatomy of the infant's and child's temporal bone, I cannot refrain from calling attention to the frequency with which the dome of the jugular bulb is in direct contact with the lining mucosa of the middle ear. These defects in the floor of the tympanum are quite frequent, and they probably account for the great susceptibility of these small children to otitic pyemia. I have seen cases in which the opening of the mastoid antrum was followed by symptoms which were interpreted as evidence of sinus-thrombosis, and the sinus was explored, only to be found normal. In such cases had the possibility of septic pyemia due to absorption of toxins from the wall of the sinus at the bulb through the defect in the floor of the middle ear been borne in mind, the character of the case under consideration would have been self-evident.

Children are peculiarly susceptible to the so-called meningitic or pseudomeningitic type of middle-ear disease, and the explanation has been sought in the direct transmission to the brain of inflammatory stimuli through the open petrosquamous fissure of the immature petrous bone, resulting in cerebral hyperemia, with meningitic symptoms. Again, increased air-pressure through compression of the stapes has been held responsible (otopiesis). The most probable explanation seems to be the absorption of pus and toxalbumins in the circulation, the severity of individual cases being dependent upon the character of the pus in the tympanic cavity, the amount of pathogenic bacteria contained in it, the vicinity of the brain and the conditions governing the degree of absorption. (Baginsky.[8])

Brief mention should be made in this connection of a rare but extremely dangerous type of meningitic ear disease—true primary inflammation of the labyrinth, or otitis intima. These cases are practically limited to children, and often leave behind them a total bilateral deafness, the exact etiology of which has been the subject of animated controversy.

The differentiation between otitic pyemia and the involvement of the bulb or the sinus calls for the highest exercise of diagnostic skill. Red marrow bone (the type of bone in the developing mastoid of the young) is liable to rapid destruction, often laying the lateral and the sigmoid sinus open to attack. Anatomically, the open sutures, the petrosquamous, the squamomastoid, etc., furnish routes of infection to the cranium more readily than they do under similar conditions in the adult. It is, therefore, of importance that the middle-ear condition and the empyema of the mastoid antrum be promptly recognized and surgically relieved, so as to anticipate intracranial complications. Through the open sutures pus may easily work its way to the outside, and the appearance of a subperiosteal abscess is significant of this condition in childhood. The abscess in these cases is as a rule located above and not behind the ear. Furthermore, periosteal abscesses develop rather easily in childhood, because of the exceeding thinness of the external wall of the antrum, and these patients usually present well-marked symptoms of increased brain-pressure (diffuse or unilateral headache, somnolence, vomiting, retardation of pulse, optic neuritis). However, as in the case of an eight-year-old girl operated upon by Lane,[9] there may be a large accumulation of pus between the dura and the bone, without giving rise to symptoms.

Whereas empyemas of the mastoid process in early life very often give few if any distinctive symptoms, and are easily overlooked, the acute empyemas of the mastoid antrum characteristically, though not invariably, present a rather profuse

otorrhea, with a light sanguineous tinge. The discharge is demonstrably coming away under pressure. Occasionally the soft canal wall is separated from its bony parts by the extravasation of pus, and in one case seen by the writer, the drum remaining intact, the drum and soft canal became everted like the turned-in end of a glove finger, this presenting at the external auditory meatus, like a new growth. Free incision, removal of pus and replacement of the everted part of the canal were followed by recovery.

Swelling of the gland at the angle of the jaw, with a particularly fetid otorrhea, is sometimes the only symptom pointing to mastoid involvement in children having constitutional stigmata, or suffering from malnutrition and marasmus.

The external auditory canal usually narrows because of inflammatory swelling of its walls, presenting superficial ulceration from excoriation by the pus. I place more weight on this narrowing of the canal than on the sinking of the posterior superior quadrant, as the former in my experience is the more reliable guide in childhood.

Facial paralysis, coming on early in the disease, while it may presage grave involvement of the mastoid, is not a reliable sign, for the exposed nerve is somewhat open to attack by way of the not uncommon defects in its bony casing. Again, children are especially susceptible to reflexes from the ear.

Brain abscess presents nothing characteristic in childhood, except that apparently uncomplicated cases often show distinct meningitic symptoms. Basillar meningitis may develop through invasion of the cranial cavity by way of perforation of the tegmen tympani through the labyrinth and porus acusticus internus, or in very young children through the various open sutures, the subarcuate hiatus, or a dehiscent facial nerve canal. Koerner pointed out the noteworthy fact that all those intracranial complications of ear suppuration which may be interpreted as a toxic meningoencephalitis, preferably concern youthful individuals. Among twenty patients, eleven were under fifteen years of age.

In conclusion we find the significant features of middle-ear suppuration in infancy and childhood to lie (1) in the existence of the purulency without perforation; (2) in the presence of a discharge from the Eustachian tube to the pharnyx; (3) in the exhibition of temperature, early facial paralysis and marked disturbance of stomach and bowel; (4) in the advent of periosteal abscess; (5) in the rapid progress of destructive processes in the petrous bone; (6) in the tendency to intracranial complications; (7) in the possibility of early primary bulbar thrombosis; (8) in the existence without thrombosis of otitic pyemia, and (9) in the relatively serious sequelæ of certain forms of ear disease in the child, who is exposed to the danger of deaf-mutism by the loss of a special sense so intimately related to the function of speech.

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DANGERS ATTENDING OPERATIVE INTERVENTION IN GONORRHEAL SALPINGITIS.*

REPORT OF A CASE.

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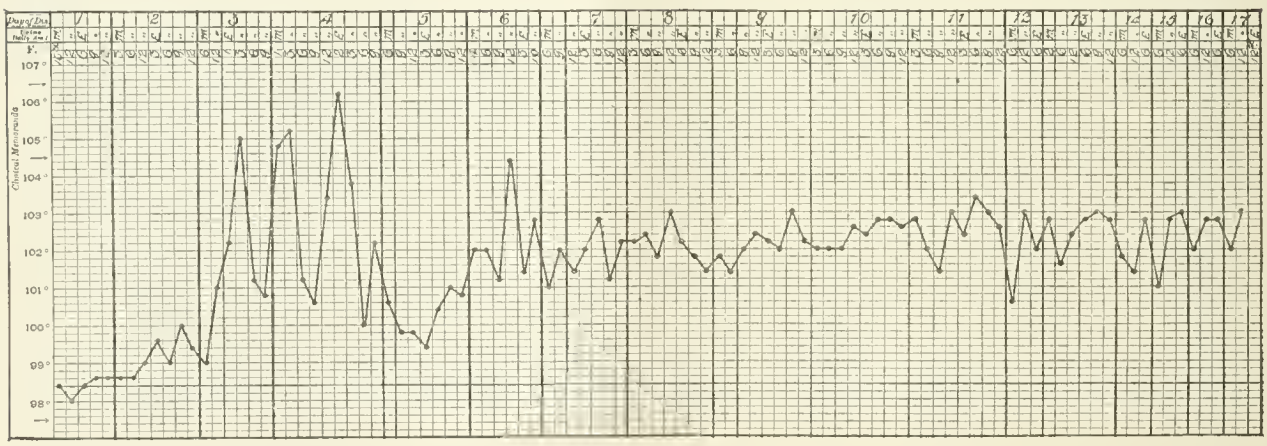
Mrs. A. of Port Arthur was referred to me for operation, after about two months of suffering, following a gonnorrheal infection from her husband, to which he confessed.

Upon examination, the uterus was found fixed,



the tubes and ovaries could be easily palpated, and gave evidence of having been badly damaged by the inflammatory process, which the normal temperature led me to believe was in abeyance. She continued to suffer, however, from pelvic distress, for the relief of which she constantly clamored for morphine.

Operation was performed on November 7, 1906, and both tubes, along with one ovary, were removed. Adhesions plastering the uterus to the surrounding intestines were liberated and the abdomen was closed. The patient was returned to bed in good shape, and, of course, we expected the usual, normal convalescence. But herein lies our story.

On the afternoon of the second day there was a slight elevation of temperature, followed in the after-

*Read before the Section on Obstetrics and Gynecology of the Southeast Texas Medical Association.

noon of the third day by a distinct chill, temperature reaching 105°, which readily yielded to cold sponge bath. On the fourth day, another chill, temperature 106.4°. Fever on the fifth day, 101° at its highest. The afternoon temperature of the sixth day was 104.4°, with distinct swelling of the joints, which, up to this time, had given no evidence of disturbance. This showed that we had an explanation, outside of the belly cavity, for the high temperature.

The stitches were removed on the eighth day, the wound having healed without the slightest trouble, and at no time were there any symptoms, beyond the fever, pointing to trouble in the operative field.

As will be noted on the clinical chart, the patient died on the fifteenth day of the disease without any warning. Only a few minutes prior to her death she called for the nurse to turn her in a more comfortable position. Death was, most likely, due to gonorrheal endocarditis.

The purpose of this report is to call attention to the likelihood of gonorrheal rheumatism being awakened by operation in specific infections where active symptoms are in abeyance, and to the fact that this systemic infection may eventuate fatally.

ETHER ANESTHESIA.

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FIRST ASSISTANT IN SURGERY, AND LECTURER IN GENITOURINARY SURGERY, UNIVERSITY OF MICHIGAN

In the past the mere selection of ether over chloroform has been deemed sufficient precaution without attempting a study of the possibilities of the latter. The profession seems to be awakening to the fact that proper etherization calls for experience and that, within certain limits, a maximum dosage must be established.

Much is being written concerning the different forms of apparatus and this or that method calls for much or little commendation, whereas the true test is the anesthetist himself and that mode of administration is superior which in his hands permits him to employ the smallest quantities of ether. Mechanical improvements make men idlers. Before giving the anesthetist the results of too much inventive genius he must first be taught that it is but a means to an end, else it enables him the more easily to slip into the old rut made deep and smooth by past years of disregard. Every agent for real good has an equal power for evil if not properly employed, and this is true of appliances for administration of ether. Carbon dioxide poisoning resulting from the use of certain closed inhalers as seen many times in some hospitals, is pernicious.

The drop method has done more for ether in general than any one thing since its discovery. I have never used it myself, but make the statement because of the small amounts necessary for surgical procedures reported in recent papers. Averages of five ounces of ether per hour may be obtained with the Allis inhaler slightly modified. I do not use one from choice, but prefer some form of closed inhaler as in my hands it conserves the drug. This statement may, perhaps, not be borne out by those who have become proficient with the drop method and open administration. Nitrous oxide gas preceding ether is unnecessary; the former is valuable in selected cases, not only for minor but, if properly given, may be prolonged for major operations. Primary anesthesia with ether is valuable in many short operations, viz., extraction of teeth, incision of abscesses, urethral dilatations, etc. It is possible to make fourteen extractions with primary anesthesia lasting ten minutes, counting from the time the inhaler is adjusted until the patient is talking intelligently or is able to clear the mouth of blood.

The average amount of ether required per hour is four ounces. I am not now speaking of those operations confined in part to insensitive tissues, but when complete unconsciousness must be continuous. The longer the operation is prolonged the less ether is necessary for any given period of time. The longest period of ether anesthesia that has come under my observation was five and one-half hours, in the case of a radical mastoid operation with exploration of the brain and ligation of the left common carotid; the amount of ether used was fourteen ounces.

Some surgeons, following the example of the Mayos, are looking for their ideals in this branch outside the profession, as compared with the surgical technique which necessitates its use it seems to have little attracion for some medical men, while others disregard its importance and deem it too narrow a field for special work.

Proficiency in the future will require the minimum amount of ether instead of the promiscuous "soaking" of the past. When this is made obligatory, vomiting is the exception, not the rule; the excitement stage is wanting; the intense irritation of bronchial mucous membrane is never experienced, and the capillary circulation is as good, sometimes better, than before administration.

In the following list of anesthesias the cases have been taken in their order, with the exception of the operations within the peritoneal cavity, when the drug may be discontinued for many minutes during certain periods.

Case I.—Radical breast amputation. Ether. Time, forty-three minutes. Amount of ether, two and one-half ounces.

Case II.—Amputation of cervix. Ether. Time, forty-five minutes. Amount, three ounces.

Case III.—Resection of upper jaw preceded by tracheotomy. After the tracheal tube was inserted ether was given by a common rubber funnel covered with gauze and inserted into the tube. Time, two hours. Amount, eleven ounces and six drams.

Case IV.—Mastoid. Ether. Time, two hours and fifty-five minutes. Amount, ten ounces.

Case V.—Thigh amputation. Nitrous oxide gas. Time, nineteen minutes.

Case VI.—Cystotomy. Nitrous oxide gas. Time, fifteen minutes.

Case VII.—Cancer of rectum. Ether. Time, forty-eight minutes. Amount, three and one-half ounces.

Case VIII.—Circumcision and varicocele. Ether. Time, twenty-six minutes. Amount, two ounces.

Case IX.—Secondary carcinoma in cervical glands of the neck and deep cervical fascia. Ether. Time, three hours and twenty-five minutes. Amount, ten ounces.

Case X.—Inguinal hernia. Time, one hour. Amount of ether, three and one-half ounces.

Case XI.—Thyroidectomy. Time, one hour and five minutes. Amount of ether, three ounces and six drams.

Tests for acetone have been positive in some cases, but as it appeared principally in those patients who have had the shortest periods of narcosis and necessarily the smallest amounts of ether, little importance is attached as yet to its appearance. Complications, either immediate or remote, will rarely be encountered under this low dosage. He who is skillful in the giving of ether will have little time to wander outside his own field of usefulness.

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THE OPERATIVE TREATMENT OF PUERPERAL THROMBOPHLEBITIS.

THE idea of curing thrombophlebitis by proximal ligation or resection of the inflamed vein came of a practical investigation not so very long ago. In 1865 Lee tied off the cephalic vein, and in 1877 Kraussold the femoral vein, and soon afterward the ear specialists, first among them Zaufal, in 1884, ligated or resected the internal jugular vein for thrombosis. The ear specialists met with such marked success, partly because the anatomical relations of the parts were such that the seat of the thrombosis could be easily gotten at and partly because they had no trouble in deciding whether the trouble was on the right or left side. Encouraged by their good results, Sippel, Freund, Bumm, and Trendelenburg tried the same treatment in thrombophlebitis of the pelvic veins. They, however, did not obtain equally favorable results, because they had greater difficulty in deciding which side was involved and in telling before operation how far the thrombus extended, for if the renal, inferior vena cava, or common iliac vein is involved success is impossible.

The number of reported cases of operation for puerperal phlebitis is still very small. L. Seitz (*Volkmann's klinische Vorträge*, No. 464, series XVI) has recently collected thirty-seven, giving a detailed description of each case. He draws attention to the frequency of puerperal thrombophlebitis, it being found in one-half of the cases of puerperal sepsis which come to autopsy. It is important to note that the placental site is the usual portal of infection, and that the process is rarely combined with an inflammation propagated along the lymphatics. If the portal of infection were situated lower down in the genital tract the large collateral circulation would make the operation useless, and if any inflammation along the lymphatics were also present the latter would be uninfluenced by the operation. As regards the most frequent location of the disease, opinions differ. Bumm and Trendelenburg believe it to be in the internal iliac, the latter having found it there in fourteen out of twenty cases; he also found the condition to be bilateral in two-thirds of the cases. Lenhartz, on the other hand, in thirty-two autopsies found the internal iliac involved only five times, the ovarian having been involved in the other cases; in only one-fifth of his cases was the phlebitis present on both sides. Seegert found the ovarian involved in all out of twenty-five autopsies; in nineteen the condition was unilateral. It is, therefore, safe to state that the ovarian vein is more frequently affected than the internal iliac.

The prognosis in unoperated cases has been variously reported; as a rule, large figures show a better prognosis than small ones. Thus Bumm's mortality among twenty-three cases was 83 per cent.; Lenhartz among eighty-seven cases, all severe forms of the disease, noted a mortality of 69 per cent., while Opits collected 339 cases, with a mortality of but 60.5 per cent. On an average 66 2-3 per cent. of the severe cases treated conservatively terminate fatally. Of the thirty-seven operated cases collected by Seitz, all of which were severe forms of thrombophlebitis, fourteen terminated in recovery, *i.e.* the mortality was 62 per cent. Of the twenty-three patients who died an autopsy was performed on nineteen. Ten showed a vena cava thrombosis, which in itself is usually fatal; one died of cardiac disease which was present before operation; three had a septic pneumonia with an abscess of the lung before operation; one died of peritonitis present at operation, and in three the vein was not ligated proximally to the thrombus, *i.e.* only part of the thrombus was excluded from the circulation. One died of a retroperitoneal abscess which developed after operation, so that this was the only case in which death could be attributed to the operation; the others would have ended fatally even if they had not been operated upon. When the diagnosis is made it is hard to decide in which cases operation is indicated and when to operate.

The indications for operation are not always definite. As a general rule, all severe forms are operable cases. Seitz thinks it unwise to be guided by the number of chills, as suggested by Trendelenburg, who believed operation indicated after two chills. Seitz admits that a sharp distinction cannot be made between acute and chronic cases, but for practical purposes classifies those which last longer than two weeks as chronic, advising operation in the chronic stage. The mortality among twelve patients operated upon in the acute stage was 75 per cent.; among twenty-four operated on in the chronic stage, 54 per cent. He, however, warns against waiting too long, for then the vena cava may have become implicated and the operation thus rendered useless; autopsies show that the cava rarely becomes involved before the end of the third week. Septic pneumonia, abscess of the lung, septic endocarditis, metastases in the kidney, and pelvic cellulitis he considers contraindications. He advises median laparotomy as the operation of choice, for the vaginal route gives poor exposure, while the extraperitoneal operation exposes only one side; the first mentioned has given the best results. He advises resection only in those cases in which the inflamed vein looks as if it might rupture; in the remainder he operates according to Bumm, *i.e.* ligates the internal iliac and ovarian veins on both sides, unless he is positive that the disease is confined to one side. Even then he ligates both the internal iliac and the ovarian veins, although only one of them may seem to be involved.

The usual objection advanced against tthe operative treatment of puerperal thrombophlebitis is not that the operation is dangerous, but that we have no proof that the operation was the cause of cure when

the patient recovered. Would not the patient also have gotten well if no operation had been performed? is the usual question asked by the opponents of this method of treatment. Of course, it is hard to prove positively that the patient would not have gotten well, but as seven out of the fourteen patients who were operated upon and recovered had no further chills after operation, when they had them daily before operation, it seems only just to attribute their recovery to this mode of treatment. And when the patients had only one or two chills after operation and then recovered, we could certainly not speak of an unsuccessful treatment, but would probably be right in claiming that the operation brought about the final cure. These last-mentioned cases can be explained on the ground that all the infectious material has not been excluded from the circulation and that a collateral circulation sets in at once, thrombi in small veins not being necessarily excluded, even though both internal iliac and ovarian veins are ligated. The body then takes care of the remaining amounts of infectious material, the number of chills after operation depending on the quantitative reduction of the infectious material excluded from the circulation. Those fatal cases in which chills are absent for a few days after operation and then reappear are explained on the ground that the collateral circulation sets in only after a few days and that the body is not able to take care of the remaining infectious material. The operative treatment of this condition, therefore, not only seems justifiable in selected cases at the proper time, but promises to reduce the mortality in severe forms of puerperal pelvic thrombophlebitis.

TRICHINIASIS.

Trichiniasis is a disease with which the general practitioner of medicine is not very familiar. Often enough the phenomena of infection with this nematode are quite obscure and the cases are classed as "atypical" typhoid fever or as influenza. The given patient, of course, suffers but little from such mistakes in diagnosis; we have no specific treatment for this infection, and it runs its usual course, characterized by gastroenteric symptoms of varying severity, fever, indefinite muscular pains and tenderness, and edema of the face, especially marked about the eyelids. The patient usually recovers, though he carries with him after the disease the encysted embryos of the parasite that sooner or later undergo calcification. In some epidemics many cases have shown a more serious grade of infection, the mortality ranging from 2 to 30 per cent. But, while there is no specific treatment for the disease, we fortunately possess abundant knowledge of its prophylaxis, which should consist in the first place of careful and systematic examination of all swine flesh at the slaughter houses, and in thorough cooking of all meat in all cases where the possibility of infection has not been previously excluded. It is in this connection that the correct recognition of cases is of value, so that the importance of the prophylactic measures may be realized by the public and by the sanitary authorities before further harm is done.

In No. 3, Vol. VII, of *Russkii Vratch*, Dr. K. H. Georgievsky gives an interesting account of an endemic of the disease in Kharkof, Russia. For several years cases showing the above symptom-complex were observed, but their true nature was not recognized. Finally, in the year 1907, a number of such cases occurred in the practice of Dr. Georgievsky, whose suspicions were aroused. A careful examination of the blood showed marked eosinophilia, no reason for which could be found, though the stools were thoroughly searched for parasites. The diagnosis of trichiniasis was made and was soon confirmed by the examination of bits of muscle taken from the patients. Dr. Georgievsky presented the matter before the medical society of the city, and doubts were expressed about the identity of this epidemic with the milder cases noted on previous occasions. Fortunately a physician who had been attacked some time before consented to an examination, and in his muscles were found the encysted embryos of the nematode, thus proving the contention of the author.

This story is of interest, for it shows that while the general practitioner cannot be expected to perform the various technical procedures demanded in the study of disease in the hospitals, yet a careful examination of the blood is called for in all obscure cases. The eosinophilia associated with trichiniasis was first studied by American workers, and no doubt its significance will henceforth be as well appreciated by the Russian physicians, after their experience in this Kharkof endemic.

THE OPHTHALMO-REACTION IN TUBERCULOSIS.

In June, 1907, Calmette published a method of diagnosing tuberculosis which depends upon the reaction of the conjunctiva to tuberculin. As is now well known, one drop of a one per cent. solution of tuberculin instilled into the inner canthus of a healthy individual's eye causes no change in the eye, while it excites an inflammatory reaction of varying intensity in persons afflicted with tuberculosis. Calmette differentiates between a mild reaction, redness of the inner canthus and lacrymal caruncle; a moderate reaction, redness which involves the bulbous conjunctiva just beyond the caruncle; and an intense reaction, redness which involves the whole conjunctiva. Other observers have reported a large series of cases in which the test was tried. All agree that the test is harmless and that a positive reaction is a sure sign of tuberculosis. Later reports, however, do not justify this favorable opinion.

In the *Correspondenz-Blatt für Schweizer Aerzte* for January 15, 1908, Stoll reports his results in twenty-five individuals with absolutely healthy eyes. In seven, in whom a positive clinical diagnosis of tuberculosis was made, the reaction was positive in all, though only to a mild degree in the advanced cases. In five, clinically suspicious of tuberculosis, the reaction was positive three times and negative twice. In the remaining thirteen individuals, in whom tuberculosis was excluded clinically, nine positive and four negative reactions were observed. Stoll thus obtained a positive reaction in all the cases diagnosed clinically as tuberculosis and in two-thirds of

the cases in which no physical signs of tuberculosis were found. Other observers not only reported a large number of positive reactions in persons apparently free from tuberculosis (in a few instances substantiated by autopsy), but also negative results in tuberculous patients. Outside of a severe conjunctivitis in one patient, which lasted two weeks, Stoll saw no ill effects from the instillations, but others have reported cases of iritis, keratitis, and corneal ulcers caused by the tuberculin applications.

If these results are confirmed by others, one will be forced to conclude that the reaction is of little value as an aid to the diagnosis of tuberculosis and that it is not so harmless as was once considered. When positive in tuberculous patients, the intensity of the reaction is no criterion for the degree of tuberculosis.

A Notable Defense of Vivisection.

The members of the Woman's Auxiliary of the Society for the Prevention of Cruelty to Animals were treated to a surprise last week as they listened to an eloquent defense of vivisection by their president, Mrs. Cadwalader Jones. The speaker said that she had received many letters requesting her to declare her views on the vivisection question, and she therefore did so, but probably not in the way expected by many of her correspondents. Mrs. Jones said that she was a lover of animals, especially of dogs, and she admitted, as do most physiologists and experimenters, that vivisection might be abused and that animals undoubtedly had been tortured needlessly in the name of science, yet she held that vivisection was necessary and that great good had come to mankind through its practice. As an illustration of one of the many benefits it had conferred upon humanity she instanced the discovery of diphtheria antitoxin, which has greatly lessened suffering and saved the lives of innumerable children. Any one, she said, who, twenty years ago, saw children choking to death from diphtheria and now sees the results of antitoxin treatment cannot but bless this discovery which was made by experiments on animals. She defended the workers in the Rockefeller Institute, which has been made a special object of attack by the advocates of more stringent antivivisection laws, and exposed the falsity of the assertion that there was now no restriction on the practice of vivisection in this State. The present law provides that animal experiments shall be performed only under the authority of the faculty of some regularly incorporated medical college or university in the State of New York. This is an all-sufficient guarantee that animals will not be submitted to aimless experimentation or one that is not conducted in furtherance of scientific ends. Mrs. Jones quoted this law, and said that violators of it, or any who inflicted needless cruelty on animals, could be brought to justice; but she contended that the benefits to humanity of vivisection were very real and justified its practice. The opposition to vivisection comes from well-meaning but uninstructed persons whose hearts are larger than their heads, and who have never taken the trouble to examine the question from any but the sentimental side; they will not listen to arguments on the other side, for they come from what they regard as prejudicial sources. Such an able defense of vivisection by a woman whose life is devoted to the protection of animals from cruelty at the hands of man must appeal to the fair-minded opponents of this necessary practice and cannot but work for good to the cause of suffering humanity.

Intussusception.

The slipping of one portion of the intestine into an adjacent portion has been generally attributed to abnormal or excessive contraction of the muscular coat of the bowel, especially in the face of distal resistance or obstruction. It is most common in infancy and childhood and it is favored by a number of anatomical conditions, for example, undue length of the mesentery and the presence of a valve-like formation at the junction of the large and small intestine. While admitting the significance of the foregoing factors, Dr. John D. Rushmore (*Annals of Surgery*, August, 1907) contends that the contents of the bowel must play an important part in the immediate causation of the disorder, the starting point of which he maintains may consist in the presence of substances that by their bulk or chemical characters excite spasm or irregular contraction of the muscular layer. As the result of an analysis of 301 cases collected from various sources, and including two of his own, Dr. Rushmore defines intussusception as a form of internal strangulated hernia, the symptoms of which, except the tumor, are in almost all cases evident and striking, even to the layman, the diagnosis being comparatively easy to the medical observer. When a tumor is not readily palpable, a general anesthetic should be employed for diagnostic purposes rather than wait for the development of a tumor palpable subsequently. Any other than surgical treatment cannot be depended upon, and this should be instituted not only within the first twenty-four hours, but within the first twelve hours, as only in this way can the more grave dangers of gangrene be averted. Celiotomy and manual reduction offer the best chance of recovery. Mechanical means of reduction short of direct manipulation, such as air, gas, water, oil, etc., while free from the danger of atmospheric exposure and contamination by the hands, are objectionable because they fail to reveal the condition of the intestine to be reduced. While the mortality from operation on young infants for intussusception has been relatively high, early operative interference may be expected to yield a low mortality—at present about 12.5 per cent.

News of the Week.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the army will be held on May 4 and August 3, 1908, at points to be hereafter designated. Full information can be procured upon application to the Surgeon-General, United States Army, Washington, D. C. The essential requirements are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examina-

tions of May 4, applications must be complete and in possession of the Surgeon-General on or before April 1. There are at present twenty-three vacancies in the medical corps of the army.

Lectures at the New York Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital, Second avenue, corner Nineteenth street, announce that the following lectures will be given in the Out-Patient Hall of the hospital on Wednesday afternoons, at 4:15 o'clock: Dr. L. Duncan Bulkley, "Pathology in Its Practical Bearings Upon the Treatment of Certain Diseases of the Skin," March 4; also clinical lectures on Diseases of the Skin, until April 15. Dr. William Seaman Bainbridge, on the Treatment of Unremovable Cancer, with exhibition of cases, April 22, 1908. The lectures will be free to the medical profession.

Fire in Brooklyn Hospital.—The main buildings of the Norwegian Hospital, at Fourth avenue and Forty-sixth street, Brooklyn, were endangered last Saturday by a fire which broke out in a two-story frame outbuilding about thirty feet in the rear of the hospital proper and used as a storehouse for supplies. The fire was held in check by the hospital staff and citizens until the arrival of the firemen, when it was extinguished before it had spread to the other parts of the hospital.

Premature Burial.—A bill now under consideration in the Massachusetts Legislature provides that in every case of apparent death of a human being eleven specified tests for the discovery of life shall be applied to the body before preparations for burial are begun. The tests would be made by two physicians in person, one of them representing the Board of Health, and the cost of the service would be borne by the town or city in which the death occurred. None of the tests provided for in the bill is of such a nature as to arouse the opposition of surviving kinsmen or friends, but their number suggests the thought that perhaps, after all, none of them is very reliable.

Instruction in Medical Schools Regarding the U. S. Pharmacopœia.—At an informal conference recently called by Prof. Joseph P. Remington, and attended by sixteen prominent teachers in the medical schools of Philadelphia, the following resolution was passed: *Resolved*, That it is of the utmost importance for accuracy in prescribing, and in the treatment of disease, that students of medicine be instructed fully as to those portions of the United States Pharmacopœia which are of value to the practitioner, and that members of the medical profession be urged to prescribe the preparations of that publication; and further, that this resolution be forwarded to the medical and pharmaceutical journals and to the teachers of medicine and therapeutics in the United States.

Tea Adulteration.—Tea importers are in favor of a movement urging Congress to pass a law transferring the tea inspection service from the Treasury Department to the Agricultural Department in order to stop the use of coloring matter in the cheaper grades of tea and to secure better enforcement of the regulations against adulterants. It is alleged that many of the cheaper grades of teas which come here are colored with indigo and talc to make them look like the better grades, and that this coloring matter is deleterious to the health.

Monthly Bulletin of the Medical Society of the County of Kings.—Beginning with the current year, this society is issuing every month, except July and August, an excellent eight-page bulletin, designed to keep the members advised of all matters pertaining to the society's work, its various activities, its membership, and other subjects of general interest. In order to make the bulletin as useful as possible, each member is urged to become a frequent contributor of news items to its columns.

Institute of Experimental Medicine in Brazil.—The Brazilian Government has voted funds for the establishment of an experimental pathological institute at Manguinhos, intended for the study of the parasitic and infectious diseases of man, animals and plants, and for the preparation of serums.—*Science.*

Institution for the Teaching of the History of Medicine.—The project of founding in Vienna an institution for instruction in the history of medicine seems assured of success, as the government has promised a subvention and liberal contributions have been received from members of the profession. A building is shortly to be erected to serve as a museum, containing collections of objects relating to the development of medicine, such as instruments, portraits, books, etc. Professors Neuburger and von Töply have been the leaders in the enterprise.

Snakes in India.—The British Government has decided to distribute as widely as possible among the natives of India the special lancets for the treatment of snake-bite devised by Sir Lauder Brunton. These are so arranged that the handle contains a quantity of permanganate of potassium which is to be rubbed into the bite after this has been freely incised by means of the knife blade.

Tuberculosis in Sweden.—The Swedish Commission for the Prevention of Tuberculosis in a recent report to the government recommends the establishment by degrees of 4,600 sanatoria, at a total expense of nearly eleven million crowns. These institutions are to be supported by the municipalities.

A New Use of a Poison.—Several cases of death in the poorer quarters of the city have occurred lately as the result of poisoning with nitrobenzol. Some of these apparently were suicides, but it is suggested that the habitués of the resorts in this part of the city have become familiar with the toxic properties of the agent and are using it as a form of knockout drops.

Gift to the Berlin Library.—Professor Hirschberg, the prominent Berlin ophthalmologist, has informed the directors of the Berlin Royal Library that in his will he presents his collection of works on ophthalmology to the library, together with an endowment of $4,000, the income of which is to be used for subscriptions to periodicals on the same subject.

Honors for Lord Lister.—Under ceremonies of considerable pomp Lord Lister was on January 21 made an honorary burgess of the city of Glasgow. It was while professor of surgery in the University of Glasgow that Lord Lister made the researches that have given him his imperishable place in the annals of medicine.

Dr. William Seaman Bainbridge of this city has recently been appointed consulting surgeon to the Manhattan State Hospital.

Municipal Hospital of Philadelphia.—The following appointments have been announced: Dr. J. Earl Ash, first assistant resident physician, at $900 a year; Dr. Edward T. Clement, second assistant resident physician, at $800 a year; Dr. John T. Adylote, third assistant resident physician, at

$800 a year; Dr. J. Roy McKnight, first assistant resident, on the nonsalaried staff; Dr. Charles J. Swalm, second resident physician, on the nonsalaried staff.

Philadelphia Hospital.—Dr. Henry D. Jump has been appointed registrar, Dr. Herman Schwatt outdoor physician, and Dr. Charles S. Potts a member of the advisory board of the department for the insane.

Tulane University.—Work is soon to be begun on the new Richardson Memorial Building of Tulane University, New Orleans. The building is to cost about $200,000, and will have three stories and a basement, which will be devoted to laboratories, research rooms, and administration offices. It is expected to be ready by next October.

Nassau Hospital.—The new wing of the Nassau (L. I.) Hospital was opened on February 22 in the presence of Dr. Cleveland, Dr. Holbrook Curtis, Dr. William P. Bull, and numerous benefactors of the institution.

Mumps at Bryn Mawr.—An epidemic of mumps has appeared at Bryn Mawr, ten or fifteen cases having been reported and a considerable number of students are in quarantine

No Cholera at Acapulco.—The officials of the Mexican Superior Board of Health deny the allegations transmitted to the United States Navy Department that cholera is epidemic in Acapulco and affirm that no cases of the disease have occurred. The smaller vessels of Admiral Evans' fleet are due to arrive at Acapulso late in March.

New York Orthopedic Hospital.—The concert for the benefit of the New York Orthopedic Hospital held at the Waldorf-Astoria last week was largely attended and a satisfactory sum was realized for the hospital.

Street Railway Accidents During January.—A report of the accidents happening on the railroads of the city for the month of January made to the Public Service Commission shows that there was a slight falling off as compared with those reported for December. The total for that month was 3,993, and for January, 3,921. Fifty-one persons were killed in December and 44 in January.

Dermatologische Zeitschrift.—This periodical, which was formerly under the direction of the late Prof. O. Lassar, will in future be issued in enlarged form, under the editorship of Drs. A. Blaschko of Berlin, K. Herxheimer of Frankfurt, E. Huffmann of Berlin, V. Klingmüller of Kiel, and M. Wolters of Rostock. The publication office will be: Professor E. Hoffmann, Berlin, N. W., Schiffbauerdamm, 29.

Freemont County (Wyo.) Medical Association.—An organization with this name was formed at a meeting held at Lander and the following officers elected: *President,* Dr. Thomas G. Maghee, of Lander; *Vice-President,* Dr. N. D. Nelson of Shoshoni.

Terrebonne Parish (La.) Medical Society.—The following officers were elected at the reorganization of this society effected at a meeting held in Houma on February 9: *President,* Dr. J. B. Duval; *Vice-Presidents,* Dr. A. J. Delcourt and Dr. R. M. Calmore; *Treasurer,* Dr. L. J. Menville; *Secretary,* Dr. A. P. Delcourt.

Eastern Hampden (Mass.) Medical Association.—The following officers were elected for this society at the meeting held on February 13: *President,* Dr. H. G. Stetson of Greenfield; *Vice-President,* Dr. H. C. Martin; *Secretary and Treasurer,* Dr. M. B. Hodgkins of Monson.

Manila Medical Society.—At the meeting of this society held on January 8 the following officers were elected for the ensuing year: *President,* Dr. Harry T. Marshall; *Vice-President,* Dr. James M. Phalen; *Secretary-Treasurer,* Dr. Philip Garrison; *Councillor,* Dr. H. D. Kneedler.

Iowa Clinical Surgical Society.—The second annual meeting of this society was held in Des Moines on February 6 and the following officers were elected: *President,* Dr. Wilton McCarthy; *Vice-President,* Dr. Donald McCray; *Secretary and Treasurer,* Dr. D. S. Fairchild.

Death of Professor Voit.—On January 31 Geheimrat Carl von Volt of Munich died, at the age of seventy-eight years, after a short illness from miliary tuberculosis. Professor Voit, who was one of the pioneers in the investigation of the problems of metabolism, was for forty-five years a member of the faculty of the University of Munich.

In Memory of the Late Rabbi Gustav Gottheil a ward with an endowment of $10,000 is to be established in the Beth Israel Hospital.

Obituary Notes.—Dr. Wm. Badger of Flushing, L. I., died on February 13, at the age of seventy-four years. He was born in Andover, Mass., and after attending Phillips Andover was graduated from the College of Physicians and Surgeons in this city and held several hospital appointments. In 1862 he was made superintendent of the United States Army Hospital on David's Island, New York Harbor, and later he organized a State hospital for soldiers at Manchester, N. H. He retired from practice six years ago.

Dr. Leo Dansiger of Cincinnati was shot and instantly killed on February 14 by a demented patient. He was a native of Cincinnati and had practised in that city since his graduation from the medical department of the University of Cincinnati, in 1892.

Dr. L. H. Laidley of St. Louis died suddenly on February 5 of apoplexy, at the age of sixty-four years. He was born in Carmichael, Pa., and had come to St. Louis in 1872. He was professor of gynecology in St. Louis University and chief surgeon of the St. Louis Protestant Hospital. He was medical director of the recent World's Fair.

Dr. Andros P. Chesley of Concord, N. H., died on February 9 of nephritis. He was born in Epsom, N. H., in 1855 and was graduated from Dartmouth College in 1880. Three years later he received his medical degree from Long Island College Hospital.

Dr. P. W. Pope of Nevada, Mo., died of heart disease on February 3, at the age of fifty-six years. He was born in Jamesville, Wis., and was a graduate of the Keokuk Medical College. He had practised in Nevada for about fifteen years.

Dr. Allen F. Hammond of Montello, Mass., died January 27, at the age of thirty-seven years. He was born in Mattapoisett and was graduated from the medical department of Boston University in 1893.

Dr. Charles H. Morse of Marquette, Mich., died on February 3 of paralysis, in his seventy-first year. Dr. Morse was born in Nova Scotia and was graduated from Harvard in the class of 1868. He had practised in Marquette for about sixteen years. He leaves a son, Dr. W. H. Morse of Marquette.

Dr. Orlando Mixter of Worcester, Mass., died on February 6, at the age of sixty-six years, after a long illness. He was born in Leicester and received his medical education in the New York University Medical School. He had practised in Worcester for many years.

Dr. William L. Stovall of Bellefontaine, Miss., died on January 31, at the age of eighty-five years. He had practised in Bellefontaine for forty-seven years.

Dr. Henry C. Wood died at West Chester, Pa., on February 12. He was gradnated from the Hahnemann Medical College of Philadelphia in the class of 1867. He served as a surgeon in the United States Army during the Civil War.

Dr. William M. Urquhart of Orange, N. J., died of pneumonia on February 20, at the age of thirty-four years. He was born at Bradford, Pa., and was graduated from the University of Pennsylvania Medical School. During the Spanish-American War he served as assistant surgeon in the Sixteenth Pennsylvania Regiment.

Dr. Oscar Burbank of Waverley, Iowa, died on February 7, at the age of eighty-eight years. He was born in Massachusetts and was graduated from Harvard University in 1848. He had practised in Waverley for fifty-four years.

Dr. A. P. Chesney of Concord, N. H., died of nephritis on February 9, at the age of fifty-three years. He was born in Epsom and was graduated from Dartmouth College in 1880, receiving his medical degree three years later from Long Island College Hospital. He had practised in Concord for almost twenty-five years.

Dr. J. M. Jones of Newport, Ark., died of pneumonia on February 13, at the age of sixty-two years. He had practised in Newport for more than thirty years.

Dr. B. S. Crawford of Keokuk, Iowa, died on February 13 at the home of his son, Dr. B. S. Crawford of St. Joseph, Mo. Dr. Crawford was born in Illinois sixty-three years ago and was graduated from Keokuk Medical College.

Dr. Henry C. Morrison of Kansas City died on February 7, at the age of sixty-five years. He was born near Baltimore, Md., and served through the Civil War as assistant surgeon in the Twenty-sixth Pennsylvania Regiment. He had practised in Kansas City since 1870.

Dr. Lawrence E. Holmes of Asheville, N. C., died on February 8, at the age of thirty-five years. Dr. Holmes was born in England and was graduated from the University of Pennsylvania Medical School in 1897. Since 1901 he had been a resident of Asheville.

Dr. George Alfred Baxter of Chattanooga, Tenn., died on February 12, at the age of fifty-seven years. He was born near Asheville, N. C., and was graduated from Hobart College in 1871, receiving his medical degree from Bellevue Hospital Medical School. He began practice in Chattanooga in 1873 and was one of the first to perform ovariotomy in the State. He had held many positions as railway surgeon and distinguished himself during the yellow fever epidemic of 1878.

Dr. George A. Robinson of Sayville, L. I., died at St. Augustine, Fla., on February 22, at the age of fifty-seven years. He was a native of Newmarket, Canada, and had practised in Sayville for nearly thirty years.

Longevity in Turkey.—It is asserted that no other country produces so many instances of extraordinary longevity as Turkey, many such cases having been satisfactorily proven. There is said to be at present living in Keni Baghtcha a government bookbinder aged 134 years, who has held his position for eighty years. His father was also a government functionary, and died at the age of 142 years.

Correspondence.

CHLORINE AS A GERMICIDE.

To the Editor of the Medical Record:

Sir:—My repeated and continuous success in the use of chlorine for now close on twenty years has convinced me that others will find it invaluable and obtain similar excellent results. In acute tonsillitis without pus its astringency relieves quickly the congestion. In quinsy it is of great service as a gargle or spray or both—it seems to combine with and "eat away" the pus very rapidly and leave a red surface which soon subsides.

In diphtheria before the days of antitoxin I used it exclusively as a gargle and spray combined in attacking the membrane. If swallowed at all it does not nauseate or inconvenience—in fact my old chief, Dr. Lyon, gave it internally as well in doses of two teaspoonfuls every hour to children. As an adjuvant to antitoxin it is excellent. In inflamed states of the gums, abscesses from caries of teeth, etc., he used it freely as a mouth wash.

Seeing such good results on the throat I have applied it to the treatment of infected wounds of all kinds for nearly two years, and in fact have discarded everything else for it—whitlows, abscesses, local or diffused cellulitis with multiple incisions, foul ulcers—in fact any conditions where pus exists—sometimes by continual immersion in the solution or by packing wounds with sterilized dressings dipped in the solution.

In some books it is stated that chlorine lotion produces irritation of the skin surrounding a wound—personally I have never once found it do so.

Below I give a formula for the making of this chlorine solution; it is the original formula of Dr. Lyon, of County Durham, England.

Formula.—Take stoppered bottle to hold one quart. Warm it gently; place 80 grains of powder of potassium chlorate in the bottle, then add 80 minims of strong hydrochloric acid and close tight. Wait three or four minutes, till all the powder has dissolved and the free chlorine gas has been evolved. Then remove the stopper and quickly add one-half pint of cold water and shake vigorously so that as quickly as possible a solution is made of the chlorine gas. Then add water till the quart is made up. Allow it to stand for an hour before using.

A fresh solution is to be made each day. This is important. If the solution feels too strong on gargling dilute with an equal amount of cold water.

J. C. H. Beaumont, M.D.

R. M. S. *Oceanic.*

INSTRUCTION TO SUFFERERS FROM VENEREAL DISEASE.

To the Editor of the Medical Record:

Sir:—Early last fall I published papers dealing with instructions to those having syphilis, chancroids, and gonorrhea, respectively in the Medical Record, *New York Medical Journal*, and the *Long Island Medical Journal*. As this matter of printed instructions is very rarely dealt with in the medical press, and in fact is usually totally neglected, I gave very little attention to the detail of looking up literature. All the more because I aimed not to publish anything new, but rather to state successful clinical experience in this rather accurate way of dealing with the venereal patient of our clinics.

My friend Dr. Follen Cabot has written me that about nine years ago he published circulars on the same subject, excepting chancroid, and also that about a year ago he read a brief paper before the American Society of Moral and Sanitary Prophylaxis on the same point. These papers escaped my attention largely because the titles thereof are rather long and involved and thus were passed by, in the matter of looking up data on "instructions." I desire by this letter to give Dr. Cabot full credit and to agree with him in the fact that one receives very little encouragement in these matters.

For example, at first many of my colleagues at the New York Hospital and House of Relief doubted the wisdom of such circulars, but experience has shown them to be both wise and serviceable.

I ventured to write to the Surgeons-General of the United States Army and United States Navy, due to an inquiry from one of the surgeons in the Marine Hospital Service about these circulars. The Army replied most courteously and sent me a pamphlet of their own much like what I have written. The Navy, on the other hand, has not even acknowledged my letter.

I likewise wrote to the local Board of Health asking whether instructions might not be issued by the board in

these diseases similar to those published for tuberculosis. The question appealed to me as somewhat public-spirited and perhaps commendable, but up to the present writing no acknowledgment of the letter has been given. The fact remains, however, that in our experience these instructions are most advantageous, which concurs with the experience of men like Fournier in Paris and Cabot in this city. It is hoped that others may find it worth while to try the question out themselves. V. C. PEDERSEN, M.D.

AMPUTATION OF THE FOREARM *IN UTERO*.

To the Editor of the Medical Record:

Sir:—The following case is, I think, of sufficient interest to be worthy of a report. About 4 o'clock in the afternoon of December 31, 1907, Mrs. J., a multipara about thirty-five years of age, was delivered of a still-born male child. On the morning of January 1, 1908, the writer was called to deliver the placenta. Labor, according to both the patient and midwife, had been long and tedious, lasting over thirty-six hours before the birth of the child.

The child's left hand was found to be entirely wanting, the left forearm being amputated about midway between the elbow and wrist. In every other respect, with the exception of a cyanotic appearance, the child seemed perfectly normal, and from this and the history of the case it seems probable that death was due to pressure upon the cord during the birth. The amputation had healed perfectly by a linear scar which extended from before backward across the end of the stump and thence vertically for about one inch on the dorsal surface of the forearm, just as if it had been done by a circular and an intersecting vertical incision on the dorsal aspect of the forearm. The skin on the end of the stump was loose and slightly puckered. Upon being questioned the midwife stated that at the birth of the child the left arm was in a vertical position, the stump of the forearm resting against the back of the neck. The cord passed over the neck from right to left and was resting against the end of the stump, the amputation being brought about in all probability by prolonged pressure by the cord. The vertical scar on the back of the forearm was due to the oblique direction in which the cord crossed. The placenta was found lying in the vagina. The patient had bled profusely, but nothing unusual was noticed in her discharge, either during or following labor. Her recovery was uneventful. IVAN P. BATTLE, M.D.

ROCKY MOUNT, N. C.

EDUCATION OF THE BLIND-DEAF.

To the Editor of the Medical Record:

Sir:—May a layman ask the medical profession to do great good? The prevailing notion is that the education of the blind-deaf is "wonderful," very abstruse, requiring special fitness, etc. A very large majority of the blind-deaf come from ignorant parents, who do not know that the education of such children is entirely within the scope of any school for the deaf.

Now, if physicians generally would tell parents of such children that the deaf school of their State can educate these children there would not be so many neglected ones, buried in darkness.

To be certain in the statement I make, that any school for the deaf *can* educate a blind-deaf child, not feeble-minded also, all the physician has to do is to write to the superintendent of the deaf school in his State.

WILLIAM WADE.

OAKMONT, PA.

MEDICAL EVIDENCE IN CRIMINAL CASES WHERE THE PLEA OF DEFENCE IS INSANITY.

To the Editor of the Medical Record:

Sir:—The alienist, as a rule, is called only when the nature of the condition has been recognized by the family or friends. The general practitioner observes his patients, their histories, their strength and weakness, physical and mental, as no specialist can possibly. He watches the evolution of their maladies and traces them to their origin. Therefore in mental disturbances of any kind his opinion is much more likely to be correct than that of the specialist.

It is difficult to get a correct history in mental affections. The family generally deny any hereditary taint, and thus deceive the physician if possible; but the observant doctor knows that when one parent is phthisical and the other neurotic, the offspring may be and often is insane. Then again when there is a syphilitic taint, one may have violent attacks of insanity, lasting from a few minutes to twenty-four hours, and then become perfectly clear mentally. In such cases the evidence of the general practitioner is more likely to be correct than that of the alienist. It is a mistake to suppose that the intellect or reasoning faculty is solely disordered in persons afflicted with mental derangement. There are many cases to be met with in which it consists in a morbid perversion of the moral affections, without any perceptible lesion of the intellectual faculties.

There are madmen in whom it is difficult to discover any trace of hallucination, but there are none in whom the passions and moral affections are not perverted or destroyed. The most productive causes of the complaint are love, fear, reverse of fortune, domestic chagrin, or family dissensions. Physical causes are much more commonly the origin of insanity than is generally supposed. The observant physician sees the premonitions of insanity in many families, but is cautious about calling their attention to it for obvious reasons. Insanity is supposed to cast a stigma upon any family in which it may make its appearance; consequently the members of such family are most desirous of concealing the existence of any such condition until it unfortunately develops itself. The origin of the evil is to be sought for in that artificial state of society which grows necessarily out of constant advancement and civilization. We multiply our comforts and in consequence our cares and crosses, we beat out and expand our minds as it were and thus create a more extended surface for impression.

J. H. O'DONNELL, M.D.

WINNIPEG, MANITOBA.

THE MENTAL STATE PRECEDING A HOMICIDE.

To the Editor of the Medical Record:

Sir:—The opportunity of studying the mental condition of a murderer about one hour previous to the commission of the crime is so rare that a report of such a case may be of interest to students of criminology.

Having been employed by a district attorney to examine a man under indictment and awaiting trial for manslaughter, and in whose defense a plea of insanity was about to be made, it became necessary for me to visit him in the county jail. I made the journey by electric railroad. The car was well filled, with one empty seat by my side. After riding a short distance we came to a stop and J. boarded the car. J. at that time was about twenty-five years old, the son of respectable parents, natives of Ireland, and of good family history. He had recently received an honorable discharge from the regular army. As I had treated him before his enlistment for a fractured metacarpal bone, he recognized me and, without hesitation, took the empty seat by my side. He presented every evidence of having been upon a prolonged debauch: his breath was strong with the intensely offensive odor of stale whiskey, his face was badly bruised, and, while he did not noticeably stagger, there was some muscular incoordination. Myosis was pronounced, and, as nearly as I could determine by careful observation, his pupils were rigid and sluggish of reflex. His mental condition, however, at once attracted my attention. His ego was excessively exalted. He seemed to be full of delusions as to his mental and physical excellence, his delusions somewhat resembling those of a paretic dement. Coupled with these delusions was an intense combativeness, which, I learned subsequently, was a prominent trait of a waywardness of character manifested from early youth. In conversation he stated that he had always worsted a prominent local attorney in the trial of cases; that he had been blown up by a charge of dynamite higher than the walls of a deep rock cut, through which we were passing, and had alighted unhurt. As a proof of his physical prowess he proposed to throw the conductor into Bloody pond when we arrived there. A man boarded the car out in the country. J. proposed that I should get into a dispute with him when he would take my part and "do the countryman."

Having reached my destination, I left the car. J. rode six miles to the next village, entered a hotel and very shortly became involved in a fight with a colored man. The proprietor came to the aid of J.'s antagonist and the two, after beating him, threw him out of doors. J. then unlocked his trunk, which stood on the porch of the hotel, took out a loaded revolver, and, entering the hotel again, shot the landlord, inflicting a mortal wound. He was indicted for murder in the first degree, tried, and found guilty of murder in the second degree, and is now serving a life sentence. No question of mental irresponsibility was raised by his counsel.

I saw him a few weeks later, while confined and awaiting trial. He was then in good mental condition, and, after

having served five years of his sentence, he still remains so. While the verdict in his case was doubtless just and necessary to safeguard the rights of society, it is doubtful if J. at the time of the homicide could be called a person of sane mind.

Did he understand the nature and quality of his act, and, if so, could he refrain from its commission?

FREDERICK B. STREETER, A.M., M.D.,
Visiting Physician Parker Hospital
GLENS FALLS, N. Y.

OUR LONDON LETTER.

(From Our Special Correspondent.

LETTSOMIAN LECTURE—TUBERCULOUS ENDOCARDITIS—KINEMATOGRAPH AND X-RAYS IN DIAGNOSIS—THYMIC ASTHMA—CHEMICAL ANTISEPTICS IN OPERATIONS—LEES-RAPER LECTURE—OBITUARY.

LONDON, February [illegible], 1908.

TUBERCULOSIS of the kidney was the subject of a Lettsomian lecture at the Medical Society of London on Monday by Mr. Charters Symonds of Guy's Hospital. He devoted it mainly to the early signs and the effects of operations, pointing out the necessity of examining the urine in cases of renal colic, especially in young patients, as well as the great significance of vesical and urethral irritation; also percentage over amount of albumin in the urine greater than would result from the presence of pus. These points were illustrated by interesting cases. In one a young lady of twenty had an attack of renal colic. Two years later a second and a few months after that a third. Albumin had been noticed three months, with a little pus. *X*-rays gave a negative result. Bacilli were looked for and found. The cystoscope showed tuberculosis around the right ureter and swelling of the orifice. The right kidney was therefore removed and showed long-standing tuberculous mischief, with some fresh miliary tubercles. Under tuberculin treatment she recovered.

Another illustration was a man of 46, out of health for two years, during which time he suffered from renal colic on two occasions. It was thought that a calculus had passed into the bladder, but none was found. Then the urine was examined for bacilli, which were present. On cystoscopic examination there was prolapse with edema of the right ureteric orifice. The kidney was removed and showed old cicatrices and contraction of lower pole, with recent miliary tubercle in the cortex and pelvis. The bladder symptoms disappeared after the operation.

Vesical irritation may be the only symptom, as in the case of a young woman who was troubled with it for a year. The cystoscope showed a healthy bladder, but the lips of the right ureteric orifice were swollen and marked by a number of white elevations. The right kidney was removed. Its lower half was extensively diseased and fresh clumps of tubercle tissue occupied the cortex and pelvis. The ureter was removed also. Rapid recovery ensued.

A lady of 40 had attacks of abdominal discomfort, scarcely pain, mostly at night, for a couple of years. Then vesical irritation set in. A large amount of albumin with only a little pus in the urine was suggestive of tubercle, and bacilli being looked for were found. The bladder also was tuberculous, ulceration was present near the right ureteric orifice, the margins of which were, however, normal, and the urine flowing was clear. Tuberculin treatment was tried, but without benefit, for ten months, when rigors set in, the temperature rose, a painful renal tumor formed, and much pus was discharged. Nephrectomy was done, the ureter being left. There were cavities in the kidney full of pus, obliteration of much of the pelvis with one ulcerated channel leading from some of the cavities to the ureter, suggesting a recent communication between these after disease of long standing.

A lady of 30, suddenly seized with rigors and hyperpyrexia and signs of septicemia, was found to have been troubled for months with vesical irritation. On exploration the left kidney was found enlarged and was incised through the loin with evacuation of pus and subsidence of symptoms. Later on the kidney was removed and found tuberculous. The bladder symptoms still continued and the whole ureter was removed. After this recovery occurred and the patient is now quite well—ten years after the operation.

Tuberculous endocarditis was the subject of a paper at the Royal Society of Medicine by Dr. W. O. Meek. He related two cases of miliary tuberculosis with vegetative endocarditis due to the tubercle bacillus. The condition is rare so far as the literature shows. In one case there were rigors, pyrexia, etc., during life and at the necropsy [illegible] of small recent vegetations on the mitral and aortic valves were found, also recent infarcts in the spleen and liver. Under the microscope the vegetation appeared as a granular necrotic material with a zone of [illegible] cellular proliferation at the junction with the valve. Throughout the vegetation there were large numbers of tubercle bacilli, in parts forming [illegible] and in their deeper parts were circular foci of caseation in which bacilli were included. No giant cells. In the infarcted areas clumps of bacilli occupied the blocked vessels. Cultures from the spleen were sterile after four days. No other microbes. In the other case there was advanced miliary tuberculosis. In this there [illegible] vegetations on the mitral valve, histologically similar to those of the first case. Bacilli were scattered through the lesion sparingly. No other microbes. That the bacilli were the cause of the vegetation, the author admitted was doubtful in this, though he considered they certainly were in the other case.

In the Medical Section on the 28th ult. Dr. Campbell Thomson showed kinematographs of abnormal attitudes and gaits and the display elicited remarks on the value of this method in analyzing complex movements in disease of the nervous system. Dr. Hertz also read a paper describing investigations by *x*-rays and meals containing bismuth to show the passage of the food through the alimentary canal, chiefly with a view of elucidating the problems of chronic constipation. A diffuse shadow was seen as a meal passed through the small intestine, but it was scarcely to be traced in the larger bowel on account, perhaps, of the dilution with the fluids in the greater area.

In the Clinical Section a case of sudden dyspepsia in a boy of 5½, which terminated fatally in three and a half days, was related by Dr. Sidney Phillips. There was 110° fever and nothing detectable in larynx, lungs, heart, or urine, and no sign of mediastinal pressure. At the post mortem there was found some enlargement of the thymus and mesenteric glands and spleen. It was suggested that the case was one of those formerly called thymic asthma. There seemed to be no laryngeal spasm and laryngismus does not take such a course as this or kill off in such a way. Pultauf considers that enlarged thymus or other gland sets up a constitutional state in which there is a tendency to cardiac failure. Escherich and Blumler seem to entertain somewhat similar views. In some cases resembling this relief has been obtained by raising the enlarged thymus from the trachea, and Dr. Sutherland mentioned that he had seen this done. The practice would seem natural, considering that Morfans found the trachea flattened by the enlarged thymus and Dr. Poynton had seen a case in which there was dullness due to the enlarged thymus. Some have held that these cases are due to "status lymphaticus," a term which Dr. Bernstein said was too often a cloak for ignorance. Dr. A. Russell remarked that in health the thymus ranged from 5 to 10 drams in weight, but in cases such as these it was generally 25 drams.

Mr. Lockwood read a paper at the Medical Society of London on the 27th ult. urging that the use of chemicals for banishing bacteria from the field of operation should not be given up. Wound infection, he said, came from the hands and person of the surgeon and his assistants, from the skin of the patient, and from the atmosphere. He himself uses the spirit and biniodide lotion. This is really a solution of mercuric iodide in potassium iodide. Alcohol is a powerful germicide and has the advantage of removing cutaneous grease. Mr. Lockwood's practice is after washing his hands to soak them for not less than two minutes in spirit and biniodide lotion and transfer them repeatedly from that to a watery solution of biniodide (1 in 2,000). The biniodide does not combine chemically with the skin, but some of it remains closely connected with it. Care and accuracy are required and therefore inexperienced assistants should wear gloves. Considering that asepsis depends on saturating the skin, Mr Lockwood has the patients' skin treated in the same way for at least three minutes. Atmospheric infection or environment infection, as it might be called, might be due to coughing and other sources. He had had no ill results from the use of chemical antiseptic solutions in his operations.

The eighth Lees-Raper lecture was delivered at Oxford on Tuesday by Mr McAdam Eccles under the presidency of Professor Osler. The relation of alcohol to national efficiency was trenchantly treated by the lecturer. He said the action of alcohol on living tissue tended to the deterioration of the individual and of the race. It was specially potent in child life. The effect on infants, whether taken through the mother's milk or from spoon or glass, was so bad that many hospitals issued warnings con-

cerning it. Alcohol began to act on the child before its birth, continued its evil effect in infancy and was too often perpetuated afterwards. National deterioration led to loss of supremacy and active measures were required to stem the tide flowing over the land. Mr. Eccles suggested a number of such measures which our legislators might consider, closing with the suggestion that to alter the trend of public opinion the universities should encourage research into the problems involved and publish the results with the weight of their authority. This, he thought, would help the politicians and social reformers.

Mr. William Allingham died on Tuesday, aged 78, at Worthing, to which he had for some time retired. He was for many years surgeon to St. Mark's Hospital for Fistula and to the Great Northern Hospital. He took his M.R.C.S. in 1855 and two years later the Fellowship by examination. He had been demonstrator of anatomy and surgical registrar at his hospital (St. Thomas's.) His work on "Diseases of the Rectum" went through several editions. He was a contributor of various cases to the journals and societies and long enjoyed an extensive practice, particularly in surgical diseases of the lower bowel.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

OPENING OF NEW BUILDING FOR MEDICAL DEPARTMENT AT QUEENS UNIVERSITY—HOSPITAL REORGANIZATION AT TORONTO—LEGISLATION FOR MEDICAL INSPECTION OF SCHOOLS.

TORONTO, January 25, 1908.

THE new medical college at Queens University, Kingston, was opened with appropriate ceremonies on Tuesday last. The new building, which is handsome in design and well constructed, has been carefully planned to provide, in addition to well-appointed lecture halls, a complete series of medical laboratories, equipped with all the requisites for practical work. The formal opening was marked with great success. The chair was occupied by Principal Gordon and with him on the platform were representatives from all the leading Canadian universities. The opening address was delivered by Dr. L. E. Barker of Baltimore, a Canadian graduate, who always receives a cordial welcome in this country. Dr. Barker's theme was "Medical Laboratories," a subject which he treated in all its phases. Reference was made at length to many important discoveries which research work had brought to light, and the necessity of having properly equipped laboratories in connection with every medical college was now generally recognized. To the students, Dr. Barker pointed out, laboratory facilities opened a field from which a harvest of hidden truths might with industry be gleaned. Hon. Dr. Pyne, Minister of Education for Ontario; Dean Reeve and Professor MacCallum of Toronto University; Professor Adami and Professor Mills of McGill University, Montreal, were the other speakers. Each one referred in congratulatory terms to the excellent work Queens University was doing for the cause of medical education in Canada, and expressed themselves delighted with the new and modernly equipped building in which Professors and students were to find such greatly improved facilities for carrying on their work.

The trustees of Toronto General Hospital have for some time had under consideration a scheme for the reorganization of the staff in connection with that institution. The requirements by Toronto University of adequate facilities for clinical instruction have been carefully considered in discussing and adopting the plans decided upon. In making appointments to the visiting staff previous training and record, capacity to render service to the sick in the hospital, scientific attainments, teaching ability, and the promise afforded for future work have alone governed the trustees. The members of the staff, who are without salary and have to be reappointed annually, are not to be allowed to serve on the staff of any other hospital. The following services have been instituted: In medicine (including dermatology and neurology) three coordinate services, in surgery three coordinate services, in obstetrics one service, in gynecology one service, in ophthalmology one service, in otology, rhinology, and laryngology one service. With respect to the coordinate services in medicine and surgery it is understood that the decision reached by the committee at the present time and with regard to the existing situation is not to preclude the trustees at any future time from reopening the question and considering whether a different system might not better serve the interests of the hospital and of medical education in connection therewith. Each of the services in the several departments shall be under a head, with such associates and assistants as may be found necessary. The several services in all departments shall be so organized as to include both indoor and outdoor patients, and the heads of such services shall be responsible for the treatment of all such patients. The heads in surgery must retire from their position at the age of 55 and the heads in medicine at the age of 60 years. The former age limit is to apply also to the heads of the departments of obstetrics, gynecology, ophthalmology, otology, rhinology, and laryngology. The term of service, dating from the present reorganization, in all departments, shall be ten years. The three heads in medicine shall not engage in general practice, but shall confine their work outside of the hospital to consultations. The heads in surgery and in other departments shall strictly confine their work to their respective specialties. The departments of pathology and bacteriology shall be in charge of the professors of Toronto University in those branches. The department of anesthetics shall be under the supervision of one head. All public ward patients are to be under the heads of the different services and available for clinical instruction of students of Toronto University.

There is a probability that in the Province of Ontario legislation will shortly be introduced requiring medical inspection of all children attending public schools. The value of preventive medicine is generally admitted and the deliberations of the Congress held on the subject of school hygiene in Great Britain during the past year have awakened fresh interest in this country. The necessity of making more careful study of the physical and mental characteristics of each child and preserving records in regard to the same is acknowledged. To the defective construction of schools, particularly in reference to ventilation, heating, and lighting, is ascribed many of the causes of sickness in childhood. It is urged by the advocates of medical inspection of schools that a system can be adopted that will early detect the usual diseases and provide steps for preventing the spread of such by tracing out and correcting the causes of the conditions complained of. Montreal was the first city in Canada to move in this important matter and the results of medical inspection there indicate how necessary and useful such legislation would be if made to apply to a whole province. It is felt that if Ontario leads in this important matter the other provinces of Canada will follow.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

DEATHS OF LASSAR AND HOFFA—SEMEN AND DARK FIELD ILLUMINATION—OPERATIONS ON THE LUNG—TUBERCULIN REACTIONS.

BERLIN, January 18, 1908.

WITH the new year the Berlin Faculty has sustained two serious losses which have been all the more deeply felt since the dead were taken while still actively engaged in their lifework. Oskar Lassar was the victim of a street accident and Albert Hoffa died while apparently in the prime of life as the result of an insidious heart and kidney disease. The achievements of the world renowned dermatologist, Lassar, and the no less celebrated orthopedic surgeon Hoffa, are too well known for me to attempt to describe them in this place, but a word may be said in regard to their work in the field of public health. Lassar founded a clinic and polyclinic for skin and venereal diseases which was supported entirely from his own private purse, and this at a time when no other such enterprise had been undertaken. He was always ready to offer his lecture room for the meetings of societies, and was vitally interested in furthering the foundation of public baths. He organized the German Society for Public Baths which has enabled every dweller of the larger cities to take a complete shower bath at any time of the day or year for the sum of 10 pfennigs (two and one-half cents). Until his death he was the president of the society and its most active member. He was particularly fitted for the work of organizing large assemblages and there have been few medical congresses in Berlin to the success of which Lassar did not greatly contribute. Hoffa's public services have been closely connected with his specialty of orthopedic surgery. He was especially interested in the matter of providing suitable means of support for individuals partially incapacitated as the result of accidents, and for cripples. The institutions for the treatment of bone and joint tuberculosis also received his ardent support, and the Cäcilienheim in Hohenlychen—named after Crown Princess Cecelia—was largely the result of his efforts.

The Berlin Medical Society, which is by far the largest of the medical societies of the capital, has again almost unanimously elected Senator president. From the last

session of the preceding year mention may be made of a demonstration by Posner relative to observations on human semen with dark ground illumination. This is noteworthy on account of the new method of examination. On the dark field the actively moving spermatozoa are to be seen as shining white bodies against the black background. A new feature seen by this method is that the middle piece is surrounded by a number of filaments with spherical enlargements. These filaments which in less distinct form have already been seen by Benda and described by him as the true organ of motility, can be detected only on perfectly mature spermatozoa. In specimens obtained by puncture from an individual suffering from azoospermia this structure could not be demonstrated.

In the session of January 8, W. Koerte spoke on resection of the lung for bronchiectatic cavities and presented patients who had been operated on successfully. He considered that there was no use in opening only a single cavity as the suppuration persisted undiminished in the others. Two difficulties were to be overcome in the diagnosis. Productive pneumonias in the *x*-ray pictures appeared as shadows and could therefore readily be mistaken for abscess cavities, and, furthermore, in some cases pulmonary abscesses might be mistaken for bronchiectatic cavities. From the prognostic standpoint it was necessary to differentiate clearly between these conditions, for in twenty-eight cases of pneumonotomy for abscess and gangrene twenty recoveries had resulted, while in fifteen performed for bronchiectasis only four cures were effected. A reasonable outlook for cure was afforded only if the bronchiectatic condition was limited to a single lobe of the lung. It had been found best to obtain free access to the lung by resecting two ribs, and in this way enough room was gained for subsequent operations. The mucous membrane in the neighborhood of the hilus of the lung was very sensitive and contact with it caused attacks of coughing. If simple opening of the foci did not result in cure, at a second operation further resection of the ribs and pulmonary incisions were resorted to in the hope that the resulting pulmonary shrinkage would lead to permanent cure. Only in case these measures had proved unsuccessful was resection performed. A boy of eight years was demonstrated whose lower lobe and half of the middle lobe had been removed. Difficulties encountered at the operation were deep-seated hemorrhage and irritation of the vagus leading to respiratory and cardiac symptoms. Sauerbruch's cabinet, in which the operation was performed under reduced pressure, was not necessary, as pneumothorax was not greatly to be feared. Early operation was to be recommended in every case, though the patients always opposed the suggestion.

Every number of the German medical journals contains a contribution on the cutaneous tuberculin reaction of von Pirquet, and the conjunctival reaction introduced by Calmette. An interesting paper was read by Stadelmann and Wolff-Eisner on this subject in the Society of Internal Medicine. Stadelmann first described the typical course of both reactions with especial reference to the late reaction. Except for a slight lymphangitis in isolated cases, no drawbacks to the procedures had been noted. In clinically certain tuberculosis a positive reaction was obtained by both methods. In advanced cases the reaction became weaker the more serious the condition. In the course of the observations it was found that a negative reaction was prognostically unfavorable. Of patients in the second stage of the disease five passed into the third stage and of fifteen in the third stage fourteen died. This feature of the reaction might be found useful in selecting patients suitable for sanatorium treatment. Clinically the conjunctival method was superior to the cutaneous one, not only because more readily carried out, but also because in the presence of latent foci it was negative. Furthermore, one-half of all healthy persons reacted to the cutaneous method, while only a sixth responded to the conjunctival test. Repetition of the test was of no advantage. The speaker in closing claimed for his collaborator Wolff-Eisner priority in regard to the conjunctival reaction, for this observer immediately on von Pirquet's announcement had hit upon the idea of testing the reaction to tuberculin in the eye.

Will of Baroness De Rothschild.—By the will of the Baroness Adolphe de Rothschild, who died a few months ago, more than $1,600,000 is given to charity. Among the objects for which the money is to be used are a maternity hospital, an establishment for providing pure milk for infants, and refuges for orphans and working girls.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

ORTHOSTATIC ALBUMINURIA—PLEURITIC EXUDATION—TUBERCULOSIS OF THE HIP—PROLAPSE OF THE RECTUM.

VIENNA, January 15, 1908.

LUDWIG JEHLE, Prof. Escherich's assistant, has reported on observations on orthostatic albuminuria during childhood, a condition of which the etiology is still uncertain. Six children under Jehle's constant observation excrete albumin only while standing but not while walking or running, or when seated in a perfectly upright position resembling that of standing. The excretion is most abundant while kneeling but is absent if the child while in this position sits on its heels. In these changes of position the kyphosis of the lumbar spine is converted to a lordosis and as soon as this takes place albuminuria at once results. If the patient stands bent forward slightly there is no albumin in the urine, but it immediately appears when the child assumes the vertical position. When Jehle fixed the body in the bent position by means of a neck band fastened to a pelvic belt no albumin excretion followed in spite of days of walking and standing, but it immediately resulted when the restricting band was removed. A child was placed in a plaster jacket while standing and then put to bed, with the result that the albumin excretion continued. The lordosis therefore appears to be a causative factor of orthostatic albuminuria, and probably a definite variety of lordosis, having its greatest curvature not at the third and fourth lumbar vertebræ as is customary, but at the first and second. Jehle believes that this is a result of a weakness of the lumbar musculature in delicate or convalescent children, and that the lordosis either directly or indirectly causes kinking of the renal vessels leading to interference with the circulation of the organ which results in the excretion of albumin. An anatomical lesion of the kidney cannot be present since the albuminuria ceases at once on correcting the lumbar lordosis.

Hermann von Schrötter observed a patient with unusually freely movable pleuritic exudation. Three years before he had suffered from fluid on the right side which was frequently aspirated. At present, examination revealed an exudate limited in the sitting position by the angle of the scapula posteriorly and in the right axilla by the fifth rib, while on lying down dullness began only at the fifth interspace. The case was one of very freely movable fluid, a condition that was apparent also on *x*-ray examination. When the patient was laid on the left side it could be seen that the exudate moved downward toward the mediastinum, the diaphragm and lung becoming clear so that the latter enlarged on inspiration while the diaphragm descended.

Prof. von Hacker of Graz resected the hip for tuberculous disease in a patient of twenty-four years. The wound was closed entirely after the introduction of iodoform glycerin emulsion and in fourteen days was completely healed by first intention. The condition had lasted for three years and had presented typical symptoms. Three months after the operation the patient was able to walk without pain by the aid of a plaster-of-Paris dressing. In the fifth month she began to walk without any dressing whatever. Externally the hip hardly appeared altered and flexion and extension, and adduction were possible to a considerable degree, rotation to a smaller extent. Shortening was 4 cm. A radiograph showed the acetabulum filled with iodoform while the stump of the neck of the femur was in a position of slight abduction opposite to the upper edge of the acetabulum. The operation fully met with the expectations, and showed that under favorable conditions resection of the hip could be made to heal by first intention without drainage even when performed for tuberculosis.

Bittner of Brunn effected a cure in two cases of prolapse of the rectum in children in which he operated in a manner similar to the procedure of Thiersch by subcutaneous narrowing of the anal ring by means of a strong silk suture. Both children were two years of age and for many weeks had suffered from rectal prolapse of considerable intensity. The rectum descended for ten to twelve cm., especially on defecation, while the sphincters were much relaxed. After all the customary bloodless procedures had failed the following plan was resorted to. The children were prepared for several days by being kept in bed on a scanty fluid diet while the rectum was frequently emptied. On the day before the operation the child was given nothing but tea, the intestine was again thoroughly emptied, and a little opium was administered. Before the operation the rectum was packed and the operative field carefully cleansed. A small incision was then made through the skin in front and behind the anal ring. By means of a strong curved needle a heavy silk thread was

drawn from the anterior incision subcutaneously to the left of the anus to the posterior one, the needle being again inserted and the thread caused to emerge from the original opening after having passed to the right of the anus. The thread was then gradually tautened while an assistant with his finger in the rectum controlled the degree of constriction. The thread was tied and buried, the two incisions were closed by suture and the tampon was removed from the rectum. After the operation another dose of opium was given and the child dieted for five days. The sutures were then removed and the bowel well cleared out by means of castor oil. The result was very good, a permanent cure being effected. Bittner used a silk thread instead of a silver wire since the former is ultimately absorbed and therefore does not require removal. The procedure is simple and would probably suffice in most cases of rectal prolapse of children.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 13, 1907.

The Control of the Lymphatics in Infection of the Extremities.—H. L. Burrell speaks of the usefulness of compression of the lymphatics and modification of the blood stream as a neglected but useful measure and of paramount physical importance in assisting nature to combat destructive poisons. He wishes to warn against making an incision in an acute local infection until nature has established or there exists an adequate resistance in the tissues of the individual against toxemia. When incisions are made in a patient who has no resistance, the mildest infections may become virulent. The author advises the following method of procedure: A local dressing is first placed on the source of the infection, which is usually on the finger or hand. Rolls of oakum are then placed in position over the course of the arteries and are secured lightly in position by a gauze bandage which is applied from the finger-tips to the axilla. Care is now taken to make equable compression from the finger-tips up to the axilla, an attempt being made to control the circulation in the limb by compression of the oakum rolls. The circulation in the limb unquestionably may be controlled by a skillfully applied dressing, for pain and throbbing will soon cease. At the end of eight hours, instead of taking off the bandages and re-applying the dressing, another bandage is superimposed, so that it gathers up the slack of the dressing. This rebandaging is repeated every six to twelve hours for three to five days. Increased pain or increased tenderness in the limb or a marked elevation of temperature indicates that the dressing must be changed. However, as a rule, when the dressing is removed in three to five days, the limb will be found shrunken and wrinkled, the redness will have disappeared, and usually the original area of infection will be found localized, so that a pocket of pus may be incised and evacuated. This same compression treatment may be applied to the lower limb with equal efficiency. In the early stages of an infection, particularly if the lymphatics are conspicuously involved, a compression dressing is of great value in controlling the spread of the infection and in preventing all but a very mild toxemia. The pressure applied is sufficient to control the circulation of the lymph and blood in the extremity but not enough to stop it.

New York Medical Journal, February 15, 1908.

Some Observations on the Removal of Adenoids.—M. J. Ballin gives a general review of the adenoid question and figures the curette which he prefers. His general conclusions are: (1) That the operation can be easily performed without any anesthetic, taking from one to three minutes. (2) That the growth comes away *en masse*, thus leaving no rests behind which are later the source of so-called recurrences. (3) That by examining the growth we can ascertain if a portion of it is still retained, and its location; and in addition we can show the mass to the parents, thus demonstrating the cause of the impaired nasal respiration, and pointing out the necessity of operation. (4) That complete removal leaves no rests behind, which later swell up and become hypertrophied, thereby bringing about symptoms similar to those prior to the operation, or so called recurrences. (5) That by carefully examining the pharynx immediately after operation we remove pending pieces which would otherwise become infected, and lastly, (6) That these pending pieces of tissue are generally the cause of postoperative hemorrhages, and through their breaking down and becoming infected give rise to a secondary suppurating otitis media, with all its sequelæ, to the rigidity of the neck, enlargement of the glands in the neck, nausea, vomiting, general malaise, and a rise in the temperature.

Psychasthenia.—By this term, originally suggested by Janet, J. Collins refers to a disorder characterized by mental, emotional, and physical symptoms made up principally of obsessions or inoperative concepts, fears, doubts, anguish, uncontrollable movements, enfeebled will power and some or all the customary physical symptoms of neurasthenia. He gives a detailed history of one personal case, that of an unmarried woman of 32 years. Concerning her symptoms he notes that they practically fall under three heads. Obsessions, peculiar movements, which she calls uncontrollable, twitchings of different parts of her body, agonizing emotions and manifestations of psychological insufficiency, sentiments of unreality, of somatic strangeness, and of depersonation, and finally diminution of will power. The obsessions are involuntary, automatic, and irresistible. They come into her mind without the slightest warning and take possession of it. The only relation between their occurrence and any outside factor is what has been noted in regard to fatigue. The patient makes her best effort to prevent them or to circumvent their dominant operation, but she accomplishes little in this direction. She realizes how strange and morbid the obsession is and how contrary to her nature and thought the obsessive ideas are, and she is able to discuss them in an impersonal way, but this has no effect upon the tenaciousness of the obsession, nor can she shut it out by effort of will. The various uncontrollable twitching movements, which are to be interpreted as manifestations of psychological operation upon the motor areas of the brain despite the action of the will, seem also to occur much more severely and extensively when she is fatigued or when anything has occurred to lower physical or mental vitality.

Management of Febrile Conditions After Abortion and Labor.—A. Brothers divides such cases into the following classes: 1. Fever due to retention of infected placental débris or blood clots. Irrigation and if necessary the blunt curette. 2. Fever due to pelvic inflammation. As a rule such cases recover after local abdominal refrigeration, prolonged rest in bed, and hot vaginal douches given at short intervals. If there is evidence of local suppuration, wait for "pointing" if possible; laparotomy is sometimes necessary to reach a pus pocket. 3. Fever due to bacteriemia (septicemia). Here the author believes that the treatment of the future will take into consideration the earliest possible removal of the uterus in the hope that the system may still have sufficient resistance to fight off successfully the beginning systemic bacterial invasion. The use of opsonins here as well as of the antistreptococcus serum has not thus far offered particularly promising results. 4. Fever due to general peritonitis. If such a condition shows a tendency to subside rapidly under the use of ice to the abdomen, it may be well to wait in the hope that the process will go on to complete recovery or that pus formations will become localized. On the whole, given a positive diagnosis of puerperal peritonitis with the patient in fair condition, the author thinks that a laparotomy in proper hands offers her a better chance for her life than if nothing is done.

Vaccination in the Far East.—C. S. Braddock, who was formerly the chief medical inspector of the Siamese government, describes the occurrence of smallpox in Siam and calls the attention to its still prevalent ravages in the Eastern countries. Stimulated by the success of the United States in Manila, the Siamese authorities sent a representative to study American methods, and after his return and a long series of experiments an efficient vaccine was finally produced and vaccination of the Siamese was systematically begun. The results were as they always are, most gratifying. In the extension of this work most valuable allies have been found in the American missionaries. The author gives the following superstition of the Siamese people as to the origin of variola. "There is a great giant that lives in the sky and who has seventy-six sons and daughters; each one of these is a variety of (Fidat) smallpox. When the giant sends one of them to earth and he visits the individual, that individual has that variety of smallpox, one of the seventy-six the Siamese divide the disease into."

Journal of the American Medical Association, February 15, 1908.

The Problems of Sanitation.—E. C. Jordan says that up to the present, sanitary measures have affected chiefly the infectious diseases, but it is evident that further information is needed before we can intelligently plan a campaign against disease. Even as regards typhoid fever, which has been so much reduced by sanitation, there are still points to be learned and how much do we really know, he asks, about the best methods of preventing summer mortality among infants in large cities. In England, the infant mortality has not been materially reduced dur-

ing the last twenty-five years though the general death rate has materially decreased. Germany, however, shows a steady reduction and in this country while the data are very incomplete, owing to our imperfect vital statistics, the figures in two large cities, Boston and New York, also shows a progressive decrease. Hygiene is becoming more and more a social question and under this particular head he mentions industrial hygiene, the protection of workers in dangerous or unhealthy occupations and education in public hygiene, as living questions of the day. More men should prepare themselves for public health work and greater facilities should be offered by medical schools in this particular line. The medical profession can itself do much to bring about a proper valuation of the work done in this field.

Pregnancy as a Cause of Dental Disease.—J. E. Power remarks on the neglect of the oral cavity by pregnant women and its consequences, and the necessity of the physician insisting on the proper hygiene of the mouth during pregnancy. In this condition, the natural degenerative processes, together with lessened resistant capacity, may cause complete destruction of the teeth with consequent bad effects not only on the patient's own health, but also on that of her offspring. This is especially a time for her to consult the dentist and insure a normal condition of the teeth, so far as that is possible. It is Power's custom in these cases to make a thorough physical examination of the patient so as to adapt the measures employed to her capacity of enduring the strain incidental in all dental operations; then to extract all broken down roots under local anesthesia, as possible sources of trouble, to clean the mouth thoroughly and make arrangements for future monthly inspections which will enable him to attend to any conditions that may arise and will tend to cause the patient herself to take due care of the teeth, knowing they are going to be inspected. Vomiting of pregnancy, whatever be its cause, has a bad effect on the teeth, and Power advises special care taken to neutralize the acidity of the mouth after each vomiting, and also during the interval. In case of toothache during pregnancy, he advocates the extraction of diseased teeth, treatment of which might be attended with pain sufficient to affect the life of the embryo and possibly also that of the mother in this condition. Under anesthesia, local preferred, and with modern technic, it can be safely done. It is advisable to avoid it at times corresponding to the menstrual period on account of the greater risk then of abortion. Great care should be exercised in diagnosing the source of dental pain, as often disease in other organs may thus manifest itself and treatment or extraction of an apparently aching tooth may complicate rather than simplify the case

Posture and Blood Pressure.—A. A. Sanford reports the results of a study of the effects of posture on the blood pressure, with special reference to the relation of the pressure conditions in the upper and lower portions of the arterial tree in different positions of the body. His methods and instruments are described in detail and his findings summarized substantially as follows: 1. By carefully noting the pulse changes as compression is slowly applied, not only is the point of obliteration noticeable, measuring the systolic pressure in the vessel, but also the point of diminution in the amplitude of the pulse or the diastolic pressure is to be observed; and, furthermore, in many instances, a marked oscillation occurs in the mercury column at and above the point of diastolic pressure. 2. Posture affects both systolic and diastolic pressure There is an increase in the arm in changing from the erect to the sitting, supine and head down positions, and at the same time a corresponding decrease in pressure in the leg. With these is a marked decrease of pulse rate. 3. The pulse pressure, or difference between diastolic and systolic pressures, increases in the arm and decreases in the thigh with changes from the erect to the sitting, supine and Trendelenburg positions. 4. At the heart level. Hs (heart strength) × Hr (heart rate) = a constant in all postures. Therefore, the pressure changes directly as the peripheral resistance. 5. In the sphygmomanometer we have a convenient means of applying a known amount of pressure to a limb, and thus can use it as a therapeutic aid in passive hyperemia treatment. 6. For accurate results the pneumatic arm band should be at least 9 cm. wide. Readings are from 15 mm. to 30 mm. lower than with the ordinary Riva-Rocci 5 cm. girdle. The width of the band should always be recorded

Subconscious Ideas.—E. W. Scripture describes the recently developed methods of discovering the subconscious ideas that influence the mental associations and underlie certain morbid conditions, such as hysteria and some forms of insanity. The method consists in observing the time required for the association of ideas and the character of associations produced. Association of ideas takes time; distraction of attention makes the time longer and also tends to make one forget what he has said. A selected list of words is used and the subject is asked to say quickly the first thing he thinks of when these words are singly called out to him, the object being, it is explained to him, to test his mental activity Each answer and the time it requires is noted and then the process is repeated with the request that the same answers be repeated so far as possible. In the record thus made, we look for associations showing one or more of several indications of distracted attention, namely: 1. Unusually long time; 2. forgetfulness, 3. superficiality (associations other than those connected with the meaning of the word). Jung, who has particularly developed this method, adds to these: 4. Mistakes—no answers; 5. word is taken in some unusual meaning explainable only by the presence of some disturbing thought; 6. persistence of the disturbance for following associations. Experience has shown that when a word brings up an idea associated with an emotion this distracts the person so that he does not pay full attention to what he is doing, and this shows itself in the record in one or other of the above ways, and this often lasts for several following associations. Illustrations of this from actual experiments are given. In this way it is possible for an outsider to discover our disturbing emotions against our will. In a purely medical point of view the most interesting fact of this study is its therapeutic application to hysteria, which is very largely due to emotional strains that leave their impress on the subject's mind. The idea or group of ideas connected with a strong emotion is here called a complex, and if we can discover the complexes causing the patients hysteria and get her to talk freely about them, according to Freud of Vienna, we can in many cases produce a cure. Just how this is effected is not quite clear. We may perhaps assume that the continual hauling of the complex into the limelight deadens it, or that the patient tires of it from repetition, but, however this may be, marked cures are said to be brought about. The use of the method for the detection of crime is also noticed and an instance reported by Jung is given. Although any physician can learn to apply the method, it requires considerable time and skill and accurate time measurements. Eventually, Scripture says, we may expect to have specialists to whom the patient is sent for a mental analysis, but to be returned for treatment.

Polioencephalitis Superior.—W. A. Holden and Joseph Collins remark that while many of the diseases dependent on acute pathological conditions in the gray matter of the central nervous system have been long known to medical literature, that known as polioencephalitis superior, inferior ophthalmoplegia, or superior bulbar paralysis has received recognition only for about a quarter of a century, having been first described by Wernicke in 1881. While his teachings as to its dependence on alcoholic intoxication and its fatal termination were at first generally accepted by the profession, it is now commonly believed that the underlying morbid condition is not unlike those constituting the pathological processes in various other inflammations of the central gray matter, and that the causes that are responsible for such inflammations elsewhere in the central nervous system are responsible for this disease. Alcohol, however, is probably the most important factor, though other intoxications and certain infectious diseases have had a good case made against them. That it is not always fatal has been clearly demonstrated. Mild attacks with complete or partial recovery are not so rare as has been supposed. When the inflammation is confined to the gray matter of the third ventricle, the symptoms are few and as distinctive as in anterior poliomyelitis, but when it extends to the fourth ventricle and beyond, the clinical picture becomes more complex and a satisfactory diagnosis sometimes can hardly be made. In some cases the structural lesions found on postmortem are slight and entirely out of proportion to the severity of the symptoms observed. These cases are looked on as analogous to those of asthenic bulbar paralysis (bulbar paralysis without anatomical foundation) in which it is supposed that several levels of the different segments of the central nervous system are so overwhelmed by some toxic agent as to render them partially or wholly functionless, though not so as to leave discernible evidence in their cells. There may also be intermediate cases with trifling lesions.

Fulminating Pelvic-Abdominal Edema Simulating Tubal Pregnancy.—W. A. Briggs reports two cases, one of them fatal, in which the symptoms justified the diagnosis of ruptured tubal pregnancy, but which proved to be on operation cases of fulminant edema of the pelvic connective tissue. He has been able to find but two similar cases in medical literature (those of Jocet and Le-

gueu), which he reproduces. His conclusions are given as follows: 1. Fulminating pelvic edema may very closely simulate ruptured tubal pregnancy. 2. Absence of subjective and objective signs of pregnancy, of irregular uterine hemorrhage, of decidua in the flow in cases of shock with severe pelvic pain, would suggest the possibility of fulminating pelvic edema. 3. A hemoglobin test might assist in the differential diagnosis. 4. Fulminating pelvic edema is probably angioneurotic in origin. 5. Death (as in Case 2) may result from acute pelvic-abdominal edema. In both his cases, there was a mild inflammatory condition—in the non-fatal case producing agglutination of the peritoneum and roofing in the pelvis, and in the other confined to the right adnexa. The second patient was decidedly neurotic.

The Lancet, February 3, 1908.

Phosphaturia and the Treatment of Disease by Conversion.—R. Harrison notes that it has not infrequently been observed that in chronic urethritis, the urine has become altered in character and assimilated with that known as phosphaturia, the change occurring irrespective of any internal medication, and further that when this change was observed the cessation of the discharge or gleet, as it is commonly called, for which the patient had originally come under treatment, usually soon followed, either spontaneously or by treatment appropriate to the phosphaturic state without apparent reference to the cause which preceded it. This casual observation raised the question whether it was possible that there was any relationship between this incident and what followed, whether, in fact, the phosphaturic state of the excretion was inimical to the existence of the infecting bacillus. The observation was made so frequently as to suggest this, and led to the systematic examination of the urine and other discharges for gonococci in all persons coming under treatment for gleet more carefully and frequently than previously. From them the following conclusions appeared to be grounded. 1. That in a considerable number of instances thus designated and of undoubted specific origin there was no evidence at the time of examination that there was anything wrong with the urine or with any urethral discharge complained of inconsistent with the phosphaturic state alone. This condition was either apparent to the eye on allowing the urine to stand for a short time in a glass vessel or was evidenced by boiling the excretion when any cloudiness which followed was immediately removed by the addition of nitric acid. Here any pus corpuscles which the microscope detected were physically explainable by the crystalline precipitates the urine contained and which were often present in sufficient quantities to give this excretion a semi-purulent or opaque appearance. How or when this phosphaturic transformation took place in the history of an ordinary case of chronic infecting urethritis was not always easy to determine. In many instances which were carefully tested and microscopically examined this change appeared to mark the concluding stage of gonococcal life and was also often coincident or nearly so with the adoption of such treatment as the phosphaturic state usually requires. Further, these examinations showed how easily and frequently phosphaturia may counterfeit and be treated for a specific urethritis and even be intensified by the remedies commonly used for the latter. 2. The second inference was that the artificial production and temporary continuance of a state of phosphaturia might be utilized in the treatment of specific gleety affections following upon gonococcal infections. To produce a urine having the prominent features of phosphaturia by the administration of alkalies—bicarbonate of potassium was generally selected for this purpose—is not a matter of much difficulty or of any detriment to the patient. The effect on the urine should be sufficient to render it responsive to the usual tests, microscopical and otherwise, by which phosphaturia is recognized, and not merely to produce an alkaline reaction to test paper. Further, it is necessary to maintain this condition for some little time, during which period all local applications should be suspended. It will usually be found after a period of ten days or so, and as the phosphaturic condition gradually passes off under the influence of altered treatment and diet appropriate to this state, that no signs will be found such as were previously complained of.

Hemo-Pericardium Associated with Syphilis.—J. L. Baskin reports the case of a man of 65 years of age who was partly demented. There were various stigmata of syphilis in different parts of the body. He did well on anti-syphilitic treatment, but on a certain evening while at the toilet he became giddy and fainted, and though he rallied for awhile he died in about half an hour. Among the lesions found at the autopsy was an enlarged heart weighing 11 ounces. The pericardium was distended with post-mortem clot. The coronary arteries were calcareous in character; the left one was ruptured one and a half inches from the aorta; at the seat of rupture was a small node of pale yellowish colored material which extended about one and one-fourth inches into the myocardial substance, which was hypertrophied, and around it the tissue was of fibrous consistency and tough under the knife. On the pericardial aspect the necrotic changes appeared to have involved the artery which lay on the gumma; the arterial wall, where ruptured, presented a star-shaped fissure. The aortic valve was thickened at the base of each cusp; the columnæ carneæ showed signs of fatty degeneration. The liver was congested. The author notes that signs of marked distention of the pericardial sac were found. At the time of the patient's collapse gentle percussion revealed dullness extending up into the second left intercostal space; the cardiac sounds were muffled and the respirations were stertorous in character; the pulse was imperceptible at the wrist. When found in the heart gummata are usually multiple and often of cartilaginous-like consistency; only the one described was found in this case. Reference is made to several similar cases which are recorded in medical literature.

Acute Ascending Paralysis with Recovery.—The patient of C. W. Vining was a muscular man of 24 years whose symptoms began four days before admission to hospital, with weakness in the calves of his legs. This progressed and later extended to his arms. He had fallen off a ladder on to his feet a week previously but had experienced no inconvenience at the time. From the time of his admission his symptoms developed in a typical manner. The case had run its course by the end of three weeks. The interest in the case centers in the fact of recovery from what appeared to be a severe instance of Landry's paralysis. The diagnosis lay between (1) diphtheritic paralysis, (2) Landry's paralysis, and (3) a toxic paralysis affecting the anterior cornua or nerves. There was, however, no evidence or history either of diphtheria or of any exposure to such toxic influences as syphilis, gonorrhea, lead, or alcohol, and on the whole the case seemed to correspond better with Landry's acute ascending paralysis than with any other disease. Against this diagnosis there might be urged (1) the anesthesia of the palate and the slight sensory disturbance of the legs, and (2) the fact that the parts affected were not altogether anatomically in succession from below upwards, but in Landry's own description of the condition diminution in cutaneous sensibility over the distal parts of the limbs is mentioned and the arms and face were affected before the legs were completely paralyzed. In the present case strychnine appeared to have a very beneficial effect.

British Medical Journal, February 8, 1908.

Migraine.—A general consideration of the subject is given by T. H. B. Dobson. Concerning treatment he says that it all hinges on the matter of lessening the tendency to explosive action in the nerve centers. Of obvious value are sufficient sleep, nutritious food (over-eating being most carefully avoided), prevention of intestinal fermentation and regular exercise. Common immediate exciting causes are gastric disturbance, constipation, and eyestrain, each of which suggests its own proper correction. Concerning the relation of migraine to epilepsy, the author lays down the following propositions: (1) In rare cases migraine alternates with epilepsy. (2) Migraine may develop into epilepsy. (3) The tingling sensation, which may come on in the finger and gradually pass up the hand and arm during the twenty minutes in which the fortification figures are developing in migraine, may also occur as an aura of epilepsy; but in this case it is only momentary. (4) Headache follows both; that of migraine being more severe. (5) The aura of migraine seldom affects a leg or the trunk. (6) Somnolence may occur in both.

Spleno-Medullary Leukemia and Splenic Anemia (Banti's Disease).—Histories of cases of these two affections are given by J. G. Taylor together with detailed blood findings which cannot be reproduced here. The case of spleno-medullary leukemia occurred in a woman who when first seen had complained for five months of increasing weakness, shortness of breath, and gradual swelling of the abdomen. Three or four times recently she had had "bruises" occurring spontaneously on her legs. She was anemic-looking, but with a flush over the malar bones. Physical examination revealed an enormously enlarged spleen, extending as far as the middle-line, and well below the umbilicus. There was no tenderness on pressure, or when lying down, but when standing or walking she complained of a dragging sensation. The other abdominal and the thoracic organs revealed nothing abnormal. The fundus of the eyes was normal. She had never had any hemorrhages except the spontaneous "bruising." She had no ascites, though this occasionally

occurs in spleno-medullary leukemia. This patient did well on arsenic and *x*-rays applied over the spleen. The effect of the former was definite and positive, but that of the latter doubtful. The case of splenic anemia was that of a man of thirty years who had complained of feeling unwell, but nothing definite, for three years or so, on and off. The onset was vague. Previously he had been a healthy man. At times he had had nose bleeding and a few attacks of hematemesis. Three weeks previously he had been tapped for ascites, not for the first time. Physical examination revealed a spleen which extended just below the umbilicus. Nothing abnormal could be detected in any other organ. The author discusses fully the questions of etiology, pathology, and symptomatology of this affection. As to treatment little is known. Most of the deaths in which splenectomy has been tried have been from hemorrhage.

The Use of Chemicals in Aseptic Surgery.—C. B. Lockwood notes that attempts are being made at the present time to conduct surgery without chemicals. He concedes that they may be harmful, but does not believe that we could get along without them. The great aim of every surgeon is to banish bacteria from the field of operation and from everything brought in contact therewith. While chemicals may not always sterilize the hands, they often do. Lockwood uses for the hands the 1-500 in spirit and biniodide of mercury lotion. Inexperienced assistants should wear rubber gloves, but he himself finds that they interfere with delicacy of touch, especially in cases of abdominal surgery presenting adhesions which have to be overcome. The use of gloves is under no circumstances a justification for the lessening of hand disinfection. They are however indispensable for septic operations and septic dressings. The same general principles apply to cleansing the patient's skin. There are in addition other sources of wound infection. The air of our cities, dwellings, and hospitals has in it bacteria from the skin and air-passages of human beings and from the alimentary tracts of men and animals. If during an operation any bystander coughs or sneezes it is safe to assume that the wound is bombarded with bacteria. All the paraphernalia of modern surgery must be worked by erring men and erring women, but the author knows of no better method of minimizing the inevitable dangers than by the present general methods of chemical solutions applied in the right way, at the right time, and in the right place.

Rigor Mortis in the Stillborn.—Four cases are reported by C. H. Watts Parkinson, whose conclusions follow: (1) Rigor mortis may set in under certain conditions before labor, and may pass off while the child is still *in utero*, and possibly may delay the birth in these cases until it has passed away. (2) Rigor mortis may set in when the child dies during labor, and may either be complete before or may go on to completeness after birth, and in these cases increases the difficulty of expulsion. (3) A child may die during labor and be expelled before rigor mortis can set in, but rigor mortis may supervene after birth more or less completely. (4) The attitude produced by rigor mortis in stillborn children differs from that produced by cadaveric rigidity under ordinary circumstances and by its character enables an opinion to be given that the child had no separate existence, for in every such case the limbs and body generally become drawn into the position in which it lies normally in the mother's womb. Rigor moritis *per se* is not a sign of live birth, but its character enables one to decide whether or not the child was stillborn.

Berliner klinische Wochenschrift, February 3, 1908.

The Surgical Treatment of Chronic Dysentery.—Steiner describes two cases of very severe and long standing dysentery which proved refractory to all medical treatment and were finally relieved by the formation of an artificial anus at the ileocecal junction. This was made in such a way as to cause all the feces to be discharged through the opening without entering the colon. At the same time copious daily irrigations of the intestine from the rectum to the cecal opening were practised, five or six liters of water being run through and then one or two liters of an astringent antiseptic solution. In one case these irrigations were kept up for seven and one-half months and in the other, for two months. After it had seemed probable that all the ulcers had been healed, and that the large intestine had been brought back to a normal condition, the capacity of the gut to stand the passage of feces was tested by plugging the artificial anus and returning the fecal current to its natural channel. After sufficient time had elapsed to show that the colon was again capable of performing its functions the artificial anus was closed by operation. In each case the cure has been a permanent one. The author prefers this method to that of making the artificial anus in the left flank as this does not permit the entire colon to be treated, and to the method of appendicostomy, as this does not cause the feces to be discharged externally and so afford the necessary rest to the colon.

Münchener medizinische Wochenschrift, February 4, 1908.

A Diagnostic Skin Reaction With a Tuberculin Ointment.—Moro has found that a specific reaction may be induced in tuberculous subjects by means of inunction with an ointment containing tuberculin. For this purpose he uses an ointment of anhydrous lanolin containing 50 per cent. of old tuberculin. When kept in the ice box the preparation retains its efficiency for months, and 10 g. is sufficient for about one hundred tests. The application is made to the skin of the abdomen just below the end of the sternum, or if this is not free from cutaneous lesions the neighborhood of the nipple is used. A portion of the ointment the size of a pea is rubbed in with the finger, using moderate pressure for a half to one minute. The area treated measures about five centimeters in diameter. The skin is left uncovered for about ten minutes but no dressing is applied. In negative cases the skin showed no reaction but in others a positive result was manifested by the appearance of an eruption of papules at the site of inunction. Three grades of this are distinguished. (1) A weak reaction in which from two to ten solitary, small, pale papules appear in twenty-four to forty-eight hours and vanish again in a few days. (2) Medium reaction, in which in the course of the first twenty-four hours up to one hundred or more miliary or larger red papules which may measure three millimeters in diameter appear. The skin in the neighborhood is moderately reddened but the eruption is confined to the site of inunction, itches slightly, remains unchanged for several days, and then slowly fades. (3) Strong reaction, shown by the appearance within a few hours of very numerous red papules with inflammatory base and accompanied by itching. There is exudation into some of these lesions which may measure five to eight millimeters in diameter; the eruption is not confined to the site of inunction but extends to the surrounding parts. In a few days the papules dry up and become scaly and in two weeks nothing is to be seen except a brownish pigmentation of the skin. None of the forms of reaction is accompanied by general symptoms or elevation of temperature. The author believes that the reaction is strictly specific though somewhat less sensitive than the von Pirquet cutaneous reaction or the ophthalmo-reaction. Its value as a diagnostic measure must be determined by further observations in a large series of cases. The method has the great advantage of being entirely harmless, even the itching at the site of inunction being a comparatively rare occurrence.

Artificial Respiration by Ventilation of the Trachea.—Volhard has found that it is possible to keep alive curarized animals in whom all respiratory motion has ceased by allowing a stream of oxygen to flow into the trachea through a tube which does not fit quite tightly. The animals live for one and a half to two hours without any movement of the chest wall, but then regularly die. This result is due to CO_2 poisoning although the blood remains bright red in color, the diffusion of gases in the bronchi not being sufficiently active to eliminate all of the CO_2 given off though the interchange does go on to some extent, as is shown by the fact that the animals live one and a half to two hours. Volhard has devised an apparatus by means of which this method can be practically applied, a rhythmical distention and collapse of the lung being secured by the use of the principle of the inertia of mercury. This device has been tried on a human being with good success. The patient suddenly ceased to breathe while being operated on for a cerebral abscess and after three hours of ordinary artificial respiration Volhard's apparatus was set in operation and functionated satisfactorily during nine hours more, at the end of which time the patient died as the result of the extensive softening in the region of the brain abscess.

Cleaning Instruments.—To remove coating from instruments which have been boiled use of prepared chalk, ammonia, and alcohol each 2 parts, water 4 parts. Rub the instruments with a cloth saturated with this solution, then rub them dry with another cloth.—*Dental Cosmos.*

Gonorrhea in Women.—Cases of concealed gonorrhea in women may be detected by pressing the anterior wall of the vagina against the urethra. This will empty the urethral (Skene's) tubules and bring to light a very small quantity of pus which is gonorrheal.—*American Journal of Dermatology.*

Book Reviews.

Traité Clinique et Thérapeutique des Maladies de l'Appareil Respiratoire. Par G. Carrière, Professeur agrégé a l'Université de Lille; Chargé des Cours de Clinique Médicale des Enfants et de Thérapeutique; Lauréat de l'Académie de Médecine. Deuxième édition, revue et augmentée. Paris: Vigot Frères, 1908.

The author has limited his subject to the clinical pictures and the therapeutics of the diseases of the respiratory tract. Taking full advantage of the space thus gained, he enters fully into the etiological factors of each disease; gives well balanced descriptions of the clinical phenomena, describing them from the standpoint of the observer at the bedside, rather than of the laboratory or the scientific worker; the necessary pathological and bacteriological data he gives briefly, putting them, with a few historical notes on each disease, in smaller print than that of the main body of the work. He allots ample space to the subject of prophylaxis, and under treatment he attempts in every case to formulate the indications and the results aimed at. All together, the author has succeeded in writing a very practical statement of the symptomatology, the diagnosis, the prophylaxis, and the treatment of the diseases of the respiratory system, in the easy, conversational style of the lecture. This second edition, moreover, shows careful attempt to bring the book up to date; for instance, both the cuti-reaction of von Pirquet and the ophthalmo-reaction of Calmette are given considerable space.

There are, however, some obvious faults in the book, and one of them is the complimentary use of personal names in the description of the clinical phenomena. Such designations as "Freud's sign," "Grancher's sign," "Frenet triad," etc., only burden the mind of the reader with unnecessary and unassociated names. The anatomists are struggling hard in reforming the illogical nomenclature that has resulted from a similar practice, and writers in other medical fields ought not, at least, to add further to the chaos in their own departments. Under treatment it is surprising that the use of tuberculin in pulmonary tuberculosis is not even mentioned. Few American physicians, too, would share the very conservative attitude of the author toward thoracocentesis in pleurisy with effusion; he recommends tapping the chest not before ten days after the appearance of the effusion. The operation has proved to be so little dangerous, and so directly curative, that waiting for a possible spontaneous absorption of the fluid, in the absence of any contraindications to the tapping, can hardly be defended. Finally, the book before us, in common with many others issued in Europe, lacks an index, nor is the table of contents such as to make up for its absence.

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital; Lecturer on Surgery in the Harvard University Medical School. Sixth edition, thoroughly revised and enlarged. Philadelphia and London: W. B. Saunders Company, 1907.

The continued popularity of Dr. Scudder's book may be gathered from the fact that two reprints and six new editions have been required in six years. The present edition, among the new matter, considers the fractures of the skull met with in obstetric practice and the remote results following trauma of the head; the arguments for and against operative procedures in the fractures of the patella, of the spine and of the hip are given at length; pathological fractures are discussed in a separate chapter. Dr. Codman's suggestive article on "The Röntgen Ray and Its Relations to Fractures" has been retained, and the book closes with the consideration of a few dislocations. Many new illustrations have been added, raising the total number to 856 photographs, *x*-ray pictures, and diagrams. The book retains its place among the foremost treatises on its subject in the English language.

Tropical Diseases: A Manual of Diseases of Warm Climates. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. Aberd., Fellow of the Royal College of Physicians, London; Fellow of the Royal Society; Honorary D.Sc. Oxon.; Lecturer in the London School of Tropical Medicine; Physician to the Seamen's Hospital Society, etc. Fourth edition. New York: William Wood and Company, 1907.

Ten years ago a new edition of a work on tropical medicine would have aroused little interest in this country where the diseases of hot climates were encountered only along the southern borders of the United States and in the principal seaports. Now, however, that we have assumed "the white man's burden," the subject is of practical interest not only to those practising in our tropical possessions, but to every physician in the country who is likely to meet examples of such maladies in the person of some discharged and invalided soldier or of some returning visitor from the Philippines or from the West India Islands. Manson's book from the first took its place as an authoritative work on the diseases of hot climates, and the succeeding editions have established it more firmly as a classic. The present edition is considerably enlarged in order to keep pace with the rapid advance in our knowledge of these most interesting diseases, the principal changes and additions being in the section dealing with the fevers. Perhaps the most striking change to be found in this edition is the placing of blackwater fever in a separate nosological niche apart from malaria. Whether this is justifiable or not is questionable; the association of malaria and hematuria is so firmly fixed in the minds of tropical practitioners that this violent separation of the two will be regarded as premature if not unwarranted. The subject of trypanosomiasis has been entirely rewritten, and sleeping sickness has been transferred to this section, the previous speculation as to its causation having been shown to be erroneous. The section on animal parasites has also been enlarged and revised, and an appendix dealing with the hemoprotozoa has been added. This includes a useful, though tentative, classification of the protozoa by Sambon. The work is freely illustrated with 241 figures in the text and 7 colored plates. The book is convenient in size, well printed, and free from typographical errors. It is without a rival in its special field and can be confidently recommended to every one who through necessity or choice would familiarize himself with the diseases peculiar to the tropics.

Cancer of the Womb; Its Symptoms, Diagnosis, Prognosis, and Treatment. By Frederick John McCann, M.D. (Edin.), F.R.C.S. (Eng.), M.R.C.P. (Lond.), Physician to In-Patients, Samaritan Free Hospital for Women, London; Lecturer on Gynecology, Medical Graduates' College and Polyclinic, London; Honorary President Section of Obstetrics and Gynecology, Fifteenth International Medical Congress, Lisbon, 1906. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1907.

In this book the author gives a concise account of our present knowledge of cancer. He describes fully both the macroscopical and microscopical appearances of the different varieties of cancer, illustrating his text by forty-six plates. In discussing the etiology of cancer, the author says that the trend of modern opinion is against the parasitic theory. He divides cancer of the uterus into cancer of the neck and of the body, and subdivides cancer of the cervix into one originating from the vaginal portion and the other originating from the cervix proper.

The operations of vaginal hysterectomy, abdominal hysterectomy, the combined abdominal and vaginal hysterectomy and the extended or radical abdominal operation are described in detail. Space is also devoted to the post-operative treatment, and to the treatment of inoperable uterine cancers.

In considering the diagnosis of cancer, due stress is laid upon the occurrence of hemorrhage and a serosanguineous discharge. In speaking of the symptoms of pain and a foul-smelling discharge, Dr. McCann says that it cannot be too widely known that pain and foul-smelling discharge, both of which were formerly relied on as important diagnostic aids, are met with only in the later stages of the disease, frequently, indeed, when its extent is beyond any hope of eradication by surgical methods.

The book is well written, thoroughly up to date, and an able and authoritative presentation of what is yet known of this still most obscure subject.

The Treatment of Disease in Children. By S. A. Sutherland, M.D., F.R.C.P., Physician to Paddington Green Children's Hospital, to the Northwest London Hospital ,and to the City Orthopedic Hospital; Late President, Section for Diseases of Children, British Medical Association. Second impression. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1907.

The work under consideration deals with the diseases and ailments peculiar to children. Such general infections, usually considered as children's diseases, like the acute exanthemata are, however, not included. The arrangement of the book is the usual one, dealing at first with the feeding of infants and children in health and then passing on to the diseases of diet, rickets, and scurvy. Following these separate chapters are accorded the alimentary tract, respiratory system, cardiovascular, nervous, and genito-urinary systems. The concluding parts deal with Syphilis, Tuberculosis and Rheumatism. A short pharmacopœia and index complete the volume.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held January 31, 1908.

THE PRESIDENT, DR. J. RIDDLE GOFFE, IN THE CHAIR.

Address of the Retiring President.—Dr. WALTER LESTER CARR, after thanking the officers and the members of the various committees for the loyal co-operation and their support, said that as the Society had a membership of over twenty-one hundred, its business could not always be conducted in open meeting without unnecessary publicity and a belittling of the important objects for which it was formed. He was thankful that the two special meetings had upheld the authority of the Comitia Minora. The paid membership at the end of 1907 was 2,134, a gain of 34 for the year. Calculating this as a regular growth, the Society should have in a few years a membership of over 2,500 without special canvassing or coalition with other medical bodies. All reputable medical men in this county should be members. The greatest effort during the past year had been in the passage of the medical practice bill, now a law, and in opposition to the optometry bill. This latter bill was vetoed by the Governor after it had passed both houses. The imprisonment of a woman who conducted a house where abortions were habitually performed for maintaining a public nuisance had given the law officers of this Society a most important judicial ruling, as the precedent established should make it almost impossible for professional abortionists to continue their death-dealing trade. They had had a favorable decision in the Woodbury case, when the Court decided that a corporation could not practise medicine nor advertise. One of the many important sections of the new medical law prevented the advertising quack from hiding himself behind the name of an institution.

Address of the President-Elect.—Dr. J. RIDDLE GOFFE, in his address, said that the results of the amalgamation of the State organizations and the county societies and associations showed that personal animosities had vanished like dew before the morning sun; that no Achilles had skulked in his tent and no combination along old lines of cleavage had shown its head as a stumbling block in the way. He was not unmindful of the great honor they had conferred upon him, and he accepted it not only with grateful heart, but with a full appreciation of the obligation of service the position imposed. He knew they had a splendid system of organization, the machinery of which responded to the requirements of their home Society and also found a ready instrument for defensive or aggressive action at Albany. By means of the medical directory and the State journal the organization had been made compact. Organization in their ranks was the demand of the hour. "To cease to fear our fellows and learn to depend upon them, to do away with competition and build up co-operation is our one necessity." This he felt the members were learning more and more every day and putting into practice. Their percentage of membership, based on the whole number of practising physicians in the county was far below that of most of the counties. Those who were worthy should become members both to benefit the Society and to be benefited by it. The greatest good to the greatest number was the shibboleth of the Society. He had taken the responsibility of appointing a special committee, whose duty would be to select and solicit new members. With the cordial co-operation of each and every member of the Society he felt confident that the year 1908 would mark time with the most advanced progress of thought and endeavor and be reckoned with the successful years of this time-honored body.

The Life and Times of the Great Medical Reformer, Thomas Wakley, M.D., Founder of the London "Lancet."—Dr. J. RIDDLE GOFFE gave a very interesting address on the life of this man and of the times in which he worked.

The balance of the evening was devoted to a symposium on the recent epidemic of grippe.

The Scourge as It Appeared in Pittsburg.—Dr. JOHN A. LICHTY of Pittsburg presented this paper, which was read by the Secretary. He said that the epidemic of influenza which was at present prevailing in the city of Pittsburg began at the end of the second week of December and was, at the time the paper was written (January 20), slowly subsiding. Only occasionally new cases were now reported. The epidemic was widespread, though probably not so severe as in the noted pandemics of 1889 and 1890. Whole families, including servants and all associated with the household, were afflicted in rapid succession. The onset was sudden and severe, the usual symptoms of "pain all over" being most pronounced. The temperature did not usually go high, nor did it seem to be in accord with the severity of the symptoms when the patient took to his bed. In typical cases, where proper treatment was promptly established, the attack was unusually short, lasting from two, three, or four days. When treatment was neglected the symptoms dragged through one or two weeks. With proper care very few cases had any complications, and most of them were up in a few days with the usual languor and stiffness. Peculiar to this epidemic seemed to be the general complaint of sore throat. Upon examination the throat rarely showed other evidence of an abnormal condition than a rather dark cyanotic blush, which was most intense over the tonsils and faded out over the roof of the mouth. This was rarely associated with any swelling or edema. Another peculiarity which seemed to mark this epidemic was the frequency of involvement of that portion of the nasal cavity which was immediately between the eyes. The pain here was usually intense, and it seemed that many of the complications were due to the inflammation of this portion of the nasal mucous membrane. The complications most frequent seemed to be due to an extension from the nasal cavity into the frontal sinus, into the ethmoidal cells, into the antrum, and through the Eustachian tube into the middle ear. Otitis media and, in neglected cases, mastoid disease, were not infrequent. Such complications as pneumonia, nephritis, and gastrointestinal disturbances were not markedly prevalent; especially was this true of the last. The present epidemic was too recent to enable one to give an opinion upon the frequency or non-frequency of complications of the nervous system. As usual, chronic invalids and such as were suffering from nephritis, diabetes, valvular heart disease or certain pulmonary diseases very quickly fell victims and usually succumbed. For a time, and early in the epidemic, those physicians who were frequently exposed to the disease fell victims. Every evidence was present to show that the disease was highly contagious.

The Grippe in Baltimore.—Dr. G. HAMPSON JONES, Assistant Commissioner of Health of Baltimore, presented this paper, which was read by the Secretary. The Board of Health has not officially obtained much definite information regarding the amount or the character of the grippe pure and simple as it had existed in Baltimore. He, therefore, must give only that which he had obtained in his own practice and through conversations held with physicians of large practice and good power of observation. The grippe this year had not been violent in the symptoms produced, but their death rate had been considerably increased by the complications or sequelæ of grippe, principally pneumonia. The first manifestations of the grippe were headache, backache, limbache, with a slight elevation of temperature, seldom more than 102°; catarrhal symptoms developed secondarily and were not so prominent a feature as in former epidemics, when the attack was usually

ushered in "by cold in the head and coughing." He had found that the secondary catarrhal or respiratory tract affections were characterized more by an irritating cough than by the amount of discharge; or, in other words, the cough was due more to irritation of the terminal nerves than to the accumulation of mucus. Some few patients manifested gastric disturbances prominently, so much so that in one case the gastric symptoms were almost all that the patient complained about. These gastric symptoms consisted of vomiting, which came on suddenly and unexpectedly several times during the day, which was almost lik that of the vomiting of seasickness. The patient would feel perfectly well when nausea would suddenly develop and be almost immediately relieved by vomiting. The patient felt well then until the next attack, which would be in a few hours. One particular case was in a patient who did not suffer with gastric disturbances as a rule, and who got well in three or four days after the first attack. He found that patients could be partially relieved by proper treatment, but that the attack was seldom over in less than two weeks. He regretted that he could not give exact statistics, but, unfortunately, these cases were not reported except in death certificates. He was sure of the statement that the infection had been more extensive than at any period since 1895.

The Course of Grippe in New York.—Dr. Thomas Darlington presented this communication. He said this was the severest epidemic since 1901. The deaths from this cause had jumped from 9 to 42 and the record reached its culmination in December last, when 68 deaths were recorded. and then there was a gradual diminution in the number until 43 deaths from this cause were recorded for the week just past. The deaths reported as being attributable to this cause did not represent the real harvest. Its periodicity was shown in the early spring or winter. The greatest number of cases occurred between the ages of 25 and 85, and the greatest number of deaths at 65 years of age and over. Atmospheric influence was not a factor.

The General Features and Peculiar Manifestations.—Dr. Alexander Lambert said that this was of all diseases characterized by the intense degree of depression of both the nervous and mental system in proportion to the physical manifestations of the disease. There was an intense exhaustion and depression which came on even with what was apparently a mild attack. Thus it would prove a dangerous factor in cases of chronic tuberculosis, cardiac diseases, etc. Grippe was divided into the general pulmonary group and the intestinal group. In the one they saw cases of high temperature, with break bone symptoms, with or without delirium. This year the pain and neuralgic symptoms were marked. The pulmonary group were very prone to bronchitis. It was like a form of bronchorrhea. In the present epidemic the intestinal group predominated. The symptoms were more severe since 1891, but they were of rather shorter duration and presented a protean picture, not so marked.

The Grip in Children.—Dr. Charles Gilmore Kerley said there was no doubt but that the presence, or better, the effects of the grippe bacillus upon different structures, made them particularly susceptible to other microorganisms, such as the pneumococcus and the streptococcus. In the treatment of an uncomplicated case the child should be put to bed, given a laxative, and a reduced diet ordered. For children under three years of age one-half to one drop of tincture of aconite with two to five drops of spirits of nitre was given at two-hour intervals. For older children one grain of phenacetine in combination with two to three grains of salicylate of soda or aspirin was given at two-hour intervals when awake. In grippe rhinitis, a combination of camphor, belladonna, Dover's powder, and aspirin was usually given. The local treatment should be of a non-irritating character. If the angina was particularly severe, a spray of peroxide of hydrogen, one-fourth strength, was used. In cases of cervical adenitis, cold compresses should be kept on. The persistent tracheal cough was best controlled by sedatives. A combination of bromide and antipyrin or codeine or Dover's powder was given in sufficient doses to control the cough in a measure. If there was a bronchitis involving the smaller tubes, sedatives should be given sparingly. In grippe bronchitis he thought he got better results when he used creosote. In cases of tracheitis he used inhalations of moist air. Pneumonia in children with grippe was usually of the bronchial type, but presented no unusual requirements as to management. The digestive disturbances differed but little from those occurring in other infectious diseases. Inspection of the ear should be practised daily. Aurists and pediatricians frequently saw cases of middle-ear disease with mastoid, sinus or bulb involvement in which the aural inspection had been neglected, usually because of the absence of pain on pressure. One of the peculiar features of the present epidemic had been the insidious onset, the apparent prodromal stage with lassitude and temperature from 100° to 101° F. for two, three, or four days, when suddenly the process would become active with high temperature, prostration, and the complications. After grippe a tonic was generally indicated.

Some Throat and Sinus Complications.—Dr. C. G. Coakley said that the pathological changes in the mucous membrane of the pharynx, larynx, and trachea were not so severe as those occurring in similar epidemics of former years. Notwithstanding this fact, the inflammation and symptoms therefrom had persisted much longer than the pathological changes would seem to warrant. This could only be accounted for by the extreme bodily depression and lack of recuperative power. The most troublesome symptom in relation to the throat was a spasmodic, irritable cough, accompanied by only a small amount of glairy mucoid expectoration. In the pharynx there was the usual tendency to hypertrophy of the lymphoid tissue on the posterior wall behind the pillars of the fauces. In the larynx the most marked change had been a hyperemia and swelling of the inner ends of the aryepiglottic folds. The mucous membrane of the trachea had been but moderately inflamed, and in many cases the vocal cords were scarcely at all involved. As a large part of the cough was the result of the excessive irritability of the nerve endings in the inflamed mucous membrane of the pharynx and larynx produced by the frequent trauma of the paroxysms of cough, the most satisfactory treatment was found to be the administration of sedatives to reduce to a minimum the useless portion of the cough. Codeine, morphine, and heroin were the most valuable drugs for this purpose, but each had its objectionable features. Inhalation of sprays containing menthol in an oily vehicle had given temporary relief, but required to be repeated every two or three hours. He wished to emphasize the importance of the general practitioner differentiating between true neuralgias and the so-called neuralgia accompanied diseases of the accessory sinuses. The pain from sinus disease was often mitigated or absent at night, returning in the morning soon after rising and lasting with varying intensity until the middle of the afternoon, when it frequently disappeared. The headache might be bilateral when the sinuses on each side were involved, or unilateral when only one side was implicated. The point at which the greatest pain was described was not necessarily an indication of the sinus that was involved. Pressure over the anterior surface of the antrum, just below the inner canthus, was observed in many cases of antral disease. Pain on pressure on the under surface of the frontal bone, just above the inner canthus and internal to the supraorbital notch, was usually indicative of involvement of the frontal sinus. Deep-seated pain at the back of the orbit which was intensified on moderate use of the eye, and sometimes accompanied by indistinctness of vision,

often accompanied involvement of the posterior group of ethmoidal cells and the sphenoidal sinuses. If the practitioner would investigate the nasal cavities of all patients suffering from neuralgia, and having considerable mucopurulent discharge from the nasal cavities, either anteriorly or posteriorly, he was sure that he would be surprised to find the number of times these accessory cavities were filled with retained secretion. The treatment of the milder cases of sinus disease consisted in keeping the mucous membrane of the nasal cavities contracted so far as was possible with a 1-10,000 solution of adrenalin and, if necessary, judicious spraying of the nose with a 1 per cent. solution of cocaine by the physician or trained nurse. If the discharge was not greatly diminished in the course of a few days and the neuralgia persisted, then the nose should be thoroughly investigated, obstructions to drainage removed, and the cavities themselves irrigated with normal saline solution.

The Ear Complications.—Dr. Edward B. Dench said that an acute otitis media, complicating grippe, was usually characterized by the sudden onset and the severity of the pain. In some cases, especially in children, this pain was not so characteristic. The temperature often rose to 104 or 105° at the beginning of an attack, and remained high until the local condition was relieved by free drainage. A few winters ago extension of the middle-ear inflammation to the mastoid seemed to be the rule; in the epidemic of this year it occurred in but a limited number of cases. When the tympanic effusion was evacuated by free incision in the drum membrane within the first twenty-four hours of the onset, mastoid complications seldom occurred. In most of the cases of acute otitis complicating grippe, the mastoid tenderness developed exceedingly early, particularly tip tenderness. This tenderness usually passed away at the end of two or three days after the drum membrane had been freely incised. It was unwise to wait until there was a large amount of effusion in the tympanic cavity before performing this little operation of incising the drum membrane. The sooner the membrane was incised, the more rapid would be the recovery, while extension to the mastoid would be almost certainly prevented. After incision he used frequent irrigation of the external auditory canal with a solution of bichloride of mercury, 1-10,000, every two hours during the day and four hours during the night, while the discharge was profuse. The intervals were gradually prolonged as the discharge diminished. Between irrigations the canal should be kept lightly occluded with a pledget of cotton to prevent infection of the discharge in the canal. When the temperature in infants and young children in cases of grippe could not be explained, examine the ears, and in many cases an acute otitis would be found, although the child gave no evidence of pain in the ear. When the aural inflammation had extended to the mastoid, it was wise to operate very early. When once invaded the expectant treatment was absolutely useless. Operate at once; open the mastoid and thoroughly ablate the pneumatic structure and so avoid serious intracranial complications. In severe cases of grippe otitis, he believed that the mastoid and middle-ear involvement was simultaneous in many cases. If the temperature did not fall after incision of the drum membrane, if no visceral lesions were present, and if the temperature still remained high, the surgeon was warranted in opening the mastoid.

Resolutions.—The following resolutions were offered and passed:

Resolved, by the Medical Society of the County of New York: We desire to go on record as opposing Assembly Bill No. 268, being an act to amend the medical law of this State for these reasons: The Legislature at its last session enacted a law which placed a common requirement on all who desired to practise medicine in this State. This law grants exemption to all osteopaths who were practising in this State at the time of its passage, who were qualified according to osteopathic standards. The bill in question seeks to throw open the gates to all other osteopathic graduates, regardless of their qualifications. Also, that it is an unjust discrimination against graduates of medical colleges in this and other States who have to pass the Regents' examination before receiving the license to practise in this State. We believe this bill to be a type of class legislation directly contrary to the spirit of the constitution of the State.

Resolved, That the Committee be authorized to co-operate with the State Committee on Legislation in forwarding a copy of these resolutions to the proper authorities.

Respectfully submitted. Dr. E. Eliot Harris, Chairman, Committee on Legislation.

The following resolution was also offered, seconded, and passed:

That it is the unanimous opinion of the members of this Society that the unrestricted performance by qualified men of scientific experiments upon animals is essential to the maintenance and progress of the Science and Art of Medicine, and that the present laws of this State relating to this subject have proved adequate and satisfactory.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, Held on January 20, 1908.

The President, Dr. Thomas E. Satterthwaite in the Chair.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. Robert T. Morris; *Corresponding and Statistical Secretary*, Dr. Frank C. Raynor of Brooklyn; *Treasurer*, Dr. A. Ernest Gallant; *Chairman for the Borough of Brooklyn*, Dr. J. Scott Wood.

Ureteral Catheterization.—Dr. F. Tilden Brown, after expressing his gratification over the increasing appreciation shown by the profession at large for the accurate diagnosis of urinary disorders and abnormalities, which was afforded only by this differentiating practice, proceeded to give a demonstration of his combined cystoscopic and radiographic table, as well as one connected with the development of the cystoscope since Nitze and Leiter first made their presentation in 1879. The speaker said that since 1894, when, after a successful and comparatively easy application of the unappreciated Brenner catheter cystoscope in a case of urinary tract tuberculosis, where the result served to decide an all-important question as to surgical interference, he became interested in testing the relative merits of the different catheterizing instruments existing at that period, and he was satisfied that for this purpose, in general, the direct-vision cystoscope was possessed of more advantage and fewer disadvantages than was the prismatic or indirect type. Hence his adoption of the Brenner pattern for his first efforts in the development of the cystoscope. Dr. Brown's remarks were directed more particularly to instruments and methods with which he himself had to do, and were supplemented by wall drawings and photographs to demonstrate the various developmental forms since 1900 of his original "composite cystoscope," which he claimed had been copied by a cystoscopist in another city. This composite cystoscope was a vastly more useful instrument than was its immediate predecessor, the author's double catheter direct-vision cystoscope, which was the first telescopic cystoscope, of any form, to provide for two catheters and effect synchronous catheterization of the ureters. But this instrument had no reserve channels for irrigation. It was with the end in view of finding a way to add such irrigation channels to the already practicable double catheter direct-vision cystoscope, while, at the same time, not increasing the circumference of the shaft beyond No. 24 French, that the Brown-Wappler efforts were first directed, in 1900.

with what initial success and constantly added improvements the present presentation was intended to demonstrate. It should here be added, the speaker said, that his first double-catheter instrument was but a modification of the then existing Brenner single cystoscope, whereas his subsequent instruments involved a wholly novel departure from all the pre-existing types. The first essential change lay in getting rid of the old-time terminal window at the vesical end of the sheath, followed, then, by the use of different kinds of interchangeable telescopic tubes for the same common sheath. Up to the present time its development on this basis had resulted in giving three complete cystoscopes for different purposes adjustable to one sheath. Still another tube to go with this common sheath was all but completed, in the shape of an indirect-vision double-catheter telescope. As to the uses of ureteral catheterization, Dr. Brown said these might come under two heads, diagnostic and therapeutic. The latter, in his belief, were quite limited, and he differed from those enthusiasts over kidney lavage of a few years ago, who, missing the diagnostic resources of this procedure, claimed to meet with so vast a number of patients with pyelitis as to astonish others who had long been studying such conditions. Not only had they discovered that pyelitis was very common, but, furthermore, that it was a leading factor in the causation of Bright's disease. From such original deductions regarding both the prevalence of pyelitis and their new etiology of Bright's disease, it was not difficult to foresee what a marked change the future mortality statistics in connection with such forms of renal disease, when treated by their medicated lavage of the pelvis, would show. The speaker said that he could appreciate the fact that there were exceptional cases of pyelitis which would be advantageously treated, at least in part, by this method, but that for the great majority internal medication, together with climate, hygiene, and diet, would be much more efficient and vastly safer. The therapeutic use of the ureter catheter, on the other hand, in cases of stones lodged in the ureter, was, from the speaker's experience, one of considerable importance. In not a few, the descent of such calculi had been determined at once or in intermitting stages, connected with each such stretching introduction of the catheter. Besides this mechanical effect of the catheter, it was of undoubted use in such cases when the eye of the catheter had reached a point above the lodged calculus, to employ either warm oil or add to the existing urinary hydrostatis pressure by the guarded and gradual injection of warm boric acid or saline solution. The efficacy of the ureteral catheter for the immediate relief of some cases of acute hydronephrosis, by carefully insinuating the eye of the catheter past the mechanical barrier, whether this was stricture of the ureter, angular bending of the ureter, or impaction of calculus, was self-evident. Where, in such cases, the catheter was successfully used, it was at once appreciated as being a therapeutic and diagnostic resource of the greatest value. The last therapeutic purpose of the ureter catheter which occurred to the speaker was that of serving as a tubular splint for a partly or completely severed ureter, whether such was the result of accident in abdomino-pelvic surgery, or any compression trauma of this tube incidental to accidents. Not only would extravasation be prevented by draining the urine past such laceration, but the presence of the catheter also served as a mandrel during suture of the ureter. The second, or diagnostic, uses of the ureteral catheter were vastly too numerous and well recognized to require comment. The speaker said he would dwell for a moment only upon the combined use of radiography with ureter catheterization. It was well known that many plates of the bony pelvis revealed shadows and that from the standpoint of shape and position it was impossible for even the most expert interpreters of *x*-ray plates to say whether these shadows represented a calculi in the ureter or some simulating body in the immediate vicinity. When these shadows were found in patients giving a fairly typical clinical history of lodged ureteral stone, the only nearly absolute safeguard for the surgeon, as well as patient, against an unnecessary operation, was to be had from the practice of first passing a ureter catheter to a distance beyond the site of this previously recognized questionable shadow, and then inserting a metal stylet (preferably of platinum) into the catheter, and again making an *x*-ray picture of both. Of course, when the questionable former shadow was seen in the same anteroposterior plane as the shadow of the metal stylet, in other words, when these were apparently in direct contact the diagnosis was very materially strengthened, while, on the contrary, it was almost completely dispelled if an appreciable space existed between the two shadows. A double ureter, encysted calculus, or something equally rare, would need to be involved in order to lead to error in diagnosis. It was because of the great value of this diagnostic resource that the speaker had made a table on which this entire procedure could not only be carried out in the specialist's office, but where no essential change or movement of the patient's body was necessary after insertion of the styletted catheter.

The Newer Methods of Examining the Bladder.—Dr. Frederick Bierhoff said the methods of examination of the bladder which were at our disposal were: Inspection, palpation, exploration with the sound, exploration with the catheter, digital exploration, exploratory incision, examination by the *x*-ray and examination by direct illumination. Of the above enumerated methods, all, with the exception of examination by the *x*-ray and by direct illumination had been in use for many years and gave comparatively little and usually unsatisfactory information concerning diseases of the bladder. The last two methods were the more modern developments in the line of bladder examination, and of these examination by direct illumination by means of the cystoscope was the most exact and satisfying. Each of the methods enumerated gave us some information. All, however, with the exception of cystoscopy and exploratory incision, were uncertain and unsatisfactory, while the latter was a procedure of so grave a nature that it should only be employed when all other methods failed. The certain method of examination of the bladder was and must remain the method of direct illumination by means of the cystoscope, for no other method gave us so much information as this. Where any stiff instrument could be passed at all into the bladder, the cystoscope might be employed. The speaker said he had examined with it children as young as four years, and he felt confident that were the need to arise he would be able to examine even younger children with it. While cystoscopy was not free from dangers, particularly in the hands of inexperienced or careless operators, it offered, when properly and carefully employed, the minimum of danger and the maximum of utility. There were two methods of examination—or, rather two types of instruments—those for direct vision and those for indirect. The instruments of the direct-vision type were all modifications of the principle first laid down by Bozzini, who, in 1806, first proposed a method of examining the various canals of the body by means of his so-called "light-carrier." Of the instruments in use at the present day which were representative of the direct method, those of Pawlik-Kelly and Brenner, with their modifications, were the representatives. The indirect method was that of Nitze, and the instruments employed were all modifications of Nitze's original prismatic cystoscope. While the straight telescopic instruments had the advantage that they did not invert the image, they suffered from the disadvantage that there were parts of the bladder interior which could not be seen when such instruments were used. By means of the prismatic cystoscope, however, every part of the bladder wall might be brought into the field of vision, and to the experienced

cystoscopist the inversion of the image formed no obstacle whatever to correct examination and interpretation. Recently, Jacoby of Berlin had devised an attachment by means of which the inverted image might be restored to the original position. In order to successfully cystoscope a patient, whether male or female, the operator must understand the construction of his instrument and the accidents to which it was subject; the urethra of the patient to be examined must allow of the easy passage of the instrument. For the examination of children, an especially small cystoscope, made particularly for that purpose, should be employed. The bladder should be capable of a sufficient degree of distention to make free excursion of the beak of the instrument possible. The bladder must be filled with a transparent medium, and to that end must be irrigated until the fluid used to cleanse it returned perfectly clear. Any bland, non-irritating fluid which was perfectly transparent, such as sterilized water or sterilized normal saline solution, or boric acid solution, might be employed. Air had also been used to fill the bladder and its supporters. Most cystoscopists, however, preferred a fluid medium. The light should be sufficiently powerful to illuminate clearly the bladder wall. In conclusion, the speaker stated that the prismatic type of cystoscope, as originally presented by Nitze, in 1879, was and would remain the instrument par excellence for the satisfactory examination of the bladder.

Notes on Over-Treatment of the Urethra and Bladder.—Dr. James Pedersen, under this title, reported three cases of urethral trouble, which illustrated the injurious effects of over-treatment. One case was that of a young man who had a slight urethral discharge for which he consulted his physician, who promptly pronounced it "no infection" and passed a full-sized urethral sound. This gave the patient pain and produced some bleeding. The next day he had a chill, followed by a high temperature, together with increasing frequency of urination and progressive obstruction. These symptoms became so marked by the following week that the patient took to his bed. A few days later (twenty days after the instrumentation), complete retention occurred, and for one week he was catheterized daily without any change in his condition. At this time, when Dr. Pedersen first saw him, a soft catheter was introduced without difficulty, and twenty-four ounces of chocolate-colored urine were withdrawn from the over-distended bladder. Catheterization every eight hours was then carried out, to prevent a recurrence of the over-distention. Two days later fluctuation in the prostate appeared. Pus was evacuated through a median vertical perineal incision, and the patient made a rapid recovery. After a safe interval (eight days) treatment of the cystitis and dilatation of the stricture was begun.

Conservative Prostatectomy.—Dr. Follen Cabot said that during the past few years much progress had been made in the treatment of prostatic hypertrophy. The advancement had been mainly along surgical lines. The mortality of 18 to 25 per cent. of ten years ago had been gradually reduced until now it averaged about 7 per cent. The results of the operation as to the urinary function, etc., had also shown much improvement. The speaker said that in his own series of seventy-two complete prostatectomies performed in the past five years he had lost five patients. Two of these were diabetics, and the others were worn out from long suffering. In looking back over these deaths he believed that with his present experience and change in methods he could have saved at least three of those men. The speaker divided prostatics into three groups. In the first group he placed the cases which were beginning to show evidences of prostatic obstruction. In the second group he placed those cases which had two or more ounces of residual urine, who were straining considerably, and getting up four or five times at night to empty the bladder. In the third group he placed those prostatics who could no longer be treated by palliative measures, they were usually very much shattered in health and could not withstand much surgical shock. The catheter no longer gave them relief, but often was the cause of hemorrhage, chills and pain. A man's age, Dr. Cabot said, really had little to do with his power to resist operative shock. The circulatory apparatus, kidneys, and general condition must, however, be carefully studied in every instance. In the first group of prostatics, those in good health and with mild symptoms, no operation was advisable unless there was evidence of advance in the obstruction. In the second group we usually had evidence of cystitis and often a secondary pyelitis. The catheter had to be used occasionally or perhaps constantly to keep the patient at all comfortable. The broken rest, the use of the catheter and all it entailed really made him an invalid, and there was always danger of infection and other complications which suddenly brought the patient into the third group. In this third group something of a surgical nature was necessary in order to preserve life, and often there could be no further delay. The question therefore arose in all cases in this group, and some of those in the second one, what shall we advise? A complete prostatectomy was almost sure to be followed by death. Dr. Howard Lilienthal had answered this question in 1896 by suggesting and carrying into practice a two-stage operation. Dr. Cabot said he had followed this plan several times and believed it to be of the greatest value. In all cases where he had the least doubt of the patient's resistive power, he now did the two-stage operation. The patient in a state of shock or low resistive power was quickly prepared for operation, and a suprapubic cystotomy was done under local or general anesthesia. This should not take more than five to eight minutes, and by this measure we obtained all the advantages of a complete operation without its disadvantages. The patient was put to bed wearing a good-sized drainage tube; he was made to sit up at the end of twenty-four or forty-eight hours and drained in this way till his condition was so good that a prostatectomy could be quickly performed through the same cut. The patient might sometimes wear the tube indefinitely. The cystitis gradually disappeared, the kidney condition improved, the engorgement of the prostate passed off, and the patient, through rest and forced feeding, regained his lost strength. He then was given a small amount of chloroform and the prostate enucleated in a few minutes. The suprapubic route was the best one for this two-stage operation, owing to the comfortable position of the tube.

Dr. Parker Syms said Dr. Brown's work in connection with the evolution of the cystoscope deserved much praise. His own experience with ureteral catheterization was very slight. He recognized the fact that in a certain limited number of cases it was a procedure of much value, and that in the hands of most skilled and careful operators it might be sufficiently devoid of danger to make its employment justifiable. On the other hand, he wished to sound a note of warning against its indiscriminate employment, and he believed that catheterization of the ureters should be limited to those cases wherein a diagnosis was absolutely necessary and wherein other means had failed. What the speaker referred to was the grave danger of infecting a healthy kidney by ureteral catheterization, and while he would not insist that the method should be discarded, he wished again to emphasize the fact that its employment should be limited to the most skilled experts. In discussing Dr. Bierhoff's paper on the newer methods of examining the bladder, Dr. Syms said our former methods of exploring the bladder—excepting exploratory incision—had left us with very inadequate means of knowing the conditions of that organ, and for that reason the cystoscope had proved a very important instrument; but here, too, he wished to give a warning as to dangers and

limitations. No matter by whom the cystoscope was employed, the findings were not always comprehensive. Positive proof might be of value, but negative proof was not always conclusive. In certain conditions of the bladder the employment of the cystoscope was attended with serious danger. In speaking of prostatectomy he said that the divergent opinion that had formerly prevailed among surgeons as to the propriety of operating under certain conditions were now more or less harmonized, although the best method and manner of approach were still a fruitful source of discussion, and both the upper and the perineal routes had warm advocates. Personally he had always felt that the perineal operation was the one of choice, and statistics proved that the mortality by that route was much less than by the suprapubic. In speaking of the mortality of this operation, we should have in mind not only that due to the immediate operation, but also that occurring during the convalescence. One great advantage of the perineal operation was the short time required for its performance, and the brief confinement of the patient to bed. His patients were usually up within forty-eight hours. As to performing the operation in two stages, Dr. Syms first resorted to this expedient over ten years ago, and had always employed it in cases of very feeble men, and in several instances it was the only way in which the patients could have been safely operated upon.

Dr. George Magan Muren of Brooklyn thought the cystoscope was employed entirely too frequently and that other useful means of diagnosis had been neglected by those who were enthusiastic cystoscopists. The patient's welfare was thus jeopardized by the too frequent use of this very valuable instrument. In discussing prostatectomy, Dr. Muren said that frequent reference had been made to selected cases, but nobody had said anything about the unselected cases, the old men whose general condition was such that any operation would in all probability prove fatal. He had seen them die after the suprapubic operation and after the perineal, and also after the two-stage operation described by Dr. Cabot. The speaker said that in dealing with this class of cases he preferred permanent suprapubic drainage, and for that purpose he showed an apparatus which he had found very serviceable in draining the bladder, with a stop-cock attachment to prevent leakage.

Dr. Martin W. Ware said that both Dr. Brown and Dr. Bierhoff had made it clear that the cystoscope was an instrument of precision, and it was perhaps not going too far to claim that it could be placed on a par with the microscope. In coming to a conclusion, we rarely relied solely on the microscopic findings, to the exclusion of other factors, and we should look upon the cystoscope in the same way. A proper cystoscopic examination always required time and deliberation, and it should never be regarded as a procedure of exigency. The speaker, after referring to the valuable work done by Dr. Brown in connection with the improvement in ureteral cystoscopy, said there were certain cases where the conditions were such that direct illumination of the ureteral orifices was impossible and which called for the use of the Nitze instrument. While the possibility of infecting a healthy kidney by ureteral catheterization should be borne in mind, the proofs of that fact were lacking, particularly in tuberculous conditions, and personally the speaker said he was inclined to believe that the danger of infecting the opposite organ by this method was largely a myth. Cystoscopy in children, to which Dr. Bierhoff had referred, was a field that was not yet thoroughly open to us. In children under five years of age the caliber of the urethra was so small that the instruments thus far devised for the purpose of exploring the bladder had not proven satisfactory on account of the small size of the prism that had to be used. As a possible satisfactory substitute, the speaker suggested the use of the salpingoscope, with a properly lengthened shaft. This instrument, as now made, was of the Nitze type and was employed by rhinologists in examining the orifices of the Eustachian tubes.

Dr. F. Tilden Brown, in closing, said that while he believed that the vast majority of patients requiring ureteral catheterization could be reached with the direct instrument, and while that method was, from his point of view, somewhat preferable to the indirect for a variety of reasons, among them being that it required less time and there was less tendency to leakage, he fully appreciated the value of the prismatic ureteral cystoscope in somewhat atypical cases. Dr. Ware had admirably answered the criticisms of the other speakers with reference to the risks attending catheterization of the ureters, and the speaker said that in his personal experience he was not aware of any accident in the cases he had examined. He had repeatedly convinced himself that the instrument and all its appliances could be thoroughly sterilized by subjecting them to formaldehyde vapor, and this measure, together with proper cleansing of the urethra and bladder, and performing the operation under strict aseptic conditions, removed wholly any danger of infection. Even if the tip of the instrument, after accidental infection, was introduced into a healthy ureter, and no trauma was produced, he doubted whether an ascending infection with ultimate involvement of the kidney would occur. The infections of the kidney were usually of hematogenous origin, and the possible danger of an ascending infection was regarded as less likely than formerly except from the gonococcus and colon bacillus.

Dr. Bierhoff, in closing, said he had been perfectly satisfied with his results with the indirect-vision cystoscope. He did not agree with Dr. Muren that the cystoscope was used too frequently and to the neglect of other and better methods of diagnosis. In doubtful cases he did not think it was just either to the patients or to ourselves to tinker with unsafe or unsatisfactory methods instead of at once resorting to the cystoscope, which was the most complete and scientific method of examination, and which offered us the maximum of information at the minimum of risk. As Dr. Ware had said, it should be looked upon as an instrument of precision, but it certainly was an unsafe instrument in incompetent hands. Here, as in any other field of medicine, experience was necessary, and even the most experienced at times could not form a complete diagnosis upon the result of a single cystoscopic examination. In regard to cystoscopy in infants and children, Dr. Bierhoff said there were instruments on the market with a caliber as small as No. 14 F. and even No. 11 F., and with these a perfectly clear picture of the bladder could be obtained.

Dr. James Pedersen, in closing, said that he had seen a ureteral calculus pass after a ureteral catheter had been used, and also that he had seen a calculus dislodged from the ureteral orifice by passing a searcher over it. Referring to the use of the styletted ureteral catheter, he quoted a case recently reported by Dr. Forbes Hawkes in which a radiograph showed a shadow situated at some distance from the shadow of the stylet. Subsequent operation proved the shadow to be due to a calculus which had become lodged in the ureter. The case was explained as one of bifurcated ureter, the ureteral catheter having gone up one division, while the calculus lay in the other division. Regarding the possible danger attached to cystoscopy, he gave it as his opinion that under proper precautions and in skilled hands, cystoscopy, with or without catheterization of the ureters was as safe a procedure as, for example, the use of the urethral sound, which, carelessly used, was capable of doing harm. He spoke favorably of the two-step operation in certain cases of prostatectomy, and referred to an emergency case to which he had been called, in which he was convinced that preliminary drainage before the prostatectomy had been the means of saving the pa-

tient's life. He called attention to the fact that, whereas suprapubic drainage is well borne in, practically, every case, perineal drainage often has to be discontinued because of the intolerance of the inflamed prostatic urethra and prostate.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held November 19, 1907.

DR. GLENTWORTH R. BUTLER IN THE CHAIR.

The Construction of a Successful Medical Paper and Its Proper Discussion.—Dr. LE GRAND KERR of Brooklyn read this paper. He said that the word successful was elastic, the meaning being largely colored by the attitude, either ethical or material, which the individual took toward the study of medicine. A successful medical paper was one that was informing, suggestive, or reforming, or which combined two or more of these elements. An informing paper did not have to state new facts, but could place old things in a new light, or by iteration, give them new force. Such a paper was at once successful, although the degree of that success was determined by the fact whether the information was instructive to the few or the many. Reports of cases under personal observation furnished examples of such a paper. A suggestive paper was usually gleaned from experimental research or by the pursuance of laboratory methods, but not always so, for frequently clinical papers were read which simply stated facts, and through the modesty of the writer debarred him from drawing conclusions, yet such a paper could be very suggestive to the hearers. The highest type of a reforming paper was that which presented clearly defined means or methods by means of which the community and the individual could be lifted morally, mentally, as well as physically. The construction of a successful medical paper demanded that it be written clearly and accurately, that it be constructed without prejudice, and that it state an experience, either directly or by inference. There were other elements which added materially to the value of a paper, but which were not absolutely essential to its successful construction. They were: conciseness, a reasonable calculation of the importance or non-importance of the pathogenic, subjective, physiological, or basic principles, and the construction of a logical argument. Argumentation was not absolutely necessary to a successful scientific paper, and although greatly to be desired, accurate conclusions might not be necessary, for a paper which contained a real experience stated clearly and without prejudice had in it the essential elements of success, even though that experience added weight to already known facts. It was only necessary to look over the table of contents of any of the medical journals to be convinced that the titles were in many instances framed with scant carefulness. The title was to be so worded as to define as clearly as possible the subject to be discussed. In the construction of the text much consideration had to be given to the audience. A paper intended for men skilled in some special branch of medicine or surgery was not to be written in the same manner as one intended for the general practitioner. The treatment of the theme had to adapt itself to the environment. When terms were used in the text that had a doubtful or double meaning they had to be defined accurately. The use of English in place of Latin terms was desirable. The facts were to be stated clearly and briefly, but in no case was brevity to detract from accuracy. To be concise was good; to be accurate was better. It was helpful, particularly if the paper was to be printed, to conclude it with a clear-cut summary. Medical papers could be divided into three large classes, the experimental, the analytical, and the topical. The value of an experimental paper depended upon three things, accuracy of observation, a mind free from prejudice and open for impression, and the ability to report correctly. It was rare to find these three qualities combined in the same individual, and the result was that much experimental work was valueless, or nearly so, until the results of such work had been analyzed or reanalyzed by others than the original investigators. The value of an experiment depended on the individual performing it, as well as upon the materials, or animals experimented upon. When reasonable inductions had been formulated from laboratory experimentation they had to be proved in practice, so that the practitioner became the court of last resort. An analytical paper was almost always didactic in its purpose, and its value depended on its simplicity and orderly arrangement. The best analytical papers were written by men who were born teachers. All such papers fell short of their purpose if they failed to observe the laws of adaptation, cooperation, definiteness, system, and repetition. Topical papers were the most successful contributions to medicine because they came mainly from practitioners and appealed to the same class. They were valuable because they reported actual clinical experience; they were written without the bias which was frequently the result of close specialization; they added weight to already recognized truths; they were sometimes original, often suggestive, and were always welcome. There was a tendency among the profession in general, among specialists in particular, and among editors almost without exception, to discourage the reading of, or publication of, medical papers by unknown men. The inevitable result of this had been that "impractical papers" had been the rule rather than the exception. The race seemed to have been for singularity, and the prize too often self-aggrandizement. Originality had its place, and a very large one, in medicine, but that place was not to discourage the efforts of those men who were unable or too modest to claim it. In the construction of a topical paper, too much stress was not to be placed upon the opinions of authorities; they were to be quoted and recognition made of their opinions, but the real authority in any given case was the man directly in charge of that case, and the too ready acceptance of every opinion and statement made by an authority soon vitiated the influence of individual effort and reasoning. The proper discussion of a medical paper required that the opener assumed the right attitude toward the paper and its purpose. Discussion was not criticism, although criticism might at times play a rôle in the act of discussion, but when it did it was a minor part. There were two parties to the discussion of a paper—the opener, and by common courtesy, the author of the paper, who closed the discussion if he so wished. Many times the attitude of the former seemed to be the discovery of possible flaws in the make-up of the paper, criticism instead of appreciation of its points, and the final application of a verbal balm that was applied to soothe the injury that may have been done. The attitude of the second party of the discussion was often that of unqualified defence of his paper instead of that seeking after truth which should influence all of the physicians thinking fulsome approbation was too much used in the discussion of papers. The discussion was to be brief and pointed, and in every case pertinent to the paper. Brevity was not absolutely essential, if the speaker was concise and logical in his remarks. That man was not to be encouraged who prefaced his remarks with the statement, "I have nothing to add to the discussion, Mr. President," and then gave the audience a practical demonstration of a verbal diarrhea,

which was not amenable to treatment. To get the most out of a medical paper for the hearers was to get the most into it for the writer. Access to an abstract of the content of the paper before its reading or publication was much to be desired.

Opsonins and Bacterial Vaccine Therapy. (a) Theory and Literature.—Dr. GEORGE B. WHITE of Brooklyn read a paper with this title.

(b) The Technique (with Lantern Slides).—Dr. WILLIAM H. WOGLOM of Brooklyn presented this phase of the subject.

(c) The Practice and Therapeutic Value.—Dr. NATHANIEL BOWDITCH POTTER of New York read this paper.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

At a stated meeting, held February 6, Dr. JAMES M. ANDERS reported "A Case of Multiple Sacculated Thoracic Aneurysm Successfully Treated by Wiring," and he exhibited the patient, a mulatto, some thirty years old, with a syphilitic history. At the time of operation, more than a year previously, the skin and other tissues overlying the pulsatile tumor, near midsternum, had become so thinned as to give rise to fear of rupture. No. 26 silver wire was introduced through hollow needles and pulsation at once diminished. Subsequently the soft tissues actually sloughed away and a considerable amount of the wire was removed. *X*-ray examination showed the aneurysm had become much reduced in size. At the time of report, however, expansile pulsation had become manifest in another situation, although the man had been quite comfortable in the interval. Dr. JAMES P. MANN described the operation performed by him in Dr. Anders' case. Silver wire was selected because of its resistance to corrosion and its lesser liability to kink. Electrolysis was not employed because pulsation ceased as soon as the wire was introduced. Dr. G. E. PFAHLER exhibited negatives showing *x*-ray pictures of the aneurysm at successive periods. Dr. JOSEPH SAILER presented a communication entitled "Sacculated Aneurysm of the Arch of the Aorta Ruptured Into the Superior Vena Cava Without Symptoms of Venous Obstruction," and he exhibited the specimen. The case is unique in the fact that in all other recorded instances in which a similar condition was present there were observed cyanosis and edema of the upper portion of the chest, the neck, and the upper extremities. Dr. JOSEPH MCFARLAND presented a communication entitled "The Pathogenesis of Aneurysm of the Aorta," supplemented by an exhibition of specimens. He pointed out that the factors usually assigned for the development of aneurysm are increased pressure within the arterial system and a morbid state of the blood-vessels, but not rarely both of these conditions are present without the formation of aneurysm. The classification of aneurysm is difficult, the gradation from a simple dilatation to an unequivocal aneurysm being exceedingly delicate. Dr. HENRY K. PANCOAST read a paper entitled "The *X*-ray Diagnosis of Aneurysm of the Aorta." He held that while the results yielded by radiography in the diagnosis of aneurysm are most important they are not invariably conclusive and not infallibly correct. Dr. HOBART A. HARE presented a communication entitled "The Wiring Operation in the Treatment of Aneurysm of the Aorta, and the Influence of Drugs Before and After Operation." He had operated or assisted in operating on fifteen cases of aneurysm by the introduction of gold wire and the passage of a continuous galvanic current. He had been struck by the relief of pain and other oppressive symptoms and the reduction in the tumefaction immediately after the operation. In some cases life had been prolonged for three years, and the patients had been able to attend to important duties in the interval. Care must be taken to avoid the induction of electrolytic sloughing of the skin, as the wound thus caused fails to heal and is likely to lead to rupture of the aneurysm. Dr. Hare knew of no drug that was useful in the treatment of aneurysm, unless, perhaps, it was aconite that diminished the activity of the heart. Dr. W. S. NEWCOMET exhibited negatives illustrating the aneurysm in one of the cases discussed by Dr. Hare. In this instance interesting information was gained also by fluoroscopic study, with the aid of which the dilatation and collapse of the enlarged vessel could be seen.

SECTION ON GENERAL MEDICINE.

At a stated meeting, held January 13, Dr. B. FRANKLIN STAHL presented a patient with Adams-Stokes disease. The case occurred in a man about 54 years old, without a history of syphilis, who presented classic symptoms of heart-block, without convulsive seizures. The pulse at times fell as low as 13 in the minute. Dr. GEORGE W. NORRIS exhibited "pulse-tracings from the foregoing case, demonstrating the heart-block." By graphic methods it was shown that for every ventricular contraction there were three auricular contractions. Dr. JOSEPH ERLANGER of Madison, Wis., by invitation, read a paper entitled "Recent Advances in the Pathological Physiology of the Heart, with Especial Reference to Arrhythmia." He pointed out the various degrees of rhythmic contractility in different parts of the heart, and he dwelt on the transmission of motor impulses from one part to another part of the heart. These impulses were in general transmitted from the auricles to the ventricles, and they seemed to originate in the right auricle at the points of entrance of the great veins, in the vicinity of the venous sinus. Disorders of rhythm had been demonstrated experimentally and in some instances had also been shown clinically to be due to interference with or lesions of the conducting structures. Dr. LEWIS A. CONNER of New York, by invitation, read a paper entitled "The Clinical Study of Heart Disease." He indicated that too little attention was paid to the fundamental principles in the physical study of the heart, namely inspection, palpation, percussion, and that almost too much dependence was placed on the results of auscultation to the exclusion of the other methods of diagnosis. The results of *x*-ray examinations were somewhat disappointing, but more was to be hoped for from orthodiagraphy, by the aid of which the distortions occurring in radiograms are to be avoided. Dr. THEODORE C. JANEWAY of New York, by invitation, read a paper entitled "The Use and the Abuse of Digitalis and Other Heart Tonics." He pointed out the necessity in every case in which digitalis was prescribed of seeing that a good preparation was furnished. It was necessary that the leaves of the second year's growth not more than a year old be employed. The best preparations are a good infusion and a good tincture. The active principles or glucosides are not stable preparations and accordingly are not to be depended upon. The infusion must be freshly prepared and should never be made from a fluid extract. Two drams of a good infusion constitute an efficient dose. When the infusion is not borne by the stomach, the tincture may be employed hypodermatically or rectal administration may be resorted to. A poultice of digitalis leaves is too expensive a method of application, especially in proportion to the results. Digitalis is particularly indicated when there is unduly rapid action of the heart or arrhythmia in conjunction with want of tone of the left ventricle. In the discussion that followed, Dr. JOHN H. MUSSER spoke of "The Importance of Instruments of Precision in the Study of Heart Cases." He dwelt especially upon the importance of tracings of cardiac, arterial, and venous pulsation, and of blood-pressure in the interpretation of signs and symptoms of circulatory disorder. Dr. HOBART A. HARE took up for consideration

"Remedial Measures Other Than Drugs in the Treatment of Heart Disease." He spoke of the value of rest, of massage, of hydrotherapy, and of diet as valuable measures in the correction of circulatory derangement. Dr. ALFRED STENGEL spoke of "Extracirculatory Manifestations of Cardiac Failure." He dwelt upon certain reflex and other nervous phenomena resulting from disturbances in the circulation, as well as impairment of nutrition, which was sometimes observed. Dr. JOSEPH SAILER made some remarks on "Blood-Pressure in Relation to Prognosis in Heart Disease." He stated that the three gradations in pressure, namely low, normal, and high, gradually merged the one into the other, although an unfavorable prognosis might be made when the pressure became unduly high or unduly low. In general the high blood-pressure of vascular disease was of more serious prognostic significance than that of renal disease.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

REGULAR BOARD OF MEDICAL EXAMINERS, STATE OF GEORGIA.

Atlanta, October 8, 1907.

CHEMISTRY.

1. Give the chemical name of water, its formula, and its composition by weight and volume.
2. Give the chemical name of white arsenic. Give the names of three preparations of arsenic used in medicine. What salt of iron is an antidote for arsenic poisoning?
3. Give the chemical and pharmaceutical names and formulas of two compounds of mercury and chlorine commonly used in medicine.
4. Differentiate between chemical and physiological antidotes.
5. Give a good test for indican in the urine. What is the clinical significance of indican in the urine?

ANATOMY.

1. Give the divisions of the vertebral column. (a) Describe one vertebra under each division. (b) Describe typical rib.
2. Give anatomy of shoulder joint.
3. Bound triangles of the neck. Give contents of each. (Draw a diagram.) (a) Give origin and insertion of (1) Latissimus dorsi, (2) Pectoralis major, (3) Triceps, (4) Supinator longus.
4. Give anatomical relations of the liver.
5. Describe brachial plexus.

SURGERY.

1. Name the varieties of fracture. (a) State the cardinal principles in the treatment of fractures.
2. Give diagnosis of hydrocele and best method of operating for its cure.
3. What is intussusception? (a) Describe an operation for intestinal anastomosis.
4. State best method for radical cure of varicocele.
5. Describe an operation for the removal of the mammary gland.

MATERIA MEDICA AND THERAPEUTICS.

1. Name the most commonly prescribed coal tar derivatives and their therapeutic uses and dangers.
2. Source of opium. Name four of the most important preparations and their therapeutic uses.
3. Source of quinine, indications and contraindications for its uses.
4. Define escharotic and name one or more and their mode of action.
5. Write prescription for chronic malarial poisoning.

OBSTETRICS AND DISEASES OF CHILDREN.

1. What diseases in the mother are liable to injure the fetus *in utero?*
2. What structures compose the fully developed umbilical cord?
3. What are the causes of labor at full term?
4. What principal dangers may arise after delivery is completed, and how should we guard against them?
5. Cause and treatment of post-partum hemorrhage.

PHYSIOLOGY.

1. What is the difference between mucous membranes and serous membranes, anatomically and physiologically?
2. Define lymph, chyme, and chyle.
3. What is the normal pulmonary capacity in the adult? Name the subdivisions and the capacity of each subdivision.
4. Name the four parts which constitute the circulatory system, briefly giving their functions.
5. Mention the cranial nerves of special sense, giving function of each.

PATHOLOGY.

1. Describe the pathological changes in blood in pernicious anemia.
2. In what condition do you find the tissues surrounding an indolent ulcer?
3. (a) Name the obligate bacteria. (b) Differentiate between the changes produced by staphylococci and tubercle bacilli.
4. What are the pathological changes produced by cirrhosis of the liver?
5. Differentiate between carcinoma and sarcoma.

GYNECOLOGY.

1. What is amenorrhea? (a) State the causes and treatment.
2. What is Alexander's operation? (a) State indication for and manner of performing it.
3. Describe prolapsus urethræ; state what it might be mistaken for and the proper treatment of it.
4. Give symptoms and treatment of acute cystitis in the female.
5. Describe briefly the uterus, ovaries, and Fallopian tubes.

PRACTICE.

1. Give symptoms and treatment in bilious colic.
2. Differential diagnosis: Typhoid and malarial fever and treatment of each.
3. Symptoms and treatment in uremia.
4. Cause and symptoms in mercurial stomatitis.
5. Differential diagnosis in rheumatic fever and gonorrheal rheumatism.

OBSTETRICS.

1. Define puerperal eclampsia and give its treatment.
2. Give causes, symptoms, and management of a case of rupture of the uterus.
3. Give average capacity of a child's stomach at birth; three months; six months, and twelve months old.
4. Symptoms and differential diagnosis of varicella.
5. Differential diagnosis between broncho- and lobar pneumonia.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

REGULAR BOARD OF MEDICAL EXAMINERS, STATE OF GEORGIA,

Atlanta, October 8, 1907.

CHEMISTRY.

1. WATER. *Chemical name,* hydrogen monoxide. *Formula,* H_2O. *Composition by weight,* sixteen of oxygen and two of hydrogen. *Composition by volume,* one of oxygen and two of hydrogen.

2. The chemical name of white arsenic is arsenic trioxide. Three preparations of arsenic used in medicine: Liquor Potassii Arsenitis, Liquor Sodii Arsenatis, Liquor Arseni et Hydrargyri Iodidi.

Freshly prepared ferric hydroxide is the antidote for arsenic poisoning.

3.—

Chemical Name.	Pharmaceutical Name.	Formula
Mercurous Chloride	Hydrargyrum chloridum mite	Hg_2Cl_2
Mercuric Chloride	Hydrargyrum chloridum corrosivum	$HgCl_2$

4. *Chemical antidotes* act as such by uniting chemically with the poison and thus converting it into a harmless or insoluble compound.

Physiological antidotes act as such by combating the physiological action of the poison.

5. *Test for indican in the urine:* The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chlorid, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the

chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

Indicanuria is found in hypochlorhydria; in hyperchlorhydria of gastric ulcer; in conditions in which there is diminished peristalsis of the small intestines, as in ileus and peritonitis, not in simple constipation: also in conditions in which putrefactive changes occur in the body elsewhere than in the intestine, as in empyema, putrid bronchitis, gangrene of the lungs, etc. (From Witthaus' *Essentials of Chemistry.*)

SURGERY.

1. Fractures are variously classified:

(a) Simple, compound, and complicated.

(b) Complete (transverse, oblique, spiral, longitudinal) and incomplete (fissured, greenstick).

(c) Single and multiple.

(d) Comminuted, impacted, etc.

(e) Intra- and extraarticular; intra- and extracapsular.

The cardinal principles in the treatment of fractures are: Reduction, coaptation, immobilization, and suitable measures for promoting the nutrition of the part and for preventing adhesions in the neighboring joints and muscles. Compound fractures, in addition, demand: Asepsis, removal of foreign matter or damaged tissues, stopping the hemorrhage, and measures to combat shock.

2. Hydrocele is diagnosed by its *translucency*. Further, it is a tumor which grows from below upward, is tense and fluctuating, is generally situated in front of the testicle, and gives no impulse on coughing.

Volkmann's and von Bergmann's operations are both recognized methods of treating hydrocele.

3. *Intussusception* is the prolapse of one part of the intestine into the part immediately below.

MATERIA MEDICA AND THERAPEUTICS.

1. The most commonly prescribed *coal tar derivatives* are: Acetanilid, phenacetin, antipyrin, phenol, cresol, salicylic acid, naphthol, guaiacol, salol, creasote, and sulphocarbolates.

Their *therapeutic uses are*: As antipyretics, as analgesics, as antiseptics, as narcotics, and as germicides; they also aid in the formation of hemoglobin.

Their *dangers* are: They are irritants, poisons; they produce collapse, shock, digestive disturbances, skin eruptions, cyanosis, chills, excessive sweating, depression of the central nervous system.

2. The *source of opium* is the exudation from the unripe capsule of the *Papaver somniferum*.

Four of its most important preparations: Morphine sulphate, tincture of opium, camphorated tincture of opium, powder of ipecac and opium.

Therapeutic uses: As an anodyne, a hemostatic, in inflammations, as an expectorant, in diarrhea, in alcoholism, manias and diabetes, as an antispasmodic, in insomnia, and as a diaphoretic.

3. Quinine is an alkaloid obtained from the bark of cinchona.

Indications: In malaria, neuralgias, hay fever, acute coryza, and as a stomachic tonic.

Contraindications: Inflammations of the middle ear, gastrointestinal tract, kidneys, or bladder; also where the patient has an idiosyncrasy.

4. *Escharotics* are agents which destroy the vitality of the tissues to which they are applied.

They may act: (1) By abstracting water from the tissues, as sulphuric acid, caustic potash. (2) By corrosive deoxidation of the tissues, as chromic acid, bromine. (3) By combining with the albumin of the tissues, as silver nitrate, zinc chloride. (4) By carbonizing the tissues, as the actual cautery and the moxa.

5. A prescription for chronic malarial poisoning:

℞ Quininæ sulphatis, ℥j.
Tincturæ ferri chloridi, ℥v.
Liquoris acidi arsenosi, ℥jss.
Syrupi zingiberis, q. s. ad ℥iv. Misce.
Signa: One teaspoonful in water after each meal.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Diseases in the mother liable to injure the fetus *in utero* are: Typhoid fever, typhus fever, scarlet fever, yellow fever, malaria, cholera, smallpox, measles, pneumonia, erysipelas, syphilis, chronic poisoning by lead, mercury, or phosphorus, albuminuria, cancer.

2. The structures composing the fully developed umbilical cord are: Two arteries, one vein, Wharton's gelatin, and a layer of epithelium.

3. The causes of labor at full term are not definitely known. Among the theories held, or factors supposed to be involved, are the following: (1) The gradual distention of the uterus at the end of pregnancy, after it has reached the physiological limit of its growth, while the contents still continue to grow. (2) The fetus becomes a "foreign body," and as such excites uterine contractions and is extruded. (3) Fatty degeneration of the placenta and of the decidua. (4) The circulation of toxic products in the placental blood acts upon a center in the medulla and so produces labor.

PHYSIOLOGY.

1. *Mucous membranes* consist of an epithelial surface containing glands, a basement membrane, supporting connective tissue, with blood and nerve supply. They are found lining passages by which the internal parts connect with the exterior of the body.

Serous membranes consist of a single layer of endothelial cells, with no glands, upon a connective tissue membrane, with blood-vessels, nerves, and lymphatics. They form closed sacs lining visceral cavities.

3. The normal pulmonary capacity in an adult is about 225 to 250 cubic inches. It is the sum of the Tidal air (about 30 cubic inches), the Complemental air (about 100 cubic inches), and the Reserve or Supplemental air (about 100 cubic inches).

PATHOLOGY.

1. In *pernicious anemia* the blood would show: (1) A diminution in the number of red corpuscles; (2) a relative increase in the amount of hemoglobin; (3) poikilocytosis; (4) the presence of nucleated red cells; (5) variation in the size of the red cells; (6) the leucocytes *may be* diminished.

2. The tissues surrounding an indolent ulcer are: Congested and edematous, with an overgrowth of connective tissue (the blood-vessels being compressed), the surrounding skin is apt to be pigmented, the papillæ are enlarged, and there is proliferation of the epithelial cells.

3. *Carcinoma* is apt to occur at a later age; is found in structures derived from the epiblast or hypoblast; possesses a fibrous stroma, in which are found both blood-vessels and lymphatics; metastasis is by the lymphatics.

Sarcoma is apt to occur earlier; is found in structures derived from the mesoblast; there is no stroma between the cells; the blood-vessels are in direct contact with the tumor cells; there are no lymphatics; metastasis is by the blood-vessels.

GYNECOLOGY.

1. Amenorrhea is the absence of menstruation.

It is *physiological*: Before puberty, during pregnancy and early lactation, and after the menopause. It may also be due to: Absence or imperfect development of the generative organs; also to stenosis, obstructions, or atresia of the genital tract; also to operative removal of the uterus or its appendages. Other causative factors are: Acute infectious diseases, anemia, chlorosis, obesity, drug habits, alcoholism, overstudy, lack of exercise, exposure to cold, and various emotional causes.

Treatment consists in: (1) Removing the cause, if possible; (2) general treatment by means of proper hygiene, rest, diet, bathing, attention to the bowels, exercise, etc.; (3) drugs reputed to be emmenagogues, such as iron, manganese, aloes, strychnine, apiol, oxalic acid, savine, rue, and tansy.

2. Alexander's operation is an extraperitoneal shortening of the round ligaments of the uterus.

Indications for Alexander's operation are: Retroflexion, retroversion, or prolapse of the uterus, when the appendages are healthy and the uterus is not bound down by adhesions.

3. *Prolapsus urethræ* is an eversion of the mucous membrane of the urethra through the meatus. It generally looks like a small tumor, which may become swollen, inflamed, and edematous; later on it gets excoriated. If the entire circumference of the urethra is involved, the tumor is dark and congested.

The condition may be mistaken for a caruncle or a polypus.

4. Acute Cystitis. *Symptoms*: Frequent urination, with tenesmus and a burning sensation in the urethra, later on pain in the bladder, hematuria, and the urine contains pus and epithelial cells. Chills, rapid pulse, fever, and headache may also be present.

Treatment includes: Rest, administration of plenty of cold water or milk, diuretics, bland and mild food, laxatives, hot sitz baths or vaginal douches, irrigation of the bladder with antiseptic solution followed by solution of nitrate of silver.

PRACTICE.

2. The following table is taken from an elaborate one by Thayer:

TYPHOID FEVER.	MALARIAL (REMITTENT) FEVER.
Blood shows no leucocytes; eosinophiles diminished or absent; serum causes agglomeration of typhoid bacilli; malarial parasites and pigment absent.	Blood shows no leucocytosis; eosinophiles not notably diminished; serum does not cause agglomeration of typhoid bacilli; malarial parasites and pigmented leucocytes present.
Fever uninfluenced by quinine.	Fever disappears under quinine.
Usually epidemic; prevailing commonly in cities.	Is an endemic disease occurring particularly in rural districts; rarely epidemic.
Anemia absent, excepting in later stages.	Anemia more or less marked early in the course.
Characteristic roseola.	No characteristic exanthem; urticaria not uncommon.
Has a fairly characteristic course.	No distinct course.
Urine high-colored; bile absent; Ehrlich's diazo-reaction present during the height of the process.	Urine high-colored; may show a trace of bile; Ehrlich's diazo-reaction rarely present.
Onset gradual and progressive.	Onset generally intermittent.
The temperature does not reach 40° C. (104° F.) before the third or fourth day.	The temperature may arrive at 40° C. (104° F.) within twenty-four hours.
The apathetic expression of the face, the dryness of the tongue, and sordes upon the teeth are well marked and progressive.	These symptoms are not very marked.
Herpes rare.	Herpes common.

5.—

RHEUMATIC FEVER.	GONORRHEAL RHEUMATISM.
Generally attacks several joints and flits from one to another.	Generally monarticular (particularly favoring the knee).
Profuse acid sweats, fever, and rapidly developing anemia.	Symptoms are less severe.
	The disease occurs during or after a gonorrhea, and does not respond to antirheumatic treatment.

OBSTETRICS.

1. *Puerperal eclampsia* is an acute morbid condition, occurring during pregnancy, labor, or the puerperal state, and is characterized by tonic and clonic convulsions, which affect first the voluntary and then the involuntary muscles; there is total loss of consciousness, which tends either to coma or to sleep, and the condition may terminate in recovery or death.

The line of *treatment* as laid down by Edgar is as follows: For *preventive treatment*: (1) The amount of nitrogenous food should be diminished to a minimum; (2) the production and absorption of poisonous materials in the intestines and body tissues should be limited and their elimination should be aided by improving the action of the bowels, the kidneys, the liver, the skin, and the lungs; (3) the source of the fetal metabolic products and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ.

The *curative treatment* includes: (1) Controlling the convulsions (by chloroform, veratrum, or chloral); (2) elimination of the poison or poisons which are presumed to cause the convulsions; (3) emptying the uterus under deep anesthesia, by some method that is rapid and that will cause as little injury to the woman as possible.

3.—

Average capacity of child's stomach:	
At birth.	One and a quarter ounces.
Three months.	Four and a half ounces.
Six months.	Six ounces.
Twelve months.	Nine ounces.

5.

BRONCHO-PNEUMONIA.	LOBAR PNEUMONIA.
Generally secondary (to bronchitis or an infectious disease.)	Generally a primary disease.
Generally found in very young or very old.	Age has little influence.
Gradual onset.	Sudden onset.
Fever is not so high, and is irregular.	Fever is high and regular.
Ends by lysis, at no particular date.	Ends by crisis between sixth and tenth day.
Generally both lungs affected.	Generally only one lung affected.
Physical signs indistinct; and the evidences of consolidation are indefinite.	The physical signs are distinct; and there is a large area of consolidation.
Sputum is rather streaked with blood.	Sputum is rusty.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	April	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April	7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	10
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	April	14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April	13
Georgia	E. R. Anthony, Griffin	Atlanta	May	—
Idaho	J. L. Conant, Jr., Genessee	Boise	April	7
Illinois	J. A. Egan, Springfield	Chicago	April	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March	—
Kansas	T. E. Raines, Concordia	Topeka	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm. J. Maybury, Saco	Portland	March	17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City; St. Louis	April	
Montana*	Wm. C. Riddell, Helena	Helena	April	7
Nebraska	E. J. C. Sward, Oakland	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	4
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	B. D. Black, East Las Vegas	Santa Fe	June	1
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York; Albany; Syracuse; Buffalo	May	19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	March	17
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia; Pittsburg	June	—
Rhode Island	G. T. Swartz, Providence	Providence	April	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis; Nashville; Knoxville	May	—
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Sat Lake City	April	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	Apr	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

South Dakota.—This State, after 1910, will require as a condition of admission to a medical college at least one year in a college of liberal arts, or its equivalent.

New York.—Among the new features in the law governing the practise of medicine in this State are the following: (1) The regents have power to revoke the license of a physician or annul his registration, or do both. (2) Physicians from other States may be excused examination if they have been in reputable practice for ten years and have "reached a position of conceded eminence and authority" in the profession. (3) There is no longer an examination on practice, therapeutics, and materia medica.

Therapeutic Hints.

Sweating Hands or Feet.—

℞ Pot. permangan.....gr. v.
Aquæ.....Oii.

or:

℞ Acid. tannici.....℥i.
Spt. vini. rect.....℥iii
Aquæ.....℥vi.

or:

℞ Quin. sulph.....℥i
Spt. vini. rect.....℥i.
Aquæ.....℥v.

The above to be used as lotions twice a day.

or:

℞ Bol. fulleri.....℥iii.
Bis. subnitrat.....℥i.
Acid. salicyl.....℥i.
Acid. tartar.....℥i.

M. Sig.: To be used as a powder.

℞ Pot. permangan.....gr. xv.
Thymol.....gr. vi.
Aquæ.....℥iv.

M. Sig.: A piece of blotting paper steeped in the fluid to be placed in the shoes.—*Medical Press.*

Influenza.—For the cough, Ferguson recommends:

℞ Morphinæ. hydrochlor.....gr. ss.
Apomorph. hydrochlor.....gr. 3-4
Acid. hydrochlor. dil.....♏xx.
Syr. pruni. virg.....℥iv.
Aq. dest.....q. s. ad℥ii.

M. Sig.:—A teaspoonful occasionally.

or:

℞ Sod. bicarb.....gr. xv.
Sod. chloridi.....gr. v.
Spt. chloroformi.....♏v.
Aq. anisi.....℥i.

M. Sig.: Three times a day.—*Canada Lancet.*

Alveolar Abscess.—If followed by exudation of serum Buckley uses:

℞ Thymol.....gr. x.
Eucalyptol.....℥i.

M. Sig.—Dry the canal and seal in the remedy.—*Dental Digest.*

Psoriasis.—Kanoky suggests the following, known as the Asiatic pill:

℞ Acid. arsenosi.....gr. iv.
Pulv. piper. nigri.....gr. xxxiii
Glycerini.....
Pulv. gent. comp.....ãã q.s.

M. Ft. pil. No. 100.

S.: Commence with one pill before each meal, and increase one pill every second day until the full physiological effect is secured.

The following ointment is to be used after the surface of the lesions has been denuded of scabs by scrubbing:

℞ Hydrargyri ammoniat.....gr. xv.
Acid. carbolic.....
Balsam peru.....ãã gr. xl.
Ungt. paraffin.....℥x.
M. Fiat ung.....

S.: Apply at night, rubbing in well.—*Dietetic and Hygienic Gazette.*

Earache in Children.—To be used before tympanic exudation occurs:

℞ Acid. carbolici.....♏vij.
Ext. opii fl.....♏vj.
Cocain. hydrochlor.....gr. vj.
Atropinæ sulph.....gr. iij.
Aquæ.....♏iij.
Gelatinæ.....gr. xviij.
Glycerini.....℥iij.

M. div. in bougies No. xlvii.

S.: Insert one bougie in the auditory canal every two hours.—*The Practitioner.*

Catarrhal Pharyngitis.—

℞ Sodii biforat.....gr. xlv.
Resorcini.....gr. xxx.
Glycerini.....℥i.
Aq. menth. pip. ad.....℥vi.

M. S.: For local application.

℞ Pot. iodidi.....gr. xxx.
Iodi.....gr. v.
Mentholis.....gr. iiss.
Glycerini.....℥i.

M. S.: For local application.

℞ Acid carbolici.....℥iii.
Resorcini.....gr. xv.
Glycerini.....℥i.
A. q. menth. pip.....℥iss.
Aquæ ad.....℥viii.

M. S.: Use as a gargle.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 22, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	388	201
Diphtheria	371	45
Measles	1252	26
Scarlet Fever	797	39
Smallpox	..	..
Varicella	133	..
Typhoid Fever	33	4
Whooping Cough	9	1
Cerebrospinal Meningitis	10	9
Malarial Fever	..	..
Totals	2993	325

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending February 21, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
Alabama, Mobile	Jan.	25–Feb. 1	10	..
California, Los Angeles	Jan.	25–Feb. 1	5	..
San Francisco	Jan.	25–Feb. 1	10	..
District of Columbia, Washington	Feb.	1–8	13	..
Illinois, Chicago	Feb.	1–8	3	..
Springfield	Jan.	1–Feb. 6	10	..
Indiana, Indianapolis	Feb.	3–9	5	..
South Bend	Feb.	1–8	1	..
Iowa, Sioux City	Feb.	1–8	8	..
Kansas, Kansas City	Jan.	25–Feb. 8	3	..
Topeka	Jan.	25–Feb. 1	2	..
Kentucky, Lexington	Feb.	1–8	6	..
Louisiana, New Orleans	Feb.	1–8	5	Imported
Massachusetts, Fall River	Feb.	1–8	..	1
Minnesota, Winona	Jan.	28–Feb. 8	2	..
Mississippi, Greenville	Dec.	28–Jan. 18	3	..
Missouri, Hannibal	Feb.	3–10	2	..
St. Joseph	Dec.	28–Feb. 8	32	..
St. Louis	Dec.	28–Feb. 8	6	..
Montana, Butte	Jan.	28–Feb. 4	1	..
New York, New York	Jan.	25–Feb. 8	4	..
Ohio, Cincinnati	Jan.	31–Feb. 7	5	..
Tennessee, Knoxville	Feb.	1–8	2	..
Nashville	Feb.	1–8	18	..
Texas, Galveston	Jan.	31–Feb. 7	3	..
Virginia, Richmond	Jan.	25–Feb. 1	1	..
Washington, Spokane	Jan.	25–Feb. 1	7	..
Wisconsin, La Crosse	Feb.	1–8	10	..

SMALLPOX—FOREIGN.

Belgium, Ghent	Dec.	7–14	..	1
Brazil, Para	Jan.	11–18	5	2
Rio de Janeiro	Jan.	5–12	14	13
Canada, Halifax	Jan.	25–Feb. 8	2	..
Winnipeg	Jan.	25–Feb. 1	8	..
China, Shanghai	Dec.	22–Jan. 12	14	53
			Cases foreign,	deaths native.
Ecuador, Guayquil	Jan.	4–18	..	13
Egypt, Cairo	Jan.	11–18	1	..
France, Brest	Jan.	11–25	2	1
Paris	Jan.	11–25	16	..
Great Britain, Edinburgh	Jan.	18–25	2	..
India, Calcutta	Dec.	2–25	..	11
Italy—General	Jan.	23–30	67	..
Japan, Nagasaki	Dec.	22–Jan. 12	3	1
Kobe	Jan.	5–11	648	218
Yokahama	Jan.	6–13	37	9
Mexico, Mexico, city of	Dec.	23–Jan. 4	..	..

YELLOW FEVER——UNITED STATES.

Texas, Galveston	Feb.	16–18	2	2
In quarantine from S. S. *Crispin* from Manaos and Para.				

YELLOW FEVER—FOREIGN.

Brazil, Manaos	Dec.	21–Jan. 11	..	13
Para	Jan.	11–18	12	8
Rio de Janeiro	Jan.	5–12	1	..
Cuba, Cardenas	Feb.	14	1	1
			From S. S. *Britannic.*	
Santa Clara	Jan.	6–Feb. 18	4	..

CHOLERA—FOREIGN.

India, Calcutta	Dec.	14–28	..	120
Rangoon	Dec.	28–Jan. 4	..	2
Russia, General	Dec.	25–31	28	10
	Jan.	1–7	3	4
Tomsk	Jan.	1–8	2	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec.	28–Jan. 4	31	23
Mariquina	Jan.	4	..	Present

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Jan.	5–12	3	..
Ecuador, Guayaquil	Feb.	13	..	Present
India, Calcutta	Dec.	7–28	..	70
Rangoon	Dec.	28–Jan. 4	..	2

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Original Articles.

THE OPPORTUNITIES OF A GREAT MEDICAL SOCIETY.*

BY THOMAS E. SATTERTHWAITE, M.D.,

NEW YORK.

THE theme of my brief remarks this evening will be "The Opportunities of a Great Medical Society." This topic has been selected because an experience of four consecutive years, as your presiding officer, has forced on my notice some considerations bearing on the scope of our larger medical organizations, and this has seemed to me a proper time for expressing them.

But my remarks must be taken as suggestive merely, offering food for thought, if not for action.

There are, at present, four large medical bodies in this city: The New York Academy of Medicine, the County Societies of Manhattan and Kings; and this Association, which though not exceeding 650 in numbers, still is to be ranked, in point of size, with the other three. Each of these organizations assumes certain functions, duties and responsibilities, which are their distinguishing features.

But after all, I will venture to say, there are some general principles that should underlie all other considerations, governing the activities of each society, and I shall not claim credit for being the first to point them out. Along what lines, then, and in what manner is progress to be most profitably made?

Already in one section of this country there is a movement to have some sort of a post-graduate course for County Societies. Judging from a printed program, a County Society in Kentucky is to hold weekly meetings for this purpose, and on this one particular occasion the evening will be devoted to a symposium on such diseases as bone tuberculosis, bone syphilis, osteomalacia, and rickets. Presumably in each week of the months in which meetings are held, some subject of general interest to practitioners will be taken up and discussed in its several phases. This Kentucky Society is undertaking a *campaign of education*, and I take it, the plan may well serve as an example for other large societies, in which the general profession is interested. Of course, the precise method of carrying out such a plan will vary according to the special circumstances of each case.†

Supposing, however, that another course is pursued, and that a society undertakes, we will say, to "regulate the practice of medicine and surgery," holding out that among its prime objects are the prosecution of unlicensed or criminal practitioners, unregistered midwives, and medical impostors in general, it may always reasonably be objected that such a crusade, though laudable in theory and also in practice, if carried on with discretion and good faith, will still be open to the imputation that so-called *regulation* does not invariably regulate. Perhaps, too, some one may be bold enough to ask within what limits the society is proposing to exercise legal functions.

Law and medicine are two distinct fields. Certainly most members of these large societies, if the choice were offered them, would be apt to favor a preponderance of medicine rather than of law in their programs.

For we must first of all, in some way, keep abreast of the advances in the departments of medicine and surgery, if we are to practise with safety to our patients and satisfaction to ourselves. This is fundamental. No one of us has either the time or ability to cope successfully with even the principal problems that confront him. Even the specialist cannot do it in his own branch, while the difficulty of acquiring even a fair knowledge of new theories and practices is increasing day by day.

Such being the facts, and they cannot be refuted, it seems as if our larger medical bodies, representing as they do every phase of our art, may easily be the most important factors in disseminating this very important knowledge, and in the most palatable and digestible form.

Who that values his time does not prefer to spend a couple of hours in hearing some vexed question threshed out by experts, rather than to be forced to listen to a one-sided presentment of an unimportant topic, exploitation of immature ideas, or collections of ill-assorted facts.

Four years ago this Society, through its Council, undertook a campaign of education, and has kept it up year by year, only halting its scheme when the general public was looking for special information on such live questions as Pure Milk, Water Supplies, Disposal of Sewage, and the like; or the opportunity was particularly favorable for discussing more theoretical questions, such as Nutrition, Immunity, Pathogenic Protozoa, and so on, in which the profession at large is always profoundly interested.

More than this, who will not believe that opportune discussions on such public questions as Pure Milk, the Water Supply and Disposal of Sewage are not instrumental in shaping useful legislation, and that this Society did effective work thereby for the city, State and nation, perhaps.

Except for these occasional variations, however, the year has been divided in such a way that the entire fields of Medicine and Surgery have been systematically touched upon at their more important points: more time, of course, being given to general medicine and surgery, and less proportionately to the smaller specialties. For each session the best obtainable expert talent was secured, though in many instances we had to pass

*Retiring address by the president of the Medical Association of the Greater City of New York, February 17, 1908.

†Since the above was written a large number of county societies have taken up this idea.

beyond the limits of our membership. And yet every fellow qualified by experience to contribute was specially invited to do so; while the general discussion that followed was open to all.

As indicative of the efforts that have been made to secure the services of the best men, it may be said that more than fifty non-members have been invited in these four years to contribute to our programs, and they have represented a geographical area extending from Boston to Washington, and from Montreal to Savannah.

This statement also illustrates the fact, which is becoming constantly more evident, that many topics important for medical men to know can not be discussed advantageously without the help of laymen, of which the chemist, pharmacist, and civil engineer are good examples.

Fortunately the larger societies operating on this basis attract representative audiences, so that the lay specialist has an incentive to appear before them, particularly as reports of these meetings are published in our prominent medical journals and to some extent in the lay journals also.

Under these circumstances also, our larger societies should be more attractive than they are at present to the specialist, for they necessarily enlarge his field of view, which otherwise tends to become gradually smaller and smaller.

Most of us realize the close connection between general and special medicine, as well as between the theoretical and the practical. Examples are the relation between anatomy and surgery; between physiology, pathology, research work and clinical medicine. In fact, the more intimate these relations, the more favorably they react one on the other.

Medicine is both an art and a science. It has abandoned the realms of magic and mysticism, and is amenable to the same general laws that govern in the world of physics. It requires the same sort of apparatus, the same kind of reagents, and the same mental attitude and training that are essential for the physicist.

It follows naturally that a great society should be liberal. It has nothing to gain by putting up unreasonable bars. Singularly enough, we have never admitted women to membership, but on one occasion were glad enough to be instructed by a woman sent us officially as the Representative of the U. S. Government. And there are in this city to-day some women practitioners who are as well informed as any of us, in certain special lines.*

I will go a step further. But in so doing I am merely going to quote from my friend the President's address at the opening of the session of the one hundred and second meeting of the Medical Society of the State of New York, when, in speaking of our State organization, he stated that it "had one very definite purpose which made its first meeting a century ago significant—to associate all the reputable physicians of the commonwealth."

He adds: "I would bring every reputable practitioner in, simply drawing the line against those who for a very definite reason are unworthy, and so fulfill the purposes of the fathers."

Our State Society therefore fails of its original purpose so long as it undertakes to exclude any reputable licensed practitioners.

For more than twenty-five years some of us have taught homeopaths and eclectics in our post-graduate schools, have met them in consultation, and have ministered not infrequently to their physical ailments, and yet our societies have failed to accord them socially the position they legally enjoy. I would ask you to remember, however, that the bill requiring State examinations as a preliminary to practice in this State was passed *only* by the help of the homeopaths and eclectics. In the union of reputable licensed practitioners there is strength, rather than weakness. And I verily believe that if the representatives of our State and local societies had taken all of our licensed medical brethren into their confidence last year the Osteopath bill would never have been enacted in its present objectionable form. Past illiberality has excluded many of these men from our ranks; future liberality may bring them back.

There are now among us, unfortunately, in the public at large, some illogical, ignorant, or perverse persons who would like to set back the hands of the clock. They would, if they could, put an entire stop to animal experimentation; also to the use of the lower creation for medical purposes, though animals so employed have already been the means of saving thousands, perhaps hundreds of thousands, of human lives that would otherwise have been lost.

With a divided profession, the annual attempt to regulate vivisection by constantly increasing legislative restrictions is a perpetual menace to progressive medicine; with a united profession it might be a negligible quantity.

Another point that I will allude to briefly, is the great importance of the social element in a large society. Friendly greetings stand with some of us, for more than the scientific program. But whichever is placed first in any one's estimation, there is nothing but good to be had from a friendly word and a hearty grasp of the hand.

This social side of our meetings has been specially emphasized by our two extra Borough meetings this year, where the attendance was small enough to give each member the opportunity to meet and greet his fellows cordially, and yet large enough to encourage the speakers to put forth their best efforts.

I should be amiss if I failed to say that these large societies ought also to provide some practical protection for their members in the legitimate and proper discharge of their professional duties. In this connection I take pleasure in saying now that only once in the last four years has a fellow applied for legitimate relief. It was when his professional character had been unjustly assailed by the action of a city official. The matter was brought by the Council to the attention of the proper authority, and was promptly settled to the satisfaction of all concerned.

It must also be a matter of sincere gratification to us that during the same period not a single complaint was brought before the Council involving the character or conduct of any of the fellows. They seem to have been so impressed with the spirit of the golden rule that they needed no other.

I have a few words to say about the cost of membership. The founders of the Society wisely, I think, put the total annual charge for a member at the low price of $3.00, making the cost less than any other of the larger societies.

No practitioner can reasonably object to this low charge, and yet it helps to create a fund that is sufficient to provide us with at least twelve sessions in the year, publish our Transactions, defray all ordinary expenses, and leave a balance available for incidentals.

And now I will say, in drawing to a close, that

*Ten out of twenty-five of the reports published in a recent volume by the New York Department of Health (1905) were prepared by women practitioners in the employ of the department.

it has given me real pleasure as your President to meet and know so many, whose acquaintanceship and friendship I have learned to value.

Of course it goes without saying that the office has called for some expenditure of time and energy, and a trifle of substance, but the cordial support of my friends in the Council, on the Committees, and at our sessions, has much more than compensated for any personal outlay, while the growing interest in our doings, as shown by the gradually increasing attendance from year to year, has been a pleasant incentive for further effort.

But I want more especially at this time to thank the Council, one and all, for their uniform devotion to the interests of the Society, their regular attendance at its meetings, and their many useful and practical suggestions. The idea of holding four extra meetings annually in the Boroughs outside of Manhattan, inaugurated last month, originated with our esteemed and efficient Treasurer.

Our Corresponding Secretary has been diligent in season and out of season, ably filling the Presidential chair as occasion required.

Our Recording Secretary as Editor, has furnished us with the Annual Year Books, giving us well condensed and readable résumés of the association's work.

With these remarks I have relieved my mind of a weight that I now transfer to other and broader shoulders.

You will have a President who has all the qualifications necessary for maintaining a high standard of achievement; a membership that is representative of the best in the city; and lastly, a sufficient balance in the treasury.

Before closing I am going to venture the hope that the Campaign of Education that was inaugurated by this Society will continue to be a dominating feature; that its teachings will always be sound; its policies wisely aggressive.

One word more. There is an inevitable sadness on an occasion like this. Death has taken, in these few years, twenty-seven of our members from us. But they have "left on the shores of memory images and thoughts that shall not die."

Some names are entered on the rolls of fame. But the good deeds of none shall die forgotten

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REPORT OF THREE YEARS' WORK AT THE SEA BREEZE HOSPITAL FOR THE TREATMENT OF SURGICAL TUBERCULOSIS IN CHILDREN.*

By LEONARD W. ELY, M.D., ATTENDING SURGEON,

AND

BRAINERD H. WHITBECK, M.D., ASSISTANT SURGEON

NEW YORK.

THREE and one-half years ago the New York Association for Improving the Condition of the Poor (the A. I. C. P.) began in this country the experiment of treating tuberculous diseases of bones, joints, and lymph nodes at the seaside, and opened its hospital on the beach at Coney Island. The widespread attention that this experiment has attracted, and the importance to the profession of an exact knowledge of the results attained have caused us to undertake the task of making a complete report of the work since its inception. Only those living in a great city like New York can realize the difficulty of tracing cases after they leave the hospital. The poorer classes seem to spend most of their time moving about; to trace them from place to place is an Herculean task. Had we been left to our own devices in this we should have failed miserably; but the A. I. C. P. has put its resources at our disposal, and its trained nurse, with admirable skill, has succeeded in locating most of the former inmates of the hospital and in persuading them to present themselves for examination.

When the hospital opened, on June 6, 1904, it consisted of ten tents with a capacity of fifty patients. In the fall, the patients were moved into the permanent buildings of the Society on the beach at Coney Island, and there they have since been quartered. From the start reliance has been placed upon two great therapeutic agents—fresh sea air and good food. How these are administered will be seen below. Everything else is subordinate to them. At first a physician resided at the hospital, but soon this plan was abandoned in favor of one providing for frequent visits by the attending physician and the attending surgeon. Only the smaller operations were undertaken at the hospital. For the more serious operations the children were transferred to the hospitals of Manhattan or of Brooklyn, and then were returned. This was made possible by the cordial cooperation of these hospitals and by the courtesy of their medical boards. A dentist has also regularly visited the hospital. In other words, the highest skill has always been at our disposal. To avoid mistakes in diagnosis most of the earlier cases were seen by at least one other surgeon besides the attending surgeon.

When the present attending staff took up the work, about a year ago, it threw out a number of cases, as will appear from the histories, that had been regarded as tuberculous. This had also been done by its predecessors. It has been our policy, when any case applies for admission, to try to demonstrate that it is not tuberculous before it is admitted. We have put the institution to a severe test, and have admitted severe, desperate, and even hopeless cases. Obviously, the results cannot be judged, therefore, on a percentage basis of cures. When we take in an emaciated child, riddled with discharging sinuses, and with amyloid viscera, we are simply adding another death to our list. It will be seen from our histories that we have often done this. One form of tuberculosis we bar—pulmonary.

It is not practicable to print our histories in full. They are much too voluminous. Each history of a case, as it appears here, is, in fact, an abstract; and in making these abstracts we have had two objects in view: (1) to give a general idea of the condition and course of a case, and (2) to give enough of the symptoms and physical signs to enable anyone who is able to judge of the correctness of the diagnosis. We do not ask anyone to accept our dictum as to diagnosis or final results. Possibly from the facts here set forth others will draw conclusions different from ours. We maintain the following:

(1) The seashore is the best place for treating children with tuberculous adenitis. The children make a better recovery here than elsewhere. Those with adenoids and enlarged tonsils should be submitted to an operation as a start of the cure. Sea air does not permit us to dispense with this.

(2) The seashore is probably the best place for children with tuberculous joints, provided they can have there the same skilled orthopedic care as elsewhere. Their disease runs a somewhat milder and

*Read at the meeting of the Orthopedic Section of the New York Academy of Medicine, January 17, 1908. The limitations of space have rendered necessary editorial condensation of the case reports in this article.

probably a shorter course, and the functional results are better than those obtained elsewhere.

(3) Our results have been largely due to the careful attention (including feeding and nursing) which has been given the children.

(4) Our results justify pushing the work.

(5) A hospital such as this does better work than a public hospital under control of the municipality.

(6) Many cases of so-called bone tuberculosis are in reality syphilis.

We do not know whether there is anything "specific" about the seashore, or whether children simply thrive better and so overcome more quickly their disease.

As to treatment other than diet and fresh air, little need be said. We use plaster when we can in preference to braces. In Pott's disease we use first the Bradford frame, then plaster jackets; in hip joints, the short Lorenz spica. In knee joint disease after the acute stages, we also use plaster-of-Paris. Patients with large cold abscesses are transferred to the Manhattan hospitals, where their abscesses are opened, wiped out, and sewn up again with proper aseptic precautions.

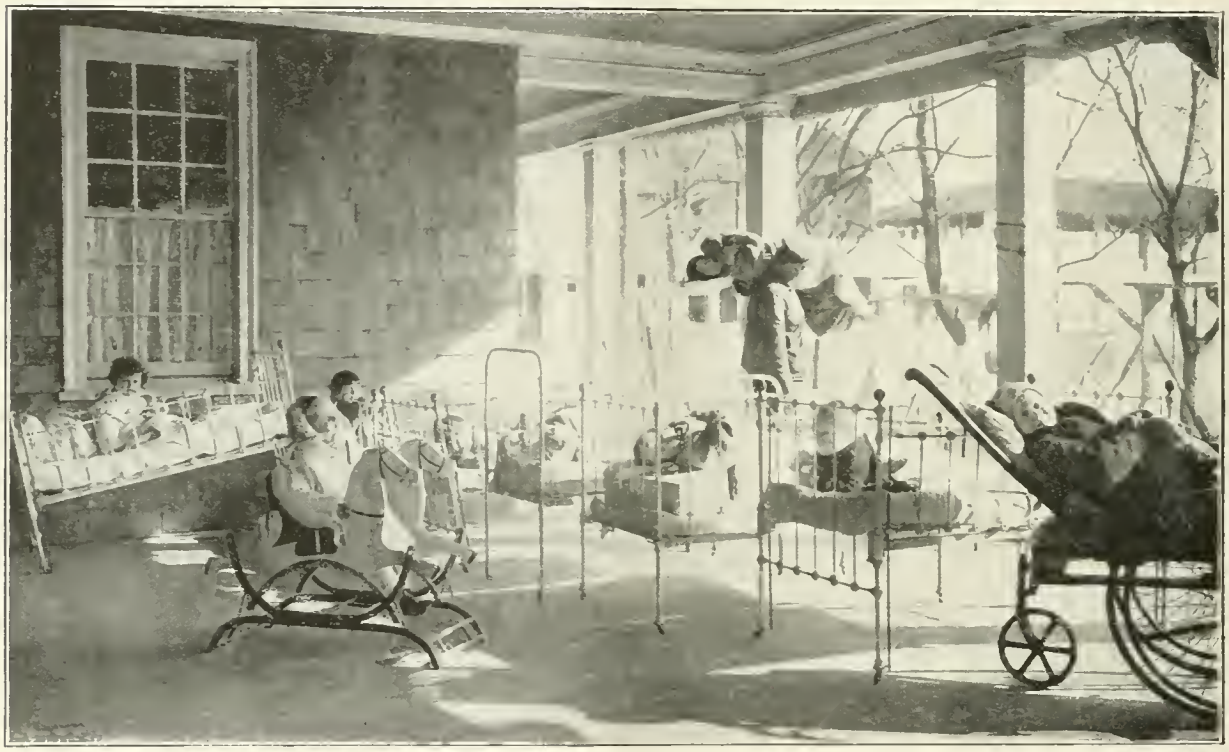

Fig. 1.—On the verandah in January.

The age limits are two to fourteen years. There are fifty beds. The medical staff has control of the admission and discharge of children. No patient is ever admitted without their consent.

Forty-two children are at present in the hospital. Eighty-two have been discharged. We possess histories of seventy-six of these.

Maggie B., 7 years. Admitted June 6, 1904. Discharged July 3, 1906. Cervical Pott's disease. Father probably died of tuberculosis. Patient has had measles, scarlet fever, and diphtheria. Two years ago her mother noticed that the child "rested her head between her shoulders." She took her to the Hospital for the Ruptured and Crippled, where a jacket and headspring were applied. These have since been worn. Child is poorly nourished and pale.

The course of the disease was uneventful. In the history we find notes of the straight back, restricted motion, etc. She wore her headspring for a year longer and was discharged cured, in good condition, and with very little deformity. Weight: on admission, 33 lbs. 9 oz.; on discharge, 42 lbs. 14 oz.

November 24, 1907. Child fairly well nourished, rather thin. She lives in most unsanitary quarters. She has a rather straight back, and the contour of her spine at the fifth cervical is broken. No other deformity is present, and function is perfect. This would appear to be a brilliant cure.

George G., 8 years. Admitted June 6, 1904. Discharged September 28, 1905. Diagnosis on admission, tuberculous adenitis; on discharge, syphilis.

George L., 2½ years. Admitted June 6, 1904. Discharged August 14, 1906. Tuberculous adenitis. Mother died of tuberculosis. Previous poor health. Had measles three or four months ago. After the measles a swelling was noticed on right side of neck. Child in fair condition, but anemic. Does not walk. In the right submaxillary region are several enlarged lymph nodes, and around them a puffy, soft swelling.

December 30. Both chains of postcervical glands much enlarged, also submaxillary glands on both sides. The boy improved in general health, but the lymph nodes remained about stationary until his adenoids were removed, May 20, 1906. Weight: on admission, 16 lbs. 11 oz.; on discharge, 26 lbs.

Wartburg Farm School, Mt. Vernon, November 14, 1907. Boy has been here for a year and has enjoyed health. He is now in good condition. One node the size of a bean on either side of neck just below angle of jaw. No other swollen nodes. No discharge from ear. Mouth breather. (Whitbeck.)

Bessie O'B., 13 years. Admitted June 6, 1904. Discharged June 5, 1905. Cervical adenitis; tertiary syphilis.

Petro A., 7 years. Admitted June 6, 1904. Discharged September 19, 1905. Tuberculous cervical adenitis. About ten months ago glands under right ear began to swell, and about five months later they broke down. A very complete operation was done at

St. Mary's Hospital four months ago, as appears from the history furnished by the hospital. Patient now has old open wound of operation posterior to lower third of right sternomastoid. Just behind the ear are three small discharging sinuses. One enlarged node in region of parotid, another under the chin. On the left side are two small nodules over mastoid, and a small scar over the parotid, still red.

September 19, 1905. Discharged cured. Weight: on admission, 40 lbs. 12 oz.; on discharge, 51 lbs. 8 oz.

Roosevelt Hospital, O. P. D., October 12, 1907. Glands under left angle of jaw slightly enlarged. Inguinal glands barely palpable; other glands not palpable. Old healed scar behind right angle of jaw and another over ramus. Spleen not palpable. Boy in fine condition.

Bennie M., 9 years. Admitted June 10, 1904. Discharged May 3, 1906. Tuberculosis of the left elbow joint. Family history of probable tuberculosis. The boy has had measles and pneumonia. The pneumonia was followed by an empyema which was drained. He has undergone four operations. About two years ago the left elbow became swollen and painful. It was operated upon in a hospital and has since been treated in a dispensary. Patient is poorly nourished. Left elbow is ankylosed. Small sinus is present, running down to the joint. Cicatrix of old operation wound in left axilla.

May 2, 1906. No pain nor evidence of active disease. About 10° of motion in the joint. Recommended for discharge—cured. Weight: on admission, 38 lbs. 8 oz.; on discharge, 45 lbs. 8 oz.

Roosevelt Hospital, O. P. D., October 8, 1907. Boy in fair condition. Fairly well nourished. Slight thickening about the left elbow, which is held in flexion. Old healed scar behind the internal condyle. No sign of active disease. No pain nor muscular spasm. Angle of greatest extension, 110°. Angle of greatest flexion, 75°. No rotation. Old scar of operation in left thorax.

Mariano A., 11 years. Admitted June 10, 1904. Discharged September 8, 1905. Tuberculosis of left ankle. About six years ago parents noticed that left ankle was inflamed. The disease grew worse and the ankle was operated upon four times in Italy and once at the Post-Graduate Hospital in this city. Afterward the patient was treated in a dispensary. Boy in poor condition; limps. Two deep wounds are present over internal and external malleoli of left ankle, from which an abundant foul discharge issues.

Discharged, September 8, 1905, cured. Weight: on admission, 64 lbs. 4 oz.; on discharge, 85 lbs. 2 oz.

October 6, 1907. Boy in fine condition; earns his living as coat-room boy; walks with barely perceptible limp. Foot is in slight calcaneo-valgus. Right calf measures 30 cm.; left calf, 23 cm. No motion in ankle joint. This is an excellent result.

Morris A., 5 years. Admitted June 14, 1904. Discharged June 30, 1907. Diagnosis on admission, Tuberculosis of lower end of left femur; on discharge, old osteomyelitis of left femur.

Fig. 2.—On the beach in winter.

Lucy E., 8 years. Admitted June 14, 1904. Discharged August 14, 1906. Tuberculosis of lower jaw. Duration of disease, one year. Child comes from St. Mary's Hospital, where she underwent two operations for her cervical lymph nodes and jaw. According to the history furnished us, carious bone and teeth were removed, and a mere shell of bone remained. Previous to this the patient had been operated upon four times at the New York Hospital. Child in good condition. Wound over left side of jaw discharging freely. Edema of right cheek. Wound under chin healed. Molars all gone on right side.

August 14, 1906. Discharged cured. Weight: on admission, 43 lbs. 12 oz.; on discharge, 62 lbs. 2 oz.

November, 1907. Child cannot be traced.

Joseph W., 5 years. Admitted June 14, 1904. Discharged December 13, 1905. Tuberculosis of inferior maxilla. Family history of probable tuberculosis. Duration of disease, seven months.

Patient has been treated at St. Mary's Hospital for two or three months, and has been operated upon there three times, as appears from the history furnished by them. Several pieces of necrotic bone were removed, and the right temporo-maxillary articulation was scraped. Boy is in bad condition; he can scarcely walk. Wounds under both sides of inferior maxilla are discharging pus.

The patient improved for a while; then his elbow and spine and finally his lungs became affected; and he went rapidly down hill and was removed on December 13, 1905, unimproved. He has since died.

David G., 10 years. Admitted June 16, 1904. Died, October 7, 1906. Left hip disease, etc. This was one of the desperate cases in which the effect of sea air was experimentally tried. He had had his disease for seven years, had been operated upon four times, and walked, on admission, with brace and crutches. His hip was suppurating extensively and had several sinuses. He was badly nourished and anemic. His liver was the seat of amyloid degeneration, and could be felt seven cm. below the free border of the ribs. His skin was yellow and pasty looking. His urine was loaded with albumin. The immediate cause of death was hypostatic pneumonia.

Florence V., 8 years. Admitted June 21, 1904. Discharged March 5, 1906. Diagnosis on admission, Tuberculous ulcers; on discharge, syphilis.

Kate B., 7 years. Admitted July 11, 1904. Discharged April 28, 1907. Tuberculosis of left knee.

Roosevelt Hospital, O. P. D., June 7, 1904. Family history and personal history negative. Scarlet fever one year ago. Four months ago, without known cause, the child began to limp and to complain of pain in left knee. The joint became swollen. She was treated at the Post-Graduate Hospital with a brace. Child in good condition; wears a brace which does not fit. Left knee swollen and flexed at 140°; its contour changed. Posterior subluxation. No motion in joint. Atrophy of thigh and calf.

July 11. Admitted to Sea Breeze. Child fairly well nourished.

January 10, 1907. Knee in slight flexion; slight thickening about joint. Patella slightly movable. Angle of greatest extension, 160°; of greatest flexion, 140°. To have passive motion.

April 28. Discharged, cured. Weight: on admission, 43 lbs. 4 oz.; on discharge, 58 lbs. 10 oz.

Roosevelt Hospital, O. P. D., October 11, 1907. Child in fine condition. Moderate limp. Left knee in slight flexion. Contour of joint slightly changed. Patella movable. Legs of equal length. Atrophy of thigh, 1¼ inches; of calf, ½ inch. Angle of greatest extension, 165°; of greatest flexion, 140°.

Here is a case that we can trace almost from the start. Doubtless it is to be regarded as an excellent result.

Margaret S., 5 years. Admitted July 15, 1904. Discharged December 21, 1905. Tuberculous peritonitis. Duration of disease, one year. Child is pale, emaciated, and weak, and walks badly. Abdomen is large, tense, resistant, and tender. The skin is brownish and dry. Enlarged lymph nodes in groin and in neck from the size of a pea to that of a hazel nut. Weight, 27¾ lbs. The patient had an almost constant diarrhea while in the hospital. Her lungs were found to be affected in December, and she was removed from the hospital. She died shortly afterward.

Fig 3.—A group of frame cases.

Florence, McG., about 2 years. Admitted July 20, 1904. Discharged December 2, 1906. Lumbothoracic Pott's disease. No previous history was furnished with this case except that disease had lasted for six months. On the history slip appears the fact that she has the "typical stoop," and that she is in poor condition and has a purulent otitis media. She was put on a modified Bradford frame and appears to have gone steadily downhill. Various abscesses developed, and on December 2, 1906, the child was removed from the hospital in very bad condition.

October 16, 1907. Child reported still alive, but very low. Sinuses still discharging.

Frank T., 3½ years. Admitted July 25, 1904. Spina ventosa or specific osteoperiosteitis.

September 4, 1905. Discharged, cured. Weight: on admission, 21 lbs. 11 oz.; on discharge, 31 lbs. 4 oz.

Charles O'C., 8 years. Admitted July 26, 1904. Discharged October 21, 1906. Right hip disease. Patient's father died of tuberculosis. Patient has been treated for past year at Polyclinic and Hospital for Ruptured and Crippled. About three months before admission here an abscess was opened in the thigh, and since then this has discharged through a sinus on the outer surface of thigh. General condition fair. Weight, 35 lbs. For a while after admission the child improved and gained in weight. Then the suppuration grew worse; amyloid degeneration of the viscera took place; and, on his removal from Sea Breeze, he was taken to Seton Hospital, where he died. This appears to be a case, not necessarily fatal on admission, which did not benefit from sea air.

Katie W., 6 years. Admitted July 29, 1904. Discharged April, 1907. Tuberculosis of left knee. Family history negative. Child had diphtheria last year. She has had measles. Last January child fell on iron grating, injuring her left knee. The injury was followed by some pain. Two weeks later the joint swelled and became tender. In February she applied at St. Mary's Hospital for treatment, and remained there eight weeks. Since then she has been at her home. Child in good condition; limps. No sign of abscess.

December 16, 1904. General condition good. Wearing Thomas brace with high shoe. R. A., 20; R. T., 13; R. K., 8⅝, 8½, 7¾; R. C., 8¼; L. A., 20¼; L. T., 12; L. K., 8, 8½, 7⅝; L. C., 6⅞; A. G. E., 180°; A. G. F., 135°. Brace removed. Plaster-of-Paris applied. The progress in this case was comparatively uneventful. The patient evidently improved steadily, as can be seen from the notes.

April, 1907. Discharged. Weight: on admission, 38 lbs.; on discharge, 48 lbs. 8 oz.

Roosevelt Hospital, O. P. D., October 9, 1907. Child in fine condition, goes to school, and walks and plays without limp. Knee in full extension. Slight thickening about the joint. Patella freely movable. Measurement show the affected leg one inch longer than the other; the left thigh one inch less in circumference than the right, and the left calf ½ inch less than the right. Full extension was possible, and flexion to an angle of 60°; *x*-ray negative. The beautiful result in this case might make one sceptical of the correctness of the original diagnosis; but the history, the lengthening of the affected limb, the atrophy, and the slight thickening cause us to concur.

Ellen F., 4 years. Admitted August 10, 1904. Discharged January 10, 1906. Tuberculous cervical adenitis. Mother died of tuberculosis. About one year ago some small, red areas were noticed in neck. They were not cared for and broke down. Child seems well nourished, but anemic. There are five areas of redness and induration in the cervical region in both sides, three of which are discharging. This child improved in her general condition, and on July 21, 1905, it appears that all her cervical nodes were healed. Shortly afterward one broke down and discharged for a couple of months.

Fig. 4.—A group with plaster jackets.

January 10, 1906. Discharged, cured. Weight: on admission, 27 lbs. 15 oz.; on discharge, 38 lbs. 8 oz.

Roosevelt Hospital, O. P. D., October 10, 1907. Child in fine condition; enjoys health; goes to school. Old healed scars in neck. A few small nodes palpable under left angle of jaw and a few in inguinal region.

Tom S., 5 years. Admitted August 20, 1904. Discharged December 31, 1904. Cervical adenitis. A brother of Florence S. Father died of tubercu-

losis in 1903. Six brothers and sisters dead of various diseases. Pneumonia at three years; measles; suffered from cough all last winter, and during this period mother noticed that child's neck was swollen.

Examination: Boy in good condition. Scattered along anterior margin of right sternomastoid muscle are small nodes the size of a pea or smaller. On the left side above the clavicle and anterior to sternomastoid muscle are nodes of various sizes. In the upper third of the muscle on this side is a diffuse soft swelling.

December 31, 1904. Discharged, cured. Weight: on admission, 44 lbs.; on discharge, 47 lbs. 8 oz.

Roosevelt Hospital, O. P. D., October 7, 1907. Inguinal, epitrochlear, and submental glands slightly enlarged and hard. Mouth breather, round shouldered. Old scar under the skin on the right side of neck. Examination shows the presence of adenoids. The boy also has frequent earache. Removal of adenoids advised.

Nathan N., 5 years. Admitted August 22, 1904. Discharged July 5, 1907. Left hip disease. Father has tuberculosis. Patient had pneumonia when two years of age. Two years ago patient began to complain of pain in left leg. This was followed by an abscess, which was opened at the Post-Graduate Hospital. Since then the boy has been treated at the dispensary of that hospital.

Examination: Child in poor condition. Operation wound still discharging on external surface of left hip.

December 30, 1904. General condition poor. Hip joint very sensitive. Profuse discharge from the two sinuses. The thigh is in flexion and marked adduction, and is one inch smaller in circumference than its fellow. Its range of motion is limited to 5°.

January 3, 1907. No sign of active disease. Marked thickening about the joint. The left lower extremity is an inch and three-quarters shorter than the right, and two and one-half inches smaller about the thigh. The angle of greatest extension is 180°; angle of greatest flexion, 160°.

July 5, 1907. Discharged, cured.

Roosevelt Hospital, O. P. D., October 7, 1907. Child in good condition. Small inguinal glands barely palpable on the right side. Marked limp. Left thigh in extension and slight adduction. The range of motion is increased to 90°. The left trochanter is one inch above Nélaton's line. Old scar five inches long over the external surface of the upper part of the thigh.

Freddie S., 3½ years. Admitted August 21, 1907. Discharged February 27, 1907. Left hip disease. Mother has pulmonary tuberculosis. Patient has previously been in good health. In the early part of January last he began to complain of pain in left leg, which rapidly grew worse; he screamed with pain when thigh was moved or touched. On January 9 he was taken to the Laura Franklin Hospital, and at that time had lost flesh and had a temperature of 104.5°, which later went to 105°. His urine showed a trace of sugar and of albumin. Blood count showed simple anemia. Spasm of muscles about hip. Late in January an abscess formed on right side of neck and burst. The temperature continued high until February and the child grew very thin. In March he began to improve. Now he is well nourished and has good color. He wears a brace but refuses to walk. The thigh is in abduction. Motion of it causes pain.

December 2. Thickening over trochanter. No sign of abscess. No atrophy of thigh. Angle of greatest extension, 175°; angle of greatest flexion, 90°.

January 10, 1907. Boy in excellent condition; walks without limp. Left thigh in indifferent attitude. Double knock-knee. No sign of disease in hip. Motion free in every direction. No thickening about joint. Left lower extremity is ¼ inch longer and left thigh ⅜ inch smaller in circumference than its fellow. "Child has probably never had hip disease" (Ely). The *x*-ray shows coxa valga and a darkening of the shadow of the neck on the plate.

February 27, 1907. Discharged, cured.

Roosevelt Hospital, O. P. D., October 1, 1907. Boy in fine condition. Examination gives practically same results as that of January 10. Absolutely no sign of disease. Spleen and lymph nodes normal; teeth good.

Here is a case with a fairly typical history of hip-joint disease. When we examined him carefully in January we scouted the correctness of the original diagnosis because there were absolutely no signs left of joint disease. But what else could it be? Certainly not a fracture of the neck, nor a strain, nor an acute epiphysitis, nor a gonorrheal joint. We are forced to the conclusion that it must be one of those rare cases of hip disease with complete recovery.

Willie H., 9 years. Admitted August 24, 1904. Discharged June 4, 1905. Tuberculosis of right shoulder joint. Family history negative. Two years ago without cause the boy began to complain of pain in his right arm. Eight months later swelling and redness appeared near the shoulder. One year ago he was operated upon, and three months ago the shoulder was operated upon again.

Examination: Boy in good condition. Apparent disease of the right shoulder joint. Limitation of motion. Sinus on the anterior surface of shoulder still discharging pus of foul odor. The rest of the operation wounds are healed.

June 4, 1905. Scars posterior and anterior to joints, about five inches long, healed. General condition excellent. No motion at the joint. One-quarter inch atrophy of arm. Discharged, cured. Weight: on admission, 57 lbs. 8 oz.; on discharge, 63 lbs. 2 oz.

Roosevelt Hospital, O. P. D., October 21, 1907. Boy in good condition; goes to school; enjoys health; no trouble with the shoulder. Marked shortening of the right humerus. Old scars in front and back of shoulder joint, one in axilla. The head of the bone is gone. Complete ankylosis. No sign of active disease. Left epitrochlear, left cervical, and inguinal glands on both sides palpable.

Margaret D., 3½ years. Admitted September 2, 1904. Discharged February 23, 1907. Tuberculosis of left ankle. Family history and personal history unascertainable. Child is well nourished; cannot walk. Five discharging sinuses about ankle.

The child was discharged, cured, on September 23, 1907, and was recommended to the Ruptured and Crippled Hospital for an operation to correct the valgus position of the foot. The shaft of the tibia was not thickened, nor did the *x*-ray show the thickening of an old osteomyelitis. The cartilaginous surfaces of the ankle were roughened.

This case shows well the value of conservative treatment in tuberculosis of the ankle. The patient had been operated upon several times at one of the large New York hospitals before entrance to Sea Breeze, and had finally been discharged because the parents would not consent to amputation!

Emil H., 13 years. Admitted January 17, 1905. Discharged December 21, 1905. Right hip disease; pulmonary tuberculosis; amyloid degeneration of the viscera. The patient has had hip disease for five years. General condition is poor. He is ema-

ciated, cachectic, and very anemic. Six sinuses are present in the region of the right hip. Spleen palpable 1½ inches below margin of ribs. Liver palpable 7 inches below ribs in midclavicular line. Surface of liver is smooth and the edges sharp.

The boy improved for a while. Then he began to go down hill very rapidly, and on December 21, 1905, he was discharged on account of pulmonary involvement.

The boy has since died.

James B., 9 years. Admitted January 30, 1905. Discharged November 3, 1906. Tuberculosis of right ankle. Boy comes from S. P. C. C. Previous history unascertainable. Duration of present disease, two months, with no history of injury. Wears Thomas brace; limps. Foot swollen and painful. In front of right internal malleolus is a discharging sinus. Motions limited in all directions in right ankle. One inch atrophy of calf. No glandular enlargement. Moderate anemia. Walking painful.

April 17, 1906. No pain; abscess healed. Functions of foot almost normal.

The patient continued to wear a brace or plaster until August, 1906. He was discharged "in perfect health" in November. Weight: on admission, 45 lbs. 11 oz.; on discharge, 58 lbs.

Roosevelt Hospital, O. P. D., November 16, 1907. Boy in good condition; goes to school. Small, unpigmented scar over internal malleolus of right leg. No sign of active disease. Motions free in all directions. Teeth good. Spleen normal.

Elsie K., 10 years. Admitted February 17, 1905. Discharged March 14, 1906. Left hip disease. On admission the condition of this patient was poor. There is no note in her history as to the length of time the disease had lasted, nor what had been its course. She had five sinuses which discharged freely. Her hip was in flexion and possessed only about 5° of motion. She ran a very severe course at the hospital and had much pain. On July 7 an abscess was opened in buttock, and ten ounces of pus was evacuated. The discharge from the sinuses gradually lessened, two of them healed, and the child's general condition slowly improved. She was removed from the hospital by her parents against advice. Improved.

Nathan S., 6 years. Admitted February 22, 1905. Discharged February, 1907. Tuberculosis of right ankle and of two fingers. Previous history unknown. Boy in poor condition; hops on left foot. Motion limited in right ankle. The astragalus is the seat of disease. One sinus behind interior malleolus.

The improvement in this case was steady and practically uneventful.

September 22, 1906, there appears this note: No sign of active disease. Leave off brace. Motion in ankle limited. Flat foot; build up shoe ¼ inch on inside.

December, 1907. Child cannot be found.

Max G., 5 years. Admitted February 22, 1905. Discharged September 1, 1906. Lumbothoracic Pott's disease. Patient's condition on entrance was very poor. He was emaciated, unable to walk, and weighed 26 lbs. 4 oz. His spine was extensively involved, and he had one discharging sinus in right thigh and a large abscess in left iliac region. A diarrhea was present with incontinence of urine and feces. His lungs were affected, either at the time of admission or soon after entering. At the time of the patient's discharge he was pronounced incurable, and the diagnosis then read: Tuberculosis of spine, of lungs, and possibly of intestines.

Died at Seton Hospital, July 9, 1907.

Minnie M., 10 years. Admitted March 5, 1905. Died August 20, 1906. Thoracic Pott's disease.

The general condition of the patient on admission was very poor. She was pale and anemic. Liver and spleen were enlarged and the sharp edge of the former could be felt at the level of the umbilicus. Lower extremities were edematous, and the lungs appear to have been affected slightly. One sinus was discharging in right gluteal fold. She weighed 19 pounds 4 ounces. Shortly before death an abscess ruptured into the rectum.

The cause of death appears in the history as Pott's disease, amyloid degeneration of liver, spleen, and kidneys, and hypostatic pneumonia.

John W., 8 years. Admitted April 8, 1905. Died July 19, 1905. Right hip disease, etc. Child emaciated and cachectic. Weight, 29 pounds 5 ounces. Sinuses discharging from right thigh; offensive odor. Heart rapid and regular. Lungs, puerile breathing. Liver and spleen enlarged. Hip very sensitive. Moribund, and admitted on urgent request of a member of the advisory committee.

The patient went downhill until death closed the scene.

Annie M., 6½ years. Admitted May 10, 1905. Discharged April 19, 1906. Right hip disease, amyloid degeneration, etc. Previous history unrecorded. On admission child was emaciated. Weight, 26 pounds 8 ounces. The hip was badly diseased and was discharging profusely from nine different sinuses. General glandular enlargement. Dilated, weak, rapid heart. Abdomen distended. Liver and spleen palpable.

The patient grew slowly but steadily worse. The amyloid degeneration became more marked, and on April 19, 1906, on account of pulmonary involvement, the child was removed to Seton Hospital and died there on September 29, 1906.

James B., 7 years. Admitted July 10, 1905. Died September 29, 1905. Left hip disease. Father and mother died of tuberculosis. Child is emaciated, weighs 31¼ pounds; does not walk. Hip very sensitive. Ulcer on right heel. Skin of back very tender. No motion in hip joint. Large, freely discharging abscess external to crest of left ileum. Swelling in left groin. Three sinuses leading down to abscess on inside of thigh.

Patient had foul discharge of blood and pus per rectum. He grew steadily worse. The cause of death on his history sheet reads: Hip disease. Complications, septicemia, amyloid degeneration of viscera. There was no autopsy.

Elmer C. Admitted July 16, 1905. Discharged November 4, 1905. Tuberculosis of left knee. Patient walked on crutches when he entered and was in fair condition. He had had his disease for 3½ years. Plaster-of-Paris was applied; but it appears from his history that he was cruel to animals and he was expelled from the hospital in disgrace.

Pasquale F., 3 years. Admitted August 8, 1905. Discharged September 25, 1906. Left hip disease. Duration of disease and course of treatment unknown.

Examination: Boy is in poor condition and unable to walk. His left hip is flexed at angle of 110° and possesses a range of motion of only about 5°. Joint is very sensitive. Three sinuses about the hip.

In the year that the patient was at the hospital he improved not at all. He has since died. The date of death is unknown.

Fred Q., 14 years. Admitted November 25, 1905. Discharged August 11, 1906. Tuberculosis of left knee. Tuberculous family history. Child has had

measles, scarlatina, diphtheria, and pertussis. Wears plaster-of-Paris on his left knee. No measurements or physical signs were taken.

August 3.—Atrophy of 2¼ inches in thigh and ¾ inch in calf. Knee in extension, 15° of motion. Slight swelling.

August 11.—Discharged, cured. Weight: On admission, 70 pounds 4 ounces; on discharge, 87 pounds 2 ounces.

December 1, 1907.—Boy in good condition; walks well, with no limp. Contour of left knee slightly changed. No fluid in joint; some creaking on motion. The knee is in full extension; flexion is slightly limited. Cervical and inguinal glands palpable. Teeth in good condition. Half an inch atrophy in thigh, and half an inch in calf. Angle of greatest extension 180°; angle of greatest flexion 75°.

Florence S., 8 years. Admitted November 26, 1905. Discharged January 28, 1906. Cervical adenitis. Father died of tuberculosis in 1903. Superficial glands, both submaxillary and both cervical chains, are palpable; also both inguinal.

January 28, 1906.—Discharged, much improved. Weight: On admission, 46 pounds 14 ounces; on discharge, 47 pounds 12 ounces.

Roosevelt Hospital, O. P. D., October 7, 1907.—Child in good condition. Mouth breather. Epitrochlear, submental, and inguinal glands slightly enlarged and hard. Examination reveals adenoids.

Willie S., 4 years. Admitted December 21, 1905. Discharged August 11, 1906. Cervical adenitis.

This patient had been treated for some time at the Woman's Infirmary. His general condition on entrance was poor. His cervical glands, anterior and posterior chains, were enlarged. Scar in front of lower attachment of sternomastoid with unhealed sinus in the middle of it. Both ears discharging freely; discharge has offensive odor. Scars: One on left buttock in gluteal fold, another external to this; one in right thigh just below great trochanter; one in right popliteal space; one over internal condyle. Teeth good. Tonsils hypertrophied.

August 3.—General condition excellent. Sinus healed. No evidence of abscess. Glands at angle of both inferior maxillaries palpable. Discharge recommended. Weight: On admission, 35 pounds 5 ounces; on discharge, 36 pounds 7 ounces.

Roosevelt Hospital, O. P. D., October, 1907.—Excellent condition. Slight general glandular enlargement—cervical, epitrochlear, inguinal. Scars all healed. Original diagnosis confirmed. Cured.

Grace M., 7 years. Admitted May 16, 1906. Discharged August 27, 1906. Cervical adenitis. Mother died of tuberculosis.

Duration of disease, one year. Various glands in neck and axilla enlarged. Excoriation around right ear. Opacity in left cornea. General condition fair.

Discharged improved.

November, 1907.—Child cannot be found.

Daniel R., 8¾ years. Admitted August 22, 1906. Discharged August 2, 1907. Congenital syphilis.

Joe R., about 7 years. Admitted August 22, 1906. Discharged August 2, 1907. Diagnosis: On admission, tuberculosis of the carpus; on discharge, syphilitic osteoperiosteitis.

John C., 9 years. Admitted January 2, 1906. Discharged April 4, 1906. Double hip disease; tuberculosis of right ankle; nephritis. Patient has been treated for past six years. General condition very poor. Weight 52 pounds 12 ounces. Inability to walk. Both hips in flexion, ankylosed. Many discharging sinuses from left hip. Tuberculous process in right tarsus and fibula excised, and foot in equinus. Urine loaded with albumin, 25 per cent. Prognosis: Surely fatal.

March 12, 1906.—Edema of both legs and feet. Removed from hospital.

Died at home about December, 1906.

Willie G., 9 years. Admitted March 6, 1906. Discharged June 1, 1906. Tuberculosis of right knee. General condition poor. The knee is ankylosed at angle of 175°, and in the neighborhood of the joint there are four discharging sinuses. Wears a Thomas knee brace. Atrophy of thigh, 2¼ inches; of calf, 1 inch.

May 30.—General condition much improved. Two of the sinuses are healed. Discharged at request of parents, to return to Ireland. Weight: On admission, 51 pounds 2 ounces; on discharge, 54 pounds 14 ounces.

November, 1907.—The boy cannot be traced.

Stanley H. Admitted March 30, 1907. Discharged May 29, 1907. Cervical adenitis. Of this patient we possess no reliable data as to the course of the disease. His cervical nodes were enlarged at his entrance, and he had two old healed scars.

Judith M., 3 years. Admitted June 23, 1906. Discharged September 26, 1906. Multiple sarcomata.

James McG., 11 years. Admitted July 27, 1907. Discharged September 27, 1907. Lumbar Pott's disease. Patient entered the hospital on crutches, pale and thin. A jacket was applied and the boy's condition improved markedly. He gained 6 pounds in two months, and then left on account of homesickness.

November 25, 1907.—A swelling which appeared several weeks ago in the boy's back, broke about one week ago, and is now discharging a thin serous fluid from an opening that looks like a pepper box.

Thirty patients were admitted in the early summer of 1904, and were discharged after a stay of two or three months. When the hospital moved into permanent quarters the number of patients was reduced from fifty to thirty, and was later increased again. We have been able to trace only eleven of these short-time cases. Two or three are manifest examples of incorrect diagnosis. Of the rest little is to be learned by a perusal of their histories. The time of their stay was too short to produce much effect. Most of them appear to have gained in weight while at the seashore, and the majority of the gland cases examined are now in good condition.

167 West Seventy-first Street.

SOME NEW FACTS REGARDING HEART DISEASE.

By SANITÄTSRAT DR. WACHENFELD,

BAD NAUHEIM, GERMANY.

Only a comparatively short time ago valvular lesions were considered the most important group of cardiac diseases. They were held responsible for a long train of various disturbances within the organism, and they were thought to be the cause of congestive conditions of the more important organs. The belief that the heart muscle was very infrequently the seat of disease was still prevalent in the seventies of the past century, but when, as a result of the severe epidemic of influenza in 1889 and the following years, many deaths occurred from cardiac asthenia, the profession came to the

conclusion that healthy heart muscle is at least equally, if not more important than accurately closing valves. The generally accepted views concerning the importance of valvular disease proper are very confusing. The reason for this may be found in the fact that we cannot readily abandon certain views too long held, many of the latter became dogma, and upon them theories have been built which could not easily be made to harmonize with certain undeniable facts. Work hypertrophy (increased work due to hypertrophy), and dilatation were the two dogmas which no one dared to assail nor question, and as long as we consider these relics seriously our search for more light will be of no avail.

Let us consider primarily what I shall term "work hypertrophy," or, as above said, increase, of the ability of hypertrophied muscle to perform more work. Granted that the cells of hypertrophic heart muscle are larger than the normal, no competent pathologist has ever to my knowledge claimed that this increased the strength or capacity for work, of the contractile element of such muscle. On the contrary, they are unanimous in the opinion that hypertrophied heart muscle tissue has pronounced degenerative tendencies. It is also certain that, as the muscle cells increase in size, intercellular connective tissue also increases considerably. This alone renders an hypertrophied muscle unable to perform even as much work as a normal one. Orth emphasizes in his work on pathological anatomy the inability of the hypertrophied heart walls to relax completely, and says that even the thin wall of the right heart shares this fate even when slightly hypertrophied. It is certain that a cardiac contraction depends upon the difference between the greatest relaxing and the greatest contracting ability of the muscle. The less complete the relaxation, the less powerful the contraction. In other words, a maximum degree of energy can be obtained only through a maximum relaxation and contraction. It is thus plain that an hypertrophied heart muscle cannot perform more work than a normal one; it can at its best only produce less. We may therefore safely claim that "work hypertrophy" does not exist. Many have heard this statement long ago, and I feel that I am not laying down anything new. Romberg says that he does not see why increased work demanded of the heart could result in hypertrophy of its muscle cells, and while he does not appear disposed entirely to deny the occurrence of work hypertrophy, he seems to doubt it very much. The work of Romberg and other noted authors plainly attests the difficulty with which we tear ourselves loose from old-established dogma. On one page one author claims that the occurrence of work hypertrophy is very doubtful and unlikely, and on the very next says that this condition assists at times in overcoming certain difficulties. Hypertrophy of the cardia should never be considered a source of increased power; we would surely not credit any other hypertrophied and consequently poorly nourished muscle with the ability to produce greater power. It cannot here be a question of hypertrophy, but one of profound disturbance of general metabolism with its accompanying congestion of cell material. This explains why cardiac enlargement is so rarely found alone, but almost invariably accompanied by more or less disease in other organs.

Not less than the dogma of work hypertrophy is the one of dilatation admirably suited to cloud our views regarding the true existing conditions. The blood circulates within a system of closed tubes and is therein kept circulating by the peristaltic action of the heart and arteries. We have at one end of this circulatory apparatus the capillaries, whose walls lack the necessary muscle to assist in propelling the blood; at the other end, to equalize this shortcoming, we have a strong muscularis, which has at one point developed into the still stronger heart. Their combined power supplies what the capillaries lack. The power evolved by the heart also propels the blood through the lesser or pulmonary circulation. The thin-walled veins must possess greater elasticity than the arteries; they must be able to accommodate, besides their blood contents, other substances which enter them through the capillaries from the cells of the various organs. Their walls must consequently be less tense and more extensile than those of the arteries, so that the entrance of these substances which come through the capillaries from the lymph channels may not meet with too much resistance when entering their lumen. It is very likely that the muscularis of the veins is so weakly developed on that account. Within the veins the blood column is propelled chiefly from valve to valve by cardiac contraction and peristalsis of the left side of the circulation, so the pressure under which the blood reaches the right auricle must necessarily be very low. It can, however, not be negative in the portion of the large veins proximate to the heart, as Jacobsohn has stated. The pressure cannot be negative in any portion of the circulatory apparatus. To provide such pressure it would be indispensable to have a vacuum at some point within the circulatory apparatus. It goes without saying that a vacuum within the circulatory system is not to be given even a thought. It is undoubtedly true that the blood, when it returns to the right auricle, does so under very low pressure; we may safely say under the remainder of the pressure which has propelled it through the heart, arteries, capillaries, and veins. Whatever the views on the subject are, it is accepted that the pressure within the great veins in their portion nearest to the heart is nominal. However we credit the blood which so enters the heart with the ability to distend it unduly and produce dilatation of its muscularis, in the same breath we admit, however, that this same muscle can drive into the aorta a column of blood under measurable and comparatively great pressure, without suffering any damage. How can these facts be made to harmonize? They cannot at all.

Let us now see how the heart could otherwise be distended and suffer dilatation. There is no other known force which could accomplish it. So we must deny that dilatation can ever occur. Extension of the limits of cardiac dullness which is often found on percussion is merely, when not due to hypertrophy, caused by a change in position of the organ. We often find post-mortem hearts, whose cavities seem enlarged, this is due to optical illusion; a cavity whose walls are collapsed seems smaller to us than one whose walls are gaping and permit a view of the interior. If the walls of heart cavities are more or less hypertrophied and for this reason incapable of complete collapse and coaptation, the cavity will appear large to the eye. Again, perfectly normal hearts may be of different dimensions. Both Hoffmann and Krause studied a long series of hearts normal in construction, to ascertain their dimensions, paying special attention to the cavities. They found that the capacity of one

normal heart was more than double that of another. Their researches proved that the capacity of the specimens examined varied between 160 and 360 c.c.

The weaker the heart, the more its musculature is diseased, the less the pressure under which the blood circulates. So we should not claim that a heart which has, even when pathological, the power, by contraction to raise a large column of blood into the aorta, to be so weak as to be dilated by the infinitesimal pressure of the return flow.

Our present views of the mechanism of valvular disease are defective in at least one cardinal point. When referring to this disease we lose sight of the fact that such a lesion never develops in an instant. We assume when speaking of aortic regurgation for example, that a certain quantity of blood flows back into the ventricle during diastole; further, that the ventricle is then unable to accommodate the inflow from the auricle, and that eventually congestion of the left auricle, and finally congestion in the pulmonary circulation ensue. It is unlikely that the blood will distribute itself in this manner in aortic regurgitation, so-called. It is possible that a few drops of blood regurgitate at the very beginning of the lesion, if the ventricular pressure will allow it, the pressure is undoubtedly higher at the climax of systole than is that within the first portion of the aorta. Now two conditions must be reckoned with:

1. The blood circulates in a constant stream through the closed system of tubes of the greater and lesser circulation. Every drop participates in this flow. Any quantity of blood which would by means of aortic peristalsis be forced back through the diseased aortic valve, would have to overcome the power of the circulating blood; this power is by the force of gravity exerted against quantities of blood ever so small. Through this, an at least appreciable portion of the power which might drive the blood backwards is balanced. This shows that blood cannot regurgitate through a damaged aortic valve in quantity sufficient to have any influence upon intraventricular pressure. During the next systole this small quantity of blood (if any returns at all) is forced again into the aorta, increased power of the systole not being at all required.

2. If really a small quantity of blood is held back as a result of aortic insufficiency, if it fails to travel with the wave which enters the aorta to carry the blood to the distant arteries, it is natural that so much less will appear at the left auricle when the cycle is completed. Should, however, through aggravation of the lesion an increasing amount of blood be kept back at the aortic valve and not reach in due time the distant arteries, a correspondingly still smaller amount would reappear at the left ventricle. This means that the circulation must slow itself, the contraction volume must become reduced. It is claimed that mitral insufficiency causes congestion of the pulmonary circulation. If we make this admission we must also admit that, if a severely damaged mitral valve allows 10 c.c. of blood to regurgitate into the left auricle, the influx from the pulmonary vein is hindered in proportion, that this produces pulmonary congestion, which in turn would cause a similar condition in the pulmonary artery. Accordingly the amount of blood in the pulmonary circulation would be increased 10 c.c., and the systemic diminished in proportion. During the next systole still more blood would be withdrawn from the systemic and transferred to the pulmonic circulation. In a few moments the volume of blood contained in the respective circulations would be altered very considerably if such could be the case. In reality the matter adjusts itself in a quite different manner. At the beginning, while the lesion develops it is possible that a small quantity of blood, a few drops perhaps, regurgitate into the auricle. The strength of ventricular contraction is thereby not influenced, because the residual blood in the left ventricle at the end of systole is neither increased nor diminished in volume, consequently only a few drops less enter the aorta. Subsequent ventricular contractions are merely a repetition of the previous ones, each time a proportionally smaller amount of blood reaches the left auricle after completion of the cardiac cycle, there just as in aortic insufficiency a diminution of the contraction volume develops, which leads to a satisfactory equalization of the conditions of fullness and pressure in the large and small circulatory systems. It is fortunate that the matter arranges itself in this simple manner. What would the ultimate results be if each systole would transfer from the greater to the lesser circulation a quantity of blood even so minute? That absolutely impossible conditions would result has not been overlooked. But instead of accepting the fact that in mitral regurgitation, through adaptation of the contraction volume to the condition, disturbances in the lesser circulation are compensated, the theory of "work hypertrophy" of the right ventricle was constructed. This condition was to occur just at the desired time and prevent the accumulation of blood in the small circulation. It is quite sure that in mitral insufficiency congestion of the lungs is observed; it is also true that this is accompanied by an hypertrophied condition of the right ventricle. These morbid conditions are not caused by the trouble at the valve, they are the consequence of abnormal metabolism induced by the slowing of the blood current in the lungs, or they are at the very least considerably influenced by this fact. *Ubi inflammatio ibi affluxus* was taught us while studying surgery; what are local inflammations other than locally disturbed metabolism? As in the case of the two above mentioned forms of valvular disease, all other forms, from the outset until accommodation of the circulation results, pursue the same course. This is also true of the stenoses. Neither dilatation nor work hypertrophy ever contributes towards accommodation; equalization of pressure is always due to a lessening of the volume of contraction.

As showing to what conclusions we may arrive if we try to explain the various phenomena of valvular disease upon the theories of work hypertrophy and dilatation, the following illustrations are of interest. A well known investigator, Rosenbach, ascertained that when the aortic valve of animals had been injured thus producing an acute insufficiency, the arterial system contained less blood, and the pulmonary circulation more than normally. He adopted the erroneous view that the explanation of this sudden and new blood distribution could also be applied in the case of disease of the human heart, in which the development of aortic insufficiency is always a slow and gradual process. He furthermore concluded that the ventricle, in order to overcome the disturbances caused on the one hand by underfilling of the arterial system and on the other by overfilling of the pulmonary circulation, must propel more blood than normally; also that here a simple dilatation would not suffice and that a special phenomenon occurs, which the author calls hyperdiastole. This is supposed to be an active dilatation, increasing the capacity of the

cavity, during which certain portions of the walls stretch a little more even than during passive dilatation. The ventricle is supposed to take then so to say a start in order to propel the blood with its usual energy. To accomplish this, work hypertrophy established itself, strange to say, at the desired moment in order to assist in the production of this very complicated biological phenomenon.

Another example of the errors to which belief in work hypertrophy and dilatation may lead, is shown in the statement that in mitral stenosis the left ventricle at times becomes smaller and atrophic in consequence of supposed continued underfilling. A long list of deductions, one more impossible than the other, most of them physical impossibilities, could be cited. They can be comprehended only when we regard dilatation and work hypertrophy as established facts. Added to this is the fact that the gradual development of valvular lesions has never been duly considered. Valvular lesions are always the result of infectious processes of the endocardium. If during the course of endocarditis excrescences form on a valve, or shrinkage occurs through formation of rear tissue causing a severe lesion, and if the contraction volume is so reduced in order to balance and distribute the circulating blood that proper oxidation is impossible, death must ensue. The various organs require for their life process a definite quantity of oxygen in a definite space of time. Now if the blood circulates very slowly, when the waves within the vessels are so short and shallow that too long a time elapses before the venous blood can exchange its carbon dioxide for oxygen, the various organs necessary to the life process cease to functionate. Valvular lesions which are not sufficiently severe to produce such a very material slowing of the circulation are never dangerous to life. They frequently produce no symptoms whatsoever. But if, upon a case of old cicatricial valvular disease, another disease supervenes, having also the tendency to slow the circulation, the degree of danger to life will naturally depend upon the combined severity of the old and new troubles and their ability to allow of proper oxidation of the body. It is consequently not correct to speak of "uncompensated" heart trouble. The supposed lack of compensation is nothing more than a second and independent disease supervening upon an old cardiac lesion. Both diseases act in a similar damaging manner upon the circulation. Accordingly the expression, "uncompensated valvular disease," has no *raison d'être*.

Regarding prognosis and therapy we should of course not expect that indurated valvular excrescenses can undergo any changes; perhaps recent vegetations are sometimes absorbed, although this is very doubtful. Diminution of a murmur does not prove a diminution of the lesion, and we must never judge from the murmur the extent of a valvular lesion. Our main endeavor should be to prevent the ever-present feature of valvular trouble, the diminution of proper oxidation of the body, from increasing through additional burdening of the circulatory system. As myocardial changes always accompany endocarditis, and the possibility exists that small latent foci may remain for years, we must primarily observe the action of the myocardium. These foci can be eradicated in only one manner (each case being separately considered), viz., by mild or strong stimulation of general metabolism by means of thermal baths, massage, and suitable diet. These are the only measures which assure any possible success. I do not care to be considered as if speaking *pro domo*, neither do I wish to deny or ignore that which for many years I have found beneficial, so I must say that owing to the many forms and grades of its natural thermal baths, Bad Nauheim is the best adapted for such a wide treatment of heart affections. I must however enter a protest against the belief prevalent in America, that the Schott method means Nauheim treatment. Schott takes the stand that hypertrophy of the heart is induced by means of gymnastics, and he hopes thereby to obtain more energy. I believe that I have shown that such a thing cannot exist nor take place.

It may be claimed that the general tone of a normal heart can be increased through a course of gymnastics, and that this would improve the strength of the contractile elements of that organ. This applies also to the body muscles and against it the following may be said. Every human being is endowed at birth with a maximum ability to develop his musculature. The muscles, including the heart, can develop only to the extreme limit of this ability. The condition necessary to a healthy maximum muscular development is normal metabolism, this simply means the conveyance of normal nutrient substances to the muscle cells, and normal removal of waste. This is important, as not a single cell in the entire body receives its nourishment other than through the lymph channels. The lymphatic clefts reach directly every cell of all the organs in the economy. The capillaries, however, reach only to the clefts. We must, for this reason, and for many others which do not come within the scope of this work, regard the lymphatics as the carriers of cell nourishment. The force which propels the lymph within the closed system of channels, is mainly derived from muscular energy. For these reasons active muscular work, or passive, massage, is necessary to healthy metabolism. Absorption of the nutrient moving material within the lymphatics can take place properly only when muscular relaxation and contraction normally alternate. Excessive muscular exertion causes congestion of lymph. I have in mind, in making this statement, the lymph stagnation often seen in the muscles of the legs after long marches, and the same condition in the arm after protracted fencing bouts. The heart performs always as much work as the nutrition of its cells will allow. Overstraining of the heart—and each muscular act intensifies and accelerates its work—must lead not only in the normal, but particularly in the diseased organ, to congestion of its lymph channels. We can, however, stimulate metabolism of the diseased heart if we increase to a maximum the period of rest between the contractions and retard its action. For these reasons digitalis, rest in bed, and thermal baths act invigoratingly upon the diseased heart, whereas it is always, and in any case, harmed or damaged by gymnastics.

Care of Defectives in Germany.—According to recent data there are now in Germany 116 cities with special schools for backward children. The total number of these schools is 203, and the number of pupils is 13,100. Berlin has 31 of these accessory schools.—*Science*.

Hospitals in Australia.—Here is a gem from the latest speech of a prominent member of the Parliament of New South Wales: "The present Ministry may blunder along for a few months, but while gazing at the stars they will stumble over the pebbles, and then the ambulance will take them to the hospital, where the grinning skulls of their predecessors are stored."—London *Chronicle*.

"THE FLOWERS THAT BLOOM IN THE SPRING"—WITH VARIATIONS AND DIGRESSIONS.*

By W. B. KONKLE, M.D.,

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Cynicism, scepticism, nihilism as to medicinal therpeutics have, probably, in certain quarters and at certain times, been manifest throughout the history of the healing art. Conspicuously exponential of such an attitude in the classic era stands the Bithynian Asclepiades. A sort of prototype of Paracelsus in his denunciation of the earlier masters, Hippocrates included, charlatan at least to the extent of exploiting the perennial maxim, *Mundus vult decipi*, his intimate association with such men as Cicero and Lucius Crassus indicates him to have been, nevertheless, possessed at once of ability and merit. He undoubtedly rendered good service to the noble but luxurious Romans comprising his *clientèle* with his measures of diet, exercise, baths, and frictions. Yet he was successful not because of his rejection of the Father of Medicine, but in spite of it; not on account of his neglect of drugs, but because the means he did employ were rational.

To Boerhaave, a veritable modern Galen, is attributed the statement that the utility of curative procedures begins and ends with "keeping the head cool, the feet warm, and the bowels open"—an utterance astonishingly cynical for the most renowned physician of the ages. But the world-famed Lyden master went farther than the limits of his dictum in his own practice; and he also overlooked the salient fact that throughout the century prior to his luminous career Jesuit's bark had been curing malarial diseases, and for two centuries mercury had been curing syphilis.

The nihilism directed toward medicinal therapeutics in our latter day is even more than ever before pronounced and general. So true is this that at the very outset a plea for the fuller recognition and more thorough investigation of plants as remedial agents is halted by scepticism's challenge, *cui boni?* Such a plea, to comprehend more especially our indigenous flora, the writer has contemplated. But, as he sets pen to paper, in the ears of his fancy rings the mockery of that snatch of comic opera so much in vogue a few years ago, "The flowers that bloom in the spring have nothing to do with the case"; or its more energetic paraphrase, "Bother the flowers that bloom in the spring!"

To dispose of this derisive and disparaging outcry, let us first of all cite some sources of the discredit attaching to vegetable remedies. One cause of such distrust is the uncertain quality of the plant itself, which in its commercial form may have lost in part or entirely its original medicinal virtue through improper collection or careless handling. Uniformity of action as concerns the crude product evidently depends upon where, when, and how it was procured, as well as upon the age of the specimen. It is well known as to plants employed medicinally that several of most common use are altogether more active in the recent state, and that nearly all of them deteriorate progressively with the lapse of time.

Again, reliability of effect is largely dependent upon the character of the standard preparation offered as representative of the powers of the plant. Very likely decided medicinal merit inherent in the crude drug is frequently lost in its pharmaceutic manipulation. Apropos of this probability, the writer would express his conviction that we have taken a backward step, have, indeed, virtually deprived ourselves of some valuable remedies, by our abandonment of the old-fashioned infusions and decoctions.

A source of neglect, perhaps, rather than of distrust, relative to vegetable materia medica is the wonderful expansion of synthetic chemistry. No thoughtful person would, of course, decry this marvelously fruitful movement. But, on the other hand, it should not become too exclusive. Nature will through all time retain her preeminence in the realm of chemical synthesis—the products of her laboratory will ever constitute the basis, indicate the law, and furnish the material for all human achievement in this limitless field of scientific endeavor.

Another cause of scepticism as to the medicinal value of plants is the apparent inertness of some to which positive remedial properties have been attributed. The factor of physiological activity is a strictly relative one, however. The question of dose is mainly involved. Every drug in an amount small enough will manifest no appreciable energy, and almost every drug in an amount large enough will show itself possessed of power to modify in some way our physical organism or its functions. But even when no immediate effect may be discernible from any practicable dose of a given drug, a very pronounced impression might be produced through its steady and prolonged administration. It would seem that involved in this principle is the possibility of large gains in the therapeutics of chronic disease, as will later be more fully set forth.

After all, disappointment as to the efficacy of drugs will be due not so much or not so frequently to their impotence as to our shortcomings of knowledge with reference to the indications for their employment. The warrant for the use of a medicine must rest in the conditions of the case in hand—as we understand the nature and features of disease more clearly and completely, the more unerringly we apply our remedies thereto. One would not be expected to display great accuracy of aim without a commanding view of the mark. So therapeutics must constantly follow in the wake of pathology. Disregard for this order of relationship would imply confusion of the logic of science with the caprice of hazard. In all reason, ignorance as to the cure of disease will maintain a fairly constant ratio of equality toward the ignorance existing relative to disease itself.

Medicine is but just accomplishing its transition from empiricism to science. Not only for forty years, but for forty centuries, had the angel of the healing art been wandering up and down the wilderness, a nomad of nomads, her home everywhere and nowhere, her sole habitation the enclosure of a tabernacle's unenduring and unstable curtains. Now she is conquering her promised land. Some time, perhaps ere long, nevermore to depart therefrom, she will enter her temple, the granite of whose walls will be knit into one with Zion's eternal rock. In any sphere of human activity whatsoever, a fundamental change of régime is signalized by a period of nihilism and chaos. Construction of the new presupposes destruction of the old. Russia in blood and ashes is the prophecy of a new-born Russia. In this philosophic conception we find an ultimate, a necessary cause of present-date nihilism in the province of medicinal therapeusis. Our new wine must be put in new bottles.

The central idea of the old system of medication

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was *specificity*. The single aim was to establish that any given drug is useful in such and such diseases. The discovery of facts in this direction was purely accidental. The method of the late decades is to ascertain the physiological powers of drugs—to determine what they do when introduced into the system—to learn how they may be employed as instruments in the modification of bodily processes. Formerly medicines were mysterious, magic agents; now they are plain, simple tools. Of yore new seas of therapy were sailed at random and by chance; today they are navigated through means characterized by precision, accuracy, certainty.

Again restricting our view to the vegetable kingdom, which especially concerns us in this discussion, it may be remarked that in their way the superseded systems of medical botany were, despite glaring defects, quite comprehensive and complete. The early Hindoos and Egyptians were assiduous and proficient herbalists. Theophrastus, representing the Greek period; Dioscorides and the elder Pliny, representing the Roman period; Avicenna, representing the Arabian period, and the German group of the sixteenth century headed by Brunsfels, representing the modern period, worthily wrought in this field—are known and honored still. We owe much to these herculean pioneers. Stars of the first magnitude are they; and though old and distant, though dimmed and partially eclipsed, they send their rays across the ages even to us on time's outmost wave. But the light that leads us must come from newer, nearer suns.

Regarding medicines as the analogues of the craftsman's tools, some lacks and defects relative thereto may be noted. Classification has been studied and emphasized to the neglect of differentiation. Important, of course, is it to know the qualities of a drug which make it like certain other drugs; but just as valuable is it to know the properties which constitute a drug a thing by itself. So remedies should be investigated individually as well as generically. The carpenter not only has saws, he has different kinds of saws; he not only has chisels, he has various forms of chisels. A wider exploration of this department of materia medica would enhance greatly the precision of our therapeutics.

There are acute disease processes, and there are chronic disease processes. Likewise there are acute physiological effects of drugs, and there are, also, chronic physiological effects of drugs. Knowledge of the latter, of the chronic resultant of medicinal energy, is pronouncedly scanty. The reason is not far to seek—facts in this direction are hard to secure—the laboratory appliances and methods which yield such rapid and satisfactory returns in the field of the acute effects of drugs are but narrowly applicable here. Hence the propriety and urgency of gathering and preserving every shred of such data within possible reach. Laboratory mechanism and effort may, as we get farther on, be adjusted to meet more nearly the requirements of the case; but the problem will have to be largely worked out in actual medical practice. The game is well worth the candle, however. Any advances along the line indicated will compensate for all pains and endeavor expended in their accomplishment. The key to many a tightly locked *terra incognita* in the treatment of chronic disease may be the reward of patient, untiring delving in these mazy drifts.

In illustration of the points at issue in the foregoing discussion let us get back to "the flowers that bloom in the spring"—those of them indigenous to our own botanic section. The first to greet us is trailing arbutus—*Epigæa repens*—a close relative botanically as well as therapeutically of bearberry—*Arctostaphylos uva-ursi*. Like bearberry and buchu in its general diuretic action, what are yet its individual properties and its distinct indication as a medicine?

We next notice the yellow head of colt's-foot—*Tussilago farfara*. This plant has been used as a demulcent in coughs, and over long periods as an alterative in scrofulous conditions. It has been rather completely shelved by imputation of inertness. But, persistently administered, may it not in the long run modify vital processes as decidedly as the drugs more promptly energetic?

The pure white crown of bloodroot, *Sanguinaria canadensis*, catches our eye. Here is a plant of indubitable medicinal activity. It touches the borderland of the poisons; and what may kill a dog in the laboratory may cure a man in the sick-room. How general and superficial is our knowledge of the remedial properties of bloodroot!

The quaint, frail bloom of Dutchman's breeches, *Dicentra canadensis*, now is noticed. As Turkey or Squirrel Corn the tubers of this perennial have been employed as a tonic alterative. It is known that an alkaloidal active principle exists. A paragraph or two comprises the literature of the subject. When shall more be written thereupon?

The purple of crane's-bill attracts attention—*Geranium maculatum*—one of the astringent group. How does it differ in action from its fellows? and has it any virtue aside from that of tannic acid?

The showy gold of dandelion, *Taraxacum dens-leonis*, is seen everywhere. This was formerly in great repute as a diuretic, and as an hepatic corrective. It is much employed in Germany. Why should its prestige decline in this country, while it maintains its standing at the very Mecca of science?

In shady woodland nooks the deep, rich garnet of birthroot, *Trillium erectum*, drowsily nods. To the root astringent, tonic, expectorant, and alterative properties have been assigned. It is a popular parturient. The aborigines valued it highly. How many have heard of it?

Beneath its canopy of glossy green droops the waxen saucer of may-apple—*Podophyllum peltatum*—vegetable calomel it has been styled. Where do the respective spheres of it and its mineral analogue merge, and where do they separate?

On hillside and mountainside dogwood replaces the white of snow with the white of blossoms—*Cornus florida*, the neglected and almost forgotten ally of the cinchonas. May it not have been supplanted too completely? May there not be indications for its preferred use?

This list might be extended, but, as it is, it sufficiently serves our purpose of illustration. It will indicate, also, an immense field for research, a field rich in promise and accessible to all. In his retiring-president's address before the New York Academy of Medicine, Dr Charles L. Dana expresses the judgment that "to a very large extent clinical or descriptive medicine and gross pathology are a finished story." The statement strongly appeals to reason. But, howsoever that may be, certainly therapy is not a closed story. Here may a man toil and think a lifetime, sustained and encouraged in every perplexity by the consciousness that his labor will not be in vain. He who gives to a noble craft a new or an improved tool is a benefactor of his race.

Finally taking our leave from "the flowers that bloom in the spring," we insist that they *have* something to do with the case, and that neither retrospect nor prospect will warrant the sceptical interjection, "Bother the flowers that bloom in the spring!"

A PLEA FOR THE CORRECTION OF UTERINE DISPLACEMENTS.*

By FRANK H. HANCOCK, M.D.

NORFOLK, VA.

THE following paper is based upon a study of six hundred pelvic examinations made at the Outdoor department, St. Vincent's Hospital, Norfolk, Va. A number of these cases I have taken from reports of Dr. P. St. L. Moncure, of this city, to whose painstaking care in making up these records I am much indebted. In this number there are 213 displacements, 17 retroversions, 26 antedisplacements, and 15 descents. However, for purposes of critical analysis I have selected 532 cases, on account of the more definite history taken in connection with them and their more copious clinical notes. In these 532 cases, therefore, applying for the most part for the relief of pelvic pain, there were 147 cases of retroversions, 24 of antedisplacements, and 12 descents; 112 cases of endometritis, 43 of which were associated with perineal or cervical tears and relaxed vaginal outlet; 72 cases of pelvic cellulitis, pyosalpinx, ovarian cysts; 39 fibroids; 31 metrorrhagias, not associated with fibroids; 27 venereal diseases; 8 cases in which no trouble was found, or which may be said to have been neurasthenic; 7 cases; 8 cases in which no trouble was found, or There were 7 cases of cancer of cervix and body; 8 cystoceles, in one of which the uterus was prolapsed, and in another retrodisplaced; 6 cases of dysmenorrhea, not associated with the displacement; 1 rectocele, with the uterus in normal position. The rest of these were women at the climateric, with the usual nervous phenomena, hematomas, pregnancies, vaginitis, vulvitis, etc.

In view of the well-known etiological rôle that laceration of the perineum is supposed to play, it was a matter of profound interest to me to note that of the 147 retroversions only 40 were accompanied by discernible perineal or cervical tears; of the 12 descents only 5, and of the 24 antedisplacements but 6. In other words, of 183 displacements only 51 were associated with relaxed vaginal outlet, leaving 132 that were independent of perineal insufficiency. Of these 147 retroversions 57 women had borne no children, while of the 90 remaining cases only 50 showed a possible post-obstetric cause, and most of these were first-degree tears. Of these nulliparæ about 10 gave histories of previous pelvic inflammation or miscarriages, leaving 97, more than half, in which there was neither scar tissue, nor tear, nor tumor, nor any condition that could account for these displacements, except the inability of the uterine ligaments to support the uterus. For this reason any consideration of displacements that emphasizes perineal support of the uterus without giving due credit to the ligaments is a false doctrine. Nor am I trying to ascribe all virtue to the ligaments. In this series of 112 endometritis there were 43 perineal lacerations, some of them involving the levator fibers and adjacent fascia, and yet without hernia of pelvic contents in a single case. In one of these the rectovaginal septum was ruptured down to the anterior rectal walls, and deep enough to involve the attachments of the transversus perinei, and the deep perineal fascia, certainly deep enough to destroy the supporting functions of the pelvic floor, and yet after 12 years there was neither rectocele, cystocele, nor descent of the uterus.

It can hardly be said that these tears produced the endometritis, there being 69 cases of endometritis without perineal injury, and 40 nulliparous women, in practically every one of whom existed an endometritis. In these 600 cases, there were 8 cystoceles, with but one prolapse, and one retrodisplacement; and one rectocele, with uterus in normal position. I believe that in most cases the material effect, even of second-degree tears, is the appreciation upon the part of the patient that the orifice of the vagina is enlarged.

I do not believe that these tears should be let alone, but I am convinced, from what I have been taught, from what textbooks and medical journals have to say on the subject, that the symptoms directly produced have been greatly exaggerated. I have shown that in the majority of these 147 cases of retroversions there was no post-obstetric condition, even associated with them, that could account for the displacement, and even in those cases where the rent was sufficient to destroy totally the validity of the vaginal wall, as in the rectocele case, and the 6 cystoceles, the uterus was held by its ligaments in its proper position.

Acting upon the hypothesis of perineal support, many surgeons repair the perineum, leaving the uterus to take care of itself, believing they have removed the cause of the retroversion. When the pelvic fascia supporting the blood-vessels is torn, there may be some passive congestion of the perivaginal tissues, which may, in course of time, drag the uterus down, but that it does not usually do so is shown, I think, in these cases.

Dr. Charles R. Robbins, of Richmond, Va., in a recent address before the Academy of Medicine and Surgery of that city, observes that the sphincter ani muscles include the rectum in their sling-like support, as well as the vagina. I am not aware that that fact has ever been controverted. It was the knowledge, apparently, of the anatomists who named those muscles some generations ago.

It is a fact that most perineal lacerations are in the median line (Kelly and Noble and my own observation), and that the anterior fibers of the levator ani muscles, that hold the vaginal walls in apposition are more directly reached by lateral tears, tears that reach up into the vaginal sulci; but it is also a fact, as stated by Deaver ("Surgical Anatomy" and Gray's "Anatomy"), that the anterior fibers of the levator ani muscles are inserted into the central tendon of the perineum, though Mr. Robbins states that these fibers have little, if any, connection with the perineal body or the tissues interposed between the vagina and the rectum. I would be interested in knowing how he obtained that information.

If the anatomy of the female pelvis is as stated by Deaver and Gray, what else could happen when the perineal body is torn but that the muscular fibers connected with it should further pull it apart, acting in the direction of their bony attachments, giving the appearance of the relaxed vaginal outlet.

What are we to do with these displacements? Leave them, the uncomplicated ones? Many surgeons and gynecologists say so. Dr. Stuart McQuire advises noninterference where they are accidentally discovered and are not producing symptoms at the time, saying ignorance is bliss and wisdom would be folly. It is a sentimentally endowed organ, he says, and he would not direct attention to it—a policy of silence that was observed with the tuberculous, until later knowledge put a thermometer in the physician's hand and made him responsible for the failure or success of his case.

Dr. McQuire does not even advise bimanual replacement—as simple a procedure as that is—in these uncomplicated cases, but leaves the organ

* Read at the annual session of the Medical Society of Virginia, November 5 to 8, 1907.

prostrate in the pelvis. He operates when the persistent symptoms require treatment—that is, when congestion and hyperplasia have ensued, irritating the nerve filaments, pulling upon the ovaries, giving rise to lumbar and ovarian pain, leucorrhea, and an after-coming train of neuroses; and yet in the same paper in which he advises this course he complains, with remarkable inconsistency, as though some one were guilty of great dereliction, that "unfortunately most cases of posterior displacement are seen at a date when the primary cause has ceased to be active, and when pathological changes have become anatomical alterations, and a removal of the exciting factor then is insufficient to correct the trouble;" failing to observe that these simple cases he had dismissed with such complacency were the forerunners of the now anatomically altered ones. Dr. McQuire thus advises to leave these simple cases, and observes later that delayed treatment is responsible for organic changes in the retroverted uterus, which have now rendered that organ functionless. Alteration of structure precedes the production of symptoms, and thus anatomical correction is not always followed by physiological restoration.

Gwathmey of Norfolk, Bovée of Washington, Montgomery of Philadelphia, Morris of New York, and others teach the same doctrine. The cases that these gentlemen discover accidentally, which at the time manifest no symptoms, and which they pass by—do they know that these cases do not later fall into the hands of other gynecolygists when, "unfortunately, pathological changes have become anatomical alterations?" It is impossible to agree with these gentlemen, great as their authority may be.

How are so many cases without symptoms discovered? Healthy women do not present themselves for pelvic examinations without some discomfort in the pelvis. Practically every woman with retroversion, recorded in this series, had pelvic or lumbar pains, or both, and leucorrhea. And if there are no symptoms, the fact that drainage is interfered with, that the ovaries are lowered in the pelvis and pulled upon as the fundus of the uterus goes back to the sacral hollow, that sterility is associated with flexion, that flexion may be a factor in ectopic pregnancy and is a factor in general nervous disturbances, that the flexion may become such as to interfere with the circulation, giving rise to congestion and endometritis, that pregnancy may occur and trouble ensue—should not these considerations determine the value of early correction? Is a cystocele to be corrected to relieve residual urine, and a rectocele to facilitate the passage of feces, and is a uterocele to be left with its accumulation of mucus and cell débris?

Searching the upper abdomen to relieve the accidental conditions found there, these gentlemen are willing to leave the dangers of the pelvis which are perpetual, at least, if not pressing. Do reflex nervous disorders come only from the eyes? Are not the reflexes from a diseased pelvis analogous in giving rise to neuroses, and if so, might not relief occur from correction of the causative lesion?

Dr. Morris of New York, finding a retrodisplacement without complications, sends the patient to an eye specialist, and if refractive errors are found has them corrected and dismisses the patient. Conversely the eye specialist might refer his cases of strabismus and of iritis, with the same assurance of relief offered the displacement cases referred by Dr. Morris.

Why did not nature leave the uterus in the sacral hollow if it was advantageous to have it there, rather than, as at present, movable between the bladder and rectum? Of what use are the round ligaments and the uterosacrals, so amplified by Bovée? Is not the uterus less likely "to wedge its way through the vaginal canal," when it forms an angle with it, than when it is parallel with it? That uterine displacements are the cause of sterility is believed by our best obstetricians. Remembering the delicacy of the adjustment of the processes of reproduction, its failure often under conditions apparently normal, we should certainly do nothing to add to the complex processes already necessary to this end.

Statistics show that the fecundity of the American woman is below that of any other woman of the world, the average number of children being as low as 2.5 per marriage. Is not this a condition to be dealt with? Discounting the large number that insist upon defeating nature's great purpose, there are still a multitude seeking relief from sterility.

Flexions do not cause sterility by mechanical obstruction, as formerly supposed. Spermatozoa will pass any point that will permit the exit of menstrual blood, but the attending endometritis is a factor. Sims found fifty per cent. of his cases of sterility were associated with dysmenorrhea, or really endometritis.

In cases not due to infection endometritis results from interference with the circulation, with its attendant phenomena, proliferation of the glandular structures, and leucorrhea.

The epithelium that develops is of poor quality and embryonic in character, on account of venous congestion occurring in place of the arterial blood that supplies the normal endometrium, giving a shaggy, thickened, mushy surface, which the villi of the impregnated ovum cannot readily penetrate, as they must do if the ovum is firmly planted and properly nourished.

Again, the excessive secretion pouring from the utricular glands is apt to wash away the ovule, just as it often sweeps out of the uterus the spermatozoa ascending to the distal end of the tube.

Nature arranged that the spermatozoa should be deposited in the vaginal vault, and that the cervix should be immersed in this spermatic fluid, and any alteration of this arrangement is at least, as Bissell observes, "discouraging to fecundation" and should be corrected.

We should certainly not do less in the twentieth century for reproduction than was done by the Ancient Hebrews and the Homeric Greeks, as illustrated in their precepts. Remembering the happy reputation of Priam, with his many sons, we should seek to render less frequent the fruitless efforts of Phœnix in the same direction.

Abdominopelvic Orthopedics.—Honoré Soulié believes that relaxation of the abdominal walls and ptosis of the abdominal and pelvic organs should be treated surgically by whatever operative procedures are necessary to hold in position all the organs and close all the ruptures. We are all familiar with the picture of suffering that is presented by those women who suffer from this condition, producing a severe neurasthenia, with all its symptoms, mental and physical. The equilibrium of the abdominal organs is maintained by the folds of peritoneum which surround them and by the pressure of tension in the abdominal walls. The walls exercise an automassage which aids the function of the splanchnic organs. They improve the circulation in the pelvic and abdominal viscera, emptying the pelvic plexuses like an aspirating pump. These important functions are lost when the abdominal walls lose their elasticity. The effect on the general health results from the effect on the great sympathetic system and the arterial trunks of the abdomen. Visceral displacement ensues, with loss of function in the stomach and intestines, and pressure effects from the displaced organs. No form of treatment so far has given good results except the surgical.—*Archives Provinciales de Chirurgie.*

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SWEATED INDUSTRIES AND THE HEALTH OF THE MASSES.

VERY low wages are productive of ill health and of physical degeneration amongst the workers themselves; that is to say, wages which are not sufficient to procure for the worker and those dependent upon him a proper amount of nourishing food and a fairly comfortable home. Sweated labor is, therefore, to a certain extent, a menace to the health of the entire community, for those who perform this description of labor, as a rule, work under unsanitary conditions and receive quite inadequate wages. Further, home work is the worst paid of the sweated industries, and is usually accomplished under circumstances which render it not only dangerous to the health of the workers themselves but a distinct source of danger to the public at large. Recently, attention has been acutely drawn to sweated labor in general, and to home work in particular in Europe and especially in Great Britain. The fact is recognized that living in crowded centres is playing the most prominent part in the physical deterioration that is taking place among civilized and industrial races, and is the chief cause of the great infantile mortality that prevails in cities. Extreme interest is consequently manifested in considering every possible cause which tends towards these ends, and in evolving measures to combat the evil. Sweated labor, and the class of work which is done at home are acknowledged to be factors in the problem, and the whole question is receiving earnest thought by medical men everywhere.

Perhaps, however, the matter is most urgent in Great Britain, at any rate, it is there that it has been chiefly discussed of late. During the past two years numerous exhibitions and meetings have been held dealing with sweatshop labor, and endeavoring to formulate a workable scheme, whereby the most obvious abuses of the system may be swept away or mitigated. In the *Lancet* of January 16, 1908, there appeared an article treating of women home-workers, written by a contributor who had just made a pilgrimage through those parts of London in which such workers most abound. The conditions discovered in these homes were unhealthy considered from any standpoint. In the first place, none of the women, with two exceptions, earned a living wage, the average being less than four cents per hour. Many had families to provide for, and the majority could only afford to hire one room. Some were compelled to work for fourteen hours a day, indeed to lead a life of almost ceaseless toil in order to support a bare existence. From the economical point of view a life of this nature cannot but be unhealthy. In addition to the fact that scarcely any of these female toilers earned enough to keep herself and her family properly nourished, the greater part of them were found to be living under decidedly unsanitary conditions. The rooms, or rather the room, in which the woman worker lived was invariably ill ventilated, dirty, and sometimes offensively foul. The conclusion reached by the writer in the *Lancet*, so far as the workers themselves and families were concerned, was that underpaid home work was injurious to the health of the workers and that it exerted a deleterious influence on the infant mortality rate.

How far home work amongst women is dangerous to the public health was another question considered and it was concluded that "under certain conditions infection may be spread by this means. Clothes handled, and left lying about in a small room in which measles, scarlet fever, or any other infectious disease was present might easily convey the disease to individuals outside." There would, thinks the writer, be little dissent from the view that home-work on clothes in some degree is a source of danger to the community. It may then be taken as proven that in Great Britain sweated labor and home-work amongst women are factors of some importance in the production of physical deterioration and in the causation of the high infantile mortality rate which is so constant a feature of life in manufacturing and overcrowded districts.

In this country conditions in this respect are, in general, somewhat better than those which exist in Europe. But in New York and Chicago there is a considerable amount of sweat-shop labor and home-work by women carried on in a manner calculated to injure the health of the workers and to be a source of danger to the entire community. In fact, although, perhaps, home-work among women in America is now a matter of little moment from a public health point of view, yet it is said that in some States women and young girls and even children are allowed to work under conditions which are likely to injure them physically and mentally. It would be no exaggeration to state that in every country of the world which is engaged in manufacturing there is room for great improvements in legislation dealing with factory and home work.

ARSENIC IN THE EARLY STAGES OF SYPHILIS.

EVER since mercury was first used in the treatment of syphilis various other drugs have at times been substituted for it. Thus in the sixteenth century guaiac was used, later sarsaparilla and sulphur cures came into vogue, and to-day the arsenical salt meta-arsenic-anilide, or atoxyl, is advocated by some. After the experiments at the Liverpool and the London Schools of Tropical Medicine had demonstrated the specific action of this drug on the trypanosome of sleeping sickness, and after it had been shown that an apparent relationship existed between the trypanosomes and the spirochete of

syphilis, it was quite natural that the same remedy should have been tried in syphilis.

In the *Wiener klinische Wochenschrift* of October 31, 1907, G. Nobl reports his results with the drug in forty-five patients, treatment having been begun in various stages of the disease. Recently infected patients with an initial lesion were treated by applying a wet dressing of a 20 per cent. solution to the eroded surface, as well as by injecting one-half a cubic centimeter into the lesion itself. The ulcer soon looked clean, but repeated examinations of surface scrapings, even after several weeks of wet dressings, showed many living spirochetes. The injection caused but slight local burning and edema which disappeared in a few days. Other patients in whom secondaries appeared in spite of the above treatment, and who then received three to five injections into the local lesion over a period of two weeks, showed no changes in the initial lesion except a little softening. When this softened lesion was excised smears still showed living spirochetes, and histologically it presented the same appearance as an untreated primary lesion. Still other patients received intramuscular injections, in addition to the local treatment, in order to ascertain whether these would prevent a generalization of the virus. In all of them secondaries appeared, though the patients received a total of one and a half to three grams of atoxyl, the eruption itself being no different from that in an untreated case. Twenty-eight patients who had received no previous treatment came to Nobl only after the appearance of secondaries consisting of erythematopapulous and papulopustulous eruptions, the patients having in addition either mucous patches in the mouth or perineal condylomata. They received two-tenths of a gram of a twenty per cent. solution until four or five grams had been given in all. After the treatment the secondary lesions still showed living spirochetes, and while some of the spots disappeared others showed only a central absorption while their marginal zones increased; in other words, there was no marked improvement. The buccal lesions were not benefited at all, in fact in some patients plaques on the palate appeared even during the treatment. In ten other patients in whom secondaries reappeared after mercury had caused their disappearance, the arsenical preparation was used, but had so little effect that mercury was again resorted to.

Nobl concludes that the drug has not the power to kill spirochetes, and since secondaries always appeared after local and general treatment, it is probable that it does not even inhibit the growth of the spirochetes or prevent generalization of the virus. When the latter had taken place secondaries did not disappear after the use of five grams, which is the average accepted maximum dose. In exceptional cases in which six to ten grams were given in all, the eruption disappeared but reappeared in two weeks. While Nobl had to stop the treatment in only one patient, on account of the appearance of a parenchymatous nephritis, other observers have reported albuminuria, gastroenteritis, chorioretinitis, and even amaurosis. Mercury, on the other hand, when administered soon after infection, usually prevents the appearance of secondaries or causes them to disappear when present. Furthermore the judicious use of mercury is rarely followed by any disagreeable symptoms, at any rate by no amaurosis. Uhlenhuth, Hoffmann, Roscher, Lassar, Lesser, and Metchnikoff have all reported good results from the use of atoxyl, but, as Nobl's report shows, unfavorable opinions as regards its curative effect in syphilis are not wanting. Until a wider experience shall have established the value of the arsenical preparation, if it ever does, we are not warranted in regarding it as a specific in syphilis or a substitute for mercury in the primary and secondary stages of the disease.

TREATMENT OF PARALYTIC TALIPES CALCANEUS.

Talipes calcaneus, though not one of the most frequent deformities caused by paralysis, is one of the most disabling. When the anterior group of muscles becomes paralyzed the foot dangles, and when the equinus finally becomes fixed the limb, though awkward, is still efficient. Not so when the calf muscles are paralyzed, as in talipes calcaneus, for then the propelling force is taken away and the patient walks heavily on the heel. The foot is useless except as a simple support. It is possible to prevent the development of paralytic talipes by supporting the foot in normal position, and even mild degrees of deformity may be successfully treated with braces. When, however, the characteristic deformity (cavus) with or without lateral displacement has set in, the brace must be strong enough to withstand the strain of locomotion, therefore so heavy as to be burdensome, and if lateral distortion is present satisfactory adjustment is difficult. Mechanical treatment thus becomes ineffective in a large proportion of cases and operative intervention becomes necessary. The objects of the latter are to restore symmetry and to increase the stability and resistance of the foot so that light apparatus may be effective in all cases and unnecessary in those of the most favorable type.

In the February number of *Annals of Surgery* R. Whitman describes his operation for this condition, having performed it with satisfactory results in over forty cases. The complete operation may be described as astragalectomy and backward displacement of the foot combined with arthrodesis, tendon transplantation, and tendon shortening. The author describes all its steps in detail as well as the other operations devised for this condition. Each of the other procedures has a certain merit in certain cases, particularly in those of mild type, in which the brace treatment is usually efficient; they are thus only an alternative for the latter mode of treatment. Whitman's operation, on the other hand, is efficient in the cases of advanced type in which the brace is inefficient. It is true that the removal of the astragalus shortens the limb, but it is essential to the restoration of symmetry and to the attainment of security. In comparison with these results the slight shortening, never more than one-half an inch, is of no importance.

Whitman's operation is unnecessary in those cases

in which the patient desires to do away with the brace, though the latter is efficient. Any of the other operative procedures may then be resorted to, as they are much simpler. When, however, the characteristic deformity incidental to functional use (cavus) is present, especially if there is also lateral displacement, the operation described by Whitman is certainly the most effective one. Hoffa employed it in the cases in which deformity and disability were most extreme and stated that his results were "ausgezeichnet."

The Fulguration Treatment of Cancer.

Although it is now some little time since de Keating Hart of Marseilles began to report the encouraging results he had obtained in cases of malignant growths by means of a form of electrical treatment to which he gave the name of fulguration, the accounts have been received with a certain amount of skepticism, which, as is usual, has been most pronounced among those whose experience in dealing with carcinoma is widest. The most important features of the procedure consist in the application to the diseased area of the extremely high tension sparks generated by the d'Arsonval or Tesla apparatus and emitted by a special form of electrode which is moved about over the surface involved at a distance of two to four centimeters, the patient being deeply anesthetized. After from five to forty minutes of this the diseased tissue is enucleated with the scalpel or is curetted away and the raw surface is subjected to a further period of fulguration in order to cause the death of any cancer cells that have escaped destruction the first time. The claims made in behalf of the method are being investigated by Professor Czerny in the Heidelberg Institute for Cancer Research, and in the *Münchener medizinische Wochenschrift*, February 11, 1908, he speaks of it as something deserving further study and trial. While de Keating Hart appears to be somewhat overenthusiastic in his views as to the indications for the treatment, Czerny states that there is no doubt that the sparks exert a selective destructive action on the carcinoma cells, at the same time stimulating the connective tissue to increased proliferation. Only superficial growths are suitable, but for these the fulguration may prove more satisfactory than the ordinary operations. In regard to the permanency of the apparent cures effected it is still too early to speak, as well as of the question of the treatment of deeper growths. In recurrences fulguration is of service in relieving the pain and the tendency to hemorrhage and suppuration, but whether it is curative is doubtful, while in advanced cases with much cachexia it may prove prejudicial through causing incomplete destruction of tumor cells followed by accelerated growth and an increase in the toxemia through the absorption of products from the disintegrated tissues. The technique of application also is not simple and requires many precautions with which only those accustomed to handling electric currents of high potential are familiar. The sanction of so high an authority as Professor Czerny will probably serve to stimulate interest in the procedure and enable the accumulation of sufficient data to establish its precise value and indications, though of course, years must elapse before it will be possible to arrive at a definite opinion in regard to the permanence of what apparent cures the fulguration treatment may effect.

The Treatment of Osteomalacia.

From this affection, rare in America but endemic in several European countries, some patients are known to recover spontaneously while others receive no benefit from any form of treatment. The treatment may be divided into surgical and medical, of which the latter should always be tried first in fresh cases, the former being reserved for the advanced cases and those treated medicinally without success. Among the drugs employed phosphorus is the favorite, but it requires a prolonged use during which patients may develop all kinds of deformity, and while the disease may be ultimately cured the deformity remains. Bossi introduced adrenalin with apparent success in several cases, and recently C. Merletti has reported the history of a florid case cured by this remedy (*Klinisch-therapeutische Wochenschrift*, October 21, 1907). He injected one c.c. of a 1 to 1,000 solution subcutaneously, once a day for twenty days, after which the patient was again able to walk. After an interval of ten days the patient was injected for another twenty days, when she was considered cured. Fehling thought that the disease was due to a disturbed function of the ovaries because it occurred at a period when they were especially active, and he therefore advised castration. This method of treatment gave good results in some cases reported by C. Everke in the August number of the *Monatsschrift für Geburtshilfe und Gynäkologie*. Out of forty-one cases, twenty were mild and are still under observation, being treated medicinally. Three others were cured by inducing abortion and in eighteen advanced cases castration was performed. Of the latter four women died a few days after operation, but the remaining fourteen were permanently cured, the oldest now having gone seventeen years without a recurrence. Soon after the operation the pains in the muscles and bones disappeared, and the bones becoming hard again. The patients who were unable to walk could soon get about again and attend to their work. A comparison of these experiences would seem to indicate a resort to adrenalin as a primary measure, although the cure is not always permanent, the disease sometimes recurring at a subsequent pregnancy. If this drug fails or if the diseases relapses, removal of the ovaries may then be performed.

Hospital Fare.

The question of hospital diet has been recently made the subject of considerable discussion, if it is allowable to speak of a discussion when the argument is all on one side, in *The Times* of this city. Several correspondents who have had the misfortune to pass longer or shorter periods as patients in the general wards or private rooms of hospitals have written in complaint of the fare that is provided in these institutions. The testimony has been all to the effect that the food is badly cooked and badly served. Hospital patients, as inmates of institutions in general, are proverbial "kickers," but there is reason to believe that in this instance there is some ground for their complaints. Incidental testimony on their side was afforded not long ago when an interne in one of the best appointed hospitals, smarting under the pangs of an unsatisfied palate, threw a pie out of the window at the head of the chef, who happened to be taking an airing in the yard, and bruised his scalp. The interne atoned for his reprehensible act by dressing the contusion of the chef and administering balm to his wounded

feelings, and so a scandal was hushed, but the protest against the poor table was eloquent. In the matter of general equipment our hospitals have nothing to fear in comparison with any in the world; the wards are light and airy, the beds are good, the operating rooms are perfect in their appointments, the instruments are of the best make, and the medicines conform in general to the standard of the Council on Pharmacy and Chemistry, although some which that infallible tribunal has condemned are in more or less extensive use, but the cooking is often very bad. In these days, when so much is being done in the way of nonmedical methods of therapy, there is no excuse for the neglect of dietetics. The matter is one that properly comes under the supervision of the medical staff and should not be left so wholly to the lay administration as it is.

"Dammed Circulation."

Not long ago Dr. A. R. Allen of Philadelphia, writing in the Medical Record on the proper term to express the therapeutic method known as Bier's hyperemia, proposed the adoption of the German name, *Stauungs-Hyperämie*. He examined all the English terms in use, such as passive congestion or hyperemia, stasis hyperemia, etc., and justly contended that none of them was suitable since none expressed the true condition. To this might be objected that neither does the German term express the true condition or any other condition to English ears, but an even more serious objection would be the difficulty of pronunciation; an English trained tongue would make a weird sound out of such a combination of letters—stawngs-hyperamy would be about the best the eye and tongue together could make of it, and the mental image it would call up would be about as clear as the average .r-ray picture. Dr. William Ewart, in *The Lancet* of February 22, suggests that we go back to the term "dammed circulation," proposed by Hugh Owen Thomas when advocating the method some thirty years ago. The term would doubtless be regarded as expressive by the patient undergoing treatment, and it would afford endless amusement to punsters in and out of the profession. But in spite of that it would be better than the German term; it means the same and the substitution of circulation for hyperemia is a distinct improvement. Obstructed or impeded circulation would convey the same meaning and this would be free from any possible objection that might be raised against Dr. Ewart's suggestion.

News of the Week.

Society for the Suppression of Unnecessary Noise.—This organization held its first annual meeting last week and has published its first annual report, in which Mrs. Isaac L. Rice, the president and founder of the society, describes the progress that has been made. One of the latest steps has been the organization, with the cooperation of the Board of Education, of a Children's Hospital Branch, whose members are pledged to make as little noise as possible in the neighborhood of hospitals. Mark Twain has accepted the presidency of this. The directorate of the society includes representatives from fifty-nine hospitals. In the one year of its existence the society has succeeded in getting a Federal law passed restricting signal whistling among the river shipping, in getting the Aldermen to pass an ordinance compelling teamsters to walk their horses in hospital streets, and in securing promises from the Board of Governors of the Automobile Club of America that they will endeavor to suppress all unnecessary automobile disturbances in the "quiet zone."

"Kommers" in Honor of Koch.—A very elaborate "Kommers" in honor of Robert Koch's return to Germany after his long sojourn in Africa studying sleeping sickness and rinderpest was held in Berlin on February 11. Among the very numerous guests were many of the most prominent scientists and functionaries of the Empire. The program included the presentation of a commemorative medal to Koch, as well as the singing of numerous serious and humorous songs relative to his achievements in the field of bacteriology and preventive medicine.

Crusade Against Cocaine.—The Illinois State Board of Pharmacy is waging war against the indiscriminate sale and use of this drug. Numerous inquiries have been received by the president of the board, Charles H. Avery, from wholesale and retail dealers, who have asked for an explanation of the provisions of the new cocaine law. Detectives are at work gathering evidence against dealers and agents who furnish the drugs to persons addicted to its use.

School Inspection.—The medical inspectors of schools in Chicago examined 7,166 children during the week ending February 15, and temporarily excluded 233 from attendance because they were a menace to the health and life of the other pupils. Twenty-five were excluded because of measles, ten for scarlet fever, twenty-six for chickenpox, seven for mumps, one for tuberculosis, and two each for diphtheria and whooping-cough.

Institution Treatment for Inebriates.—A bill prepared by Dr. DeLancey Carter of Brooklyn has been introduced into the Legislature of this State to establish an institution for inebriates with representative citizens as trustees. The bill provides for a systematic inspection of the prisons, jails, and penitentiaries, and the transferrence from these institutions to the inebriates' home of persons who are confined for habitual drunkenness. The institution will retain patients pursuant to the rules established by the State Board of Charities, receive patients, public and private, as the financial circumstances of each individual seems to warrant, and provide a systematic investigation of the large number of cases improperly diagnosed as alcoholic coma instead of concussion. The expenses of the institution will be provided for by a small percentage of the State excise collected in the city of New York.

Quintuplets.—From Steubenville, O., comes the report of the birth of quintuplets, whose aggregate weight was twenty-three pounds, while their mother is said to weigh only one hundred pounds. Three of the infants died within an hour, but the others are thought to have a chance of recovering. Two of the father's brothers have been the fathers of twins and two others the fathers of triplets. His first wife died, according to the newspaper account from which we quote, after having given birth to triplets.

Fire in New Haven Hospital.—On February 28 a fire causing damage estimated at $25,000 broke out in Grace Hospital of New Haven and made it necessary to remove the ninety patients in the building to places of refuge. As a result of exposure one patient has died and others are in danger. The students of the Yale Medical School, who were at recitation when the fire was reported, were dis-

missed in order to assist in the transportation and care of the patients. The fire started in the living rooms of the servants and the top floor of the building was destroyed.

The "Archives of Internal Medicine" is the name of a new journal published under the auspices of the American Medical Association. The journal will be issued monthly, under the editorial management of Drs. Joseph L. Miller of Chicago, Richard C. Cabot of Boston, George Dock of Ann Arbor, David L. Edsall of Philadelphia, Theodore C. Janeway of New York, and W. S. Thayer of Baltimore.

Concert Benefit for Augustana Hospital.—Recently the Swedish organizations of Chicago gave a concert benefit for this hospital, the proceeds of which amounted to nearly a thousand dollars.

Rat Catchers in San Francisco.—As a part of the vigorous prophylaxis against plague being carried on by the health authorities in San Francisco a corps of 200 inspectors and rat catchers has been organized, and a bounty is paid for the dead rodents.

Influenza in London.—The cable despatches state that London's grip epidemic shows no signs of diminishing, but is, if anything, increasing. Last week 126 deaths were reported in London as due to this cause, the record for the preceding weeks being 84, 34, and 32, respectively.

Yellow Fever in Cuba.—Yellow fever is said to be still present in Havana and elsewhere in Cuba. A private of the Fifteenth United States Cavalry died of the disease last week at Santa Clara.

Harvey Society Lecture.—The eighth lecture in the Harvey Society course will be delivered by Professor Ross G. Harrison of Yale University at the Academy of Medicine on Saturday evening, March 7, at 8:30 P.M. Subject: "Embryonic Transplantation and the Development of the Nervous System."

Carnegie's Gift to the Koch Institute.—Mr. Andrew Carnegie has announced his intention of giving the sum of $100,000 necessary to complete the amount of $250,000 required to endow the Koch Institute in Berlin for the study of tuberculosis.

Arrests for Failing to Wash Milk Cans.—The first arrests for violation of the new section of the Sanitary Code, which makes failure to wash milk cans a misdemeanor, were made on February 29, when East Side offenders were taken into custody and held in bail for trial. It is the intention of the Health Department to enforce this regulation strictly before the advent of the hot weather.

Ambulance Upset.—A Flower Hospital ambulance, which was conveying to the hospital an ironworker who had been injured on the Third avenue elevated structure at East Sixty-seventh street, was run into on Saturday by a Consolidated Gas Company wagon at the corner of Sixty-seventh street and Lexington avenue. The ambulance was overturned and the patient, who had a compound fracture of the leg, the surgeon and the driver were thrown into the street. The driver of the wagon was arrested.

Nassau Hospital in a Critical State.—In spite of the efforts that have lately been made to place this institution on a firm financial footing, there is still a possibility that it may be compelled to close, and a further appeal for contributions has been sent out.

Dr. Veranus A. Moore has been appointed director of the New York State Veterinary College, to succeed Dr. James Law, who retires in June. Dr. Law has been at the head of the veterinary college for the last forty years.

Banquet in Honor of Dr. Carmalt.—Dr. William H. Carmalt of New Haven was the guest of honor at a banquet held on March 5 in that city in commemoration of his long services as professor of surgery in the Yale Medical School, a position he relinquished last fall.

Diphtheria Death Under Christian Science Treatment.—A graduate from the Teacher's College of Columbia University who was engaged in settlement work on the East Side died of diphtheria last week. She was taken ill on February 8, and two days later her roommate sent for the patient's mother, who is a reader in the First Church of Christ in Philadelphia. For five days she treated her daughter according to the Christian Science methods, refusing to allow a physician to be called in, and then went back to Philadelphia, stating that the daughter was suffering from a mild attack of quinsy. As it was evident that the young woman's condition was serious, her roommate insisted on summoning a physician, who at once made a diagnosis of neglected diphtheria with severe renal involvement, and some days later the patient died.

Hillsborough County (N. H.) Medical Association.—This organization at its recent meeting held in Manchester elected the following officers: *President,* Dr. A. S. Wallace of Nashua; *Vice-President,* Dr. Eugene Wason of Milford; *Secretary-Treasurer,* Dr. E. Blaylock-Atherton of Nashua.

Death of von Esmarch.—The well-known German surgeon, Friedrich von Esmarch, for forty years professor of surgery in the University of Kiel, died in Berlin on February 23, at the age of eighty-five years. He had an unexampled experience as military surgeon, having served in many campaigns, and during the Franco-Prussian War was surgeon-general. His writings were largely devoted to surgical technique and war-time practice, and in 1873 at the Congress of the German Surgical Society he presented the elastic bandage for controlling hemorrhage to which his name is attached. In 1872 he married Henriette, Princess of Schleswig-Holstein. He leaves a son, Edwin von Esmarch, who since 1899 has been professor of hygiene in the University of Göttingen.

The Late Dr. Robert W. Taylor.—The following minute was adopted at the meeting of the New York Dermatological Society held on February 25: Dr. Taylor was one of the founders of the New York Dermatological Society, the oldest dermatological association in existence. Since its organization, in 1869, to the meeting held shortly before his death, and at which he was present, he has always been one of its most zealous members. An indefatigable student, an earnest and convincing teacher, and a brilliant and prolific writer, his death will not only be keenly felt by those who had the opportunity of working with him and profiting by the example of his energy and enthusiasm, but will be regarded as an irreparable loss to the medical profession. Among the eminent names which have been inscribed upon the muster roll of our society, Dr. Taylor's will ever rank high. No member has been more faithful in the discharge of his duties, and no one by his professional achievements has shed greater luster upon its membership. In our grief at the thought that he will meet with us no more we feel that we have lost not only a very distinguished colleague, but a most estimable friend. (Signed)

George Henry Fox, Hermann G. Klotz, Edward B. Bronson, Committee.

Obituary Notes.—Dr. Charles W. Sonnenschmidt of Washington, D. C., died on February 28, in his seventy-seventh year. He was a native of Germany, but came to New York when a youth. He was for many years on the staff of the Homœopathic Hospital.

Dr. Robert Luedeking of St. Louis died on February 29, at the age of fifty-five years. He was born in St. Louis and was the dean of the Medical Department of Washington University.

Dr. Charles F. Fitzgerald of this city died on February 27, at the age of thirty-five years. He was a graduate of Holy Cross College and received his medical degree from the College of Physicians and Surgeons in 1898. He was assistant surgeon to St. Vincent's Hospital.

Dr. John H. Coverly of Brooklyn died on February 25, at the age of sixty-five years. He was of Scotch birth, but had practised in Brooklyn for about twenty-five years.

Dr. Alfred T. Halsted of Newark died on February 24, at the age of forty-five years. He was graduated from the University of Vermont with the class of 1891.

Dr. John Prorasco died at Plainfield, N. J., on February 25, at the age of sixty-six years. He was graduated from the medical department of the University of Pennsylvania in the class of 1869. He entered the Bucknell University as a member of the class of 1864, and would have been graduated in that year, but the entire class enlisted in the Twenty-eighth Pennsylvania Cavalry at the outbreak of the Civil War.

Dr. Isaac R. Trimble of Baltimore died on February 24, at the age of forty-eight years. His death was due to an infection received while operating on February 10. He was born in Talbot County and was a graduate of Johns Hopkins University and the University of Maryland. He was a member of many professional and other organizations and was at one time dean of the Woman's Medical College and professor of anatomy and surgery in the University of Maryland. At the time of his death he held a similar post in the College of Physicians and Surgeons and was surgeon-in-chief of the Baltimore and Ohio Railroad Company and of the United Railways Company.

Dr. Vesta D. Miller of Needham, Mass., died on February 25 in Boston, at the age of sixty-four years. She was born in Ketchumville, N. Y., and was a graduate of the College of Physicians and Surgeons in Boston. For ten years she was professor of obstetrics and gynecology in that institution, and she was a member of many medical societies and other organizations.

Dr. Horace B. Wing of Los Angeles, Cal., died on February 13, at the age of fifty years. Dr. Wing was born in Collinsville, Ill., and received his medical degree from the Chicago Medical College in 1886. The following year he went to Los Angeles and had practised there ever since. For some years he had been professor of clinical medicine in the Medical School of the University of Southern California.

Dr. J. J. Crook of Leadville, Col., died in Glenwood Springs on February 15, at the age of eighty-one years. Dr. Crook was a native of Kentucky and had served as surgeon during the Civil War. He then removed to Leavenworth, Kan., and was twice elected to the Legislature. In 1875 he went to Colorado, going first to Denver and four years later to Leadville.

Dr. George E. Ehinger of Keokuk, Iowa, died in West Chester, Pa., on February 14, at the age of eighty years. He was born in Germany, but came to this country in 1833 and was graduated from Western Reserve University in 1853. After practising for a time in Lee County he removed to Keokuk in 1864, and had continued in active practice until about four years ago, when he retired and removed to West Chester. He was an ardent botanist and some years ago presented his collections to the Keokuk High School.

Dr. William H. Semple died at Philadelphia on February 27, at the age of forty-three years. He was graduated from the Medico-Chirurgical College in the class of 1898.

Dr. Daniel S. Greenwald died at Philadelphia on February 20, at the age of fifty-five years. He was graduated from Jefferson Medical College in the class of 1885.

Dr. Alexander S. McClean of Springfield, Mass., the father of Dr. George C. McClean of the same city, died on February 22 of heart disease, at the age of eighty-seven years. He was a graduate of the Medical School of the University of Pennsylvania and had practised in Springfield for many years.

Dr. John C. Johnston of Butte, Mont., died on January 28 of diabetes at the age of fifty-eight years. He was born in Connellsville, Pa., and was graduated from Jefferson Medical College in 1874. He came to Montana in 1878 and, after practising for a year in Phillipsburg, removed to Butte.

Dr. S. F. Wentworth of Minneapolis, Minn., died on January 31 at the age of seventy-two years. He had practised in Minneapolis for twenty-six years, coming there from Malone, N. Y.

Dr. Cyrus T. Kimmel of Kansas City, Mo., died on February 1 at the age of seventy-five years. He had been a resident of Kansas City for over twenty-five years, having formerly been in practice in Brunswick, Mo. For the past year he had been an invalid.

Dr. Frank P. Leckner of Detroit, after a long illness, died on January 28 at the age of forty-two years. Dr. Leckner was graduated from the Michigan College of Medicine in 1893 and had practised in Detroit for fourteen years.

Dr. Douglas S. Flewelling of Somerville, Mass., died on January 31 at the age of forty-seven years. He was born in Clifton, Md., and was graduated from the New York University Medical School in 1892, shortly after which he began practice in Somerville.

THE SEVENTH HARVEY SOCIETY LECTURE.

The seventh lecture of the present series given under the auspices of the Harvey Society was delivered at the Academy of Medicine on Saturday, February 22, in the presence of a large audience. The speaker, Professor Otto Folin, of Harvard University, took as his subject "Problems of Chemistry in Hospital Practice," and began by discussing the organization of the biological laboratory and its relation to the hospital.

Very few of the hospitals in this country were properly organized in respect to their biochemical laboratory. Perhaps this was due to the fact that so few men were really fitted for the positions he had in mind. The biochemical laboratory and the hospital should work hand in hand. There should be a trained biological chemist at the head of the

laboratory, and he should have entire charge of the work in the laboratory. A number of wards should be set apart for his special investigations, and he should be given every facility for working out his problems, independently of any other medical officer of the hospital. It was important to realize that research work of the highest kind could not be done under direction of any one save the person working out the problem. Studies of this sort could not be planned out beforehand, but must be left to develop themselves. While the biochemist would, therefore, cooperate with the attending physicians and surgeons, he should be left with the entire direction of the researches.

At the present time, according to the speaker, there was but one large American university which devoted itself to turning out men fitted to lead work of this kind. The ordinary chemist could not take up these problems because he knew almost nothing about physiology, and similarly the physiologist would not fill the requirements because he did not know how to work practically with his most important tools. What was needed was a man trained thoroughly in both branches. The demand for such men far exceeded the supply. The speaker said that any one of the biological chemists now engaged in this work could have changed his position twice or three times in the past year, so great was the demand.

Professor Folin then discussed metabolism studies. Until recently such studies were generally based on observations on the nitrogen equilibrium. This, he had repeatedly pointed out, was not a sound basis. There were many other factors which should be considered. He believed that the near future would show that much of the work on this subject which had been done in the past twenty years was worthless. It would also be shown, the speaker believed, that a study of the neutral sulphur, of creatin, creatinin, and of the undetermined nitrogen would yield a great deal of valuable information. In making analyses of the urine, too much stress should not be laid upon the necessity for working with the mixed urine passed during the entire twenty-four hours. The ordinary method of urine examination was worse than useless, for it often led to fallacious conclusions. The speaker illustrated this with a number of examples.

The analysis of the urine in diabetes was discussed, and especially the presence of acetone, about which so much had been written. In the speaker's experience he had never found acetone in the urine of a diabetic subject provided the examination was made on the freshly voided specimen. The peculiar sweet odor of the breath of diabetics had also been referred by many to the presence of acetone. Professor Folin did not believe that the odor came from the breath, but came from the stomach, and it was not due to acetone.

Among the interesting problems which the biological chemists were now studying was the question of the metabolism in typhoid fever, and the best diet for those suffering from this disease. To the speaker's knowledge, three different laboratories had recently investigated this problem and would soon be ready to publish their results.

In closing the lecture the speaker expressed his belief that the most promising field of medical research at the present time was that now presented to the biological chemist.

The thanks of the members of the Harvey Society was moved by Dr. P. A. Levene, who spoke of the revolution which Professor Folin had made in the analysis of urine, and of the stimulating influence which that investigator had exerted on biological chemistry applied to medicine. The chairman, Professor Graham Lusk, spoke in a similar vein, and referred to the work now being done in the metabolism of typhoid fever. He had himself tried to investigate this subject some years ago, but the number of difficulties presented by the present organization of hospitals made the work practically impossible to carry out. Thus it was almost impossible to obtain regularly twenty-four-hour specimens of urine from the patients. Some orderly or other was always forgetting or throwing the specimens out. Professor Lusk also gave a humorous description of the difficulties which had attended some studies on the metabolism in dogs, in which it had also been hard to obtain full twenty-four-hour specimens.

The next lecture of the series will be held on Saturday, March 7. The speaker will be Professor Ross G. Harrison of Yale University, and the subject, "Embryonic Transplantation and the Development of the Nervous System."

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent)

ROYAL COLLEGE OF SURGEONS, CURATORSHIP, APPOINTMENTS FOR MEMBERS, ETC.—CONGENITAL STENOSIS OF PYLORUS.—NUTMEG POISONING, CHEMISTRY OF THE OIL.—ARTERIOSCLEROSIS.—OBITUARY.

London, February 14, 1908.

At yesterday's meeting of the Council of the Royal College of Surgeons there was an unusually full program.

The council appointed Arthur Keith conservator of the museum in succession to the late Prof. Chas. Stewart. Mr. Keith graduated at Aberdeen in 1888 and after some years work abroad engaged in research work in the college and other London institutions, taking the F.R.C.S.. In 1895-6 he became demonstrator of anatomy and curator of the museum at the London Hospital Medical College and lecturer on anatomy in 1899. He is an active member of the Anatomical, Zoological, Anthropological, and other societies, and the author of numerous papers relating to anatomy, human and comparative.

A form of circular was agreed to and ordered to be sent to Fellows and members asking their opinion as to whether or not women should be admitted to examinations for the college diplomas. It was decided to inform the College of Physicians that further steps in the matter would not be taken pending the result of this inquiry.

A memorandum was also adopted to be sent to hospital authorities on the question of the rights of members to be candidates to appointments equally with university graduates.

Mr. Watson Cheyne, C.B., F.R.S., was appointed Bradshaw Lecturer and Dr. Ward Cousins representative on the Midwives' Board.

A small committee was appointed to keep the council informed as to what is being done from time to time regarding the medical inspection of school children and the arrangements for teaching elementary hygiene in training colleges and schools.

The Society for the Study of Disease in Children has had a very interesting discussion on congenital stenosis of the pylorus. Dr. Geo. Carpenter related in full detail a case in an infant of two months, breast-fed for a week, but then the bottle being substituted, it was sick after every kind of food, wasted and weak from starvation to such a degree that it looked as if it could not survive another night. The typical pyloric tumor was found, as large as an almond, hard as gristle, and there was gastric peristalsis in its direction. May 22 to June 6 gastric lavage and two-ounce feeds of whey were tried without benefit. Next humanized milk was given for a week. Then milk diluted with double the quantity of water was tried in two-ounce to three-ounce feeds. After a week of this the infant "began

to forge ahead" and is now well. Dr. Carpenter insisted on the importance of detecting the pyloric tumor. Otherwise one could not be sure that a case was hypertrophic. Spasm produced similar symptoms—vomiting of accumulated feeds, gastric peristalsis, etc. But he held the hypertrophic form was an abnormality of development and not a result of spasm, as some have supposed. Microscopically he had seen the pylorus muscle and more or less of the stomach muscle near it hypertrophied. Yet he thought dyspepsia was at the root of the evil, and if that were cured the tumor could be let alone. The most hopeless looking cases should not be abandoned by the physician. If the surgeon were called in, better late than early. It was possible cases cured by the physician might recur later, as Seefisch had reported three such cases operated on before the twelfth year. Even so the mortality would be less at that age, so that it was better for the infant to postpone the operation.

Dr. Edmund Cantley read a paper on the pathology of the disease. He did not believe spasm gave rise to hypertrophy. Recovery from spasmodic cases, mistaken for hypertrophy, led to an unduly favorable estimate of medicinal treatment. True hypertrophy is peculiar to the first few months of life and it varies from a degree of hyperplasia, which is fatal unless surgically treated down to a slight degree compatible with life if no secondary effects occur, *e.g.*, dilatation of stomach, gastric catarrh, and sometimes acute edema of the pyloric mucosa from muscular contraction. This contraction might be so slight as only to prevent sufficient food passing, yet the cases died from marasmus, although there was food found post mortem in the intestines. This made him critical of diet and lavage, and drugs he found useless. He rejected the assumption of hyperchlorhydria. Medical treatment should not be too prolonged, as the greater the degree of marasmus the less chance for operation.

Dr. Sutherland said operation was very serious, and many who had undergone it died later from some bowel trouble. The pylorus was an uncertain thing to feel in an infant and the diagnosis could be pretty clear from vomiting, constipation, wasting, and visible peristalsis. If trouble arose with breast-fed infants the fault was with the manner of feeding—not with the milk. Small feeds were required. If a residue was left in the stomach after a day or two of lavage the infant was not having proper food.

Mr. Lockhart Mummery said there could hardly be a more unsuitable subject for a severe operation—a young child, badly nourished, probably having vomited all nutriment for some days before. The prospect was good only before wasting when there was some fat.

Dr. C. W. Chapman put in a word for bismuth carbonate in large doses—a teaspoonful might be given.

Mr. H. Lect said too many cases were hopeless when the surgeon was called in. The physician ought to be clear from the commencement as to how long he would try medical measures, lest the prospects of operation should be too far diminished. He favored gastroenterostomy as simpler than pyloroplasty and safer than Loreta's operation.

Dr. Reginald Miller said the symptoms of stenosis might all be due to spasm. Last year forty cases were collected at the Clinical Society, and in seventy per cent. the onset did not occur till the third or fourth week. Many babies vomited from birth, but not enough to cause wasting, and the constipation was often absent during the first two or three weeks. This seemed as if there was not marked blocking as a congenital lesion. Secondly, only the circular fibers were hypertrophied, and if spasm were the only cause the longitudinal should be also. Thirdly, though the baby did not live, yet as a result of diet and lavage the death was usually due to diarrhea, showing that the pylorus was again patent—presumably the spasm had been relaxed. A fourth controversial point was that some cases had recovered after gastric peristalsis had been seen for weeks and the tumor, too, was palpable. These cases seemed to be identical with those investigated by Dr. Cantley. As to the cause of spasm he thought it might be due to some congenital defect in the gastric juice, but he would not admit hyperchlorhydria. It would be quite an engaging idea if hyperacidity could be considered a cause—a condition seen often enough in babies, but which generally gets well in a few weeks. On the whole he regarded spasm of the pylorus as the cause of all the, if not of the disease, itself

Nutmeg poisoning is not very common here and the literature about it is scanty, but Professor Cushny stated at the Therapeutical Section of the Royal Society of Medicine that on your side Dr. Wallace had investigated it and found the cases all due to the crude nut or to mace. It had been used as an abortifacient, but seems to have no claim to such an action. A case was recorded by Lobelius in 1576 in which a woman became delirious. The death of a boy has been also recorded from eating two nutmegs. The poison is in the oil from which myristicin and some other bodies have been isolated. The symptoms usually noted are drowsiness, diplopia, and delirium. Giddiness is common and, as might be expected, burning pain in the stomach is the first manifestation of local irritation. From experimental work Dr. Cushny concludes that the effects are due to the central nervous system which is depressed, though there may be signs of stimulation, such as restlessness, tremor, and convulsive movements.

Dr. Power said he had been working on the chemistry of the oil, which he found very complex. He isolated much myristicin, which differed a good deal from previous descriptions. The small amount contained in the quantity of nutmeg which set up symptoms suggested a doubt as to whether the poisoning was altogether due to myristicin.

The causation of arteriosclerosis next occupied the section. Prof. W. E. Dixon referred to two theories: (1) Raising blood pressure, (2) toxic influences. He said it had been proved by experiment that the condition could be produced in animals by simply compressing the abdominal aorta for one minute, once or twice a day, and that for a comparatively short period. The changes consisted in a drawing out of the elastic fibers and degeneration of the muscular coat, plaques of calcareous material being formed. This could be brought about in man by very violent exercise, particularly as he grew older, when the rise of blood pressure after exertion was greater than in youth. The effect of nicotine on blood pressure was referred to by Dr. Dixon, who compared the sudden high rise in a young smoker after his first cigar with the slight rise in a moderate smoker and the absence of effect in habitual smokers. He suggested that a ferment which counteracted the nicotine might be produced—probably in the liver.

Prof. Cushny did not think raising the pressure as, for example, by digitalis, would set up in man the changes described by Dr. Dixon in animals.

Votes of thanks were accorded to both Professors Cushny and Dixon for their interesting accounts of their work on these difficult subjects.

Inspector-General Sir John Denis Macdonald, K.C.B., R.N., M.D., F.R.S., died on the 7th inst. in his eighty-second year. He entered the navy as assistant surgeon in 1840, and in 1852 he joined the *Herald* for exploring and surveying service in the Southwest Pacific. In 1850 his scientific work and contributions led to his being elected F.R.S. when only thirty-three years old. From 1870 to 1880 he was Professor of Naval Hygiene at Netty, and from 1883 to 1886 Inspector-General of Hospitals and Fleets. In the last-named year he retired, and in 1902 was created K.C.B.

Surgeon-General Wm. Hy. Rean, M.D., died on the 6th inst. in his eighty-first year. He took M.R.C.S. in 1852 and M.D., S.I., and the following year, after a term as house surgeon at the Middlesex Hospital, he entered the Indian Army, in which he served through the mutiny.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

MANILA MEDICAL SOCIETY—A FALSE ALARM OF PLAGUE—NO EVIDENCE OF RAT INFECTION—CHOLERA—REMOVAL OF LEPERS TO CULION.

MANILA, P. I., January 18, 1908.

THE regular monthly meeting of the Manila Medical Society took place in the building of the Philippine Medical School on Malecon Drive at 9 P.M., January 6. No regular papers were read, only a few clinical cases being shown. Among others was a true case of Graves' disease, an authenticated case of which has not heretofore been reported among Filipinos. The principal object of the meeting was the election of officers, and the following were elected for the ensuing year: *President*, Dr. Harry T. Marshall; *Vice-President*, Captain and Assistant Surgeon James M. Phelan, U. S. Army; *Secretary-Treasurer*, P. A. Surgeon Philip Garrison, U. S. N.; *Councillor*, H. D. Kneedler, M.D.

On January 4 a case was encountered in the city which occasioned considerable activity in health circles. In the district of Santa Cruz a Filipino, aged about 18, an employee in an umbrella and hat factory, became suddenly ill

on the morning of January 3. He complained only of severe pains in the chest; no vomiting nor diarrhea was present. No reliable data are available, but from the best information to be had it appears that he had no fever. On the morning of January 4 he died; this was the first time the case came under medical observation. The body was sent to the San Lazaro morgue as a cholera suspect, but upon autopsy the findings common to severe forms of septicemic poisoning were encountered. There were extensive hemorrhages throughout the lungs and upon the serous surfaces of the heart, slight enlargement of the spleen, and considerable free fluid in the abdominal cavity. The intestines showed slight signs of enteritis, but no special pathological changes were noted. The mesenteric glands were considerably enlarged, exuding serum freely upon section. A similar condition likewise obtained in the lymphatic glands of the chest. Smear preparations were made from the glands and stained in the usual way for plague bacilli, and typical bipolar organisms were found. A number of experienced microscopists examined the specimens and all were unanimously of the opinion that the organisms closely resembled those of plague. Cultures were likewise made of the intestinal contents. With a pathological picture that so closely resembled that of plague the Bureau of Health deemed it necessary at once to inaugurate all the modern methods for combating this scourge. The house in which the case occurred was thoroughly disinfected and later treated with petroleum. All textiles were soaked in a bichloride solution, and rat bane and rat traps were placed around the premises, and a general campaign of rat catching was commenced throughout the entire city for the purpose of ascertaining whether the rats of Manila were plague infected. (A limited number of rats are caught weekly in Manila throughout the year and examined for plague, but none have been found infected in nearly two years.) A careful investigation was made of this case from the clinical and epidemiological standpoint, with a result that indicated as closely as an investigation of this kind could that the case was likely not plague. In the meantime the laboratory investigation was continued and within a period of forty-eight hours cultures which had been obtained from the glands grew with typical spore formation, showing almost conclusively that they were not plague bacilli, particularly because the latter do not produce spores, and more time being required for cultures to grow. The diagnosis was still further clarified by an almost pure growth of cholera vibrios being obtained from the cultures which were taken from the intestines. Inoculations into guinea pigs failed to produce plague.

A total of nearly a thousand rats have been caught in various sections of the city since then, and a careful laboratory examination made of them, but so far no plague infection has been found among these rodents. The interesting question now resolves itself into the determining as to just what this organism is that so closely resembles plague bacilli in smear preparations.

Cholera has again made its appearance in more or less virulent form in Manila. Since January 1 there have been 143 cases, with 100 deaths reported. In the provinces there have been 226 cases, with 187 deaths.

The project of the Government to transfer all lepers in the Philippine Islands to Culion has been moving steadily forward. The construction of additional buildings at Culion is now well under way. Among these is included a large camarin of reinforced concrete for the storage of rice and other food stores. The need for such a building was keenly felt in order that the subsistence supplies might be safeguarded against fire. At the end of January there will be accommodations for 1,200 lepers. In November, 148 lepers were transferred from the province of Cebu. This makes a total of 827 lepers transferred from that island to Culion, and it is estimated that there yet remain in that province at least 150 lepers. There were also four lepers taken from Capiz, two from Occidental Negros, and four from Iloilo, who had not been collected at the time the general transfer of lepers from these provinces was made.

Unfortunately, with the last lepers it became necessary to transfer a number who were also afflicted with beriberi. The cases of this disease increased after they reached Culion and a number of deaths resulted, which materially increased the average death rate at the colony.

Health in the Navy.—Surgeon-General Rixey's recent annual report shows that for the past year the total number of deaths in the navy was 241, a ratio of 5.66 per 1,000. Of these only 144 were from disease, the others being due to accidental injuries, including 31 deaths by drowning.

REFORM OF MEDICAL ONOMATOLOGY.

To the Editor of the Medical Record:

Sir:—The editor of the journal, *Salpinx*, of Cyprus, honored me by an invitation to contribute to its jubilee number—the twenty-fifth anniversay of the existence of the journal—and I accepted with pleasure and satisfaction. Presuming that what I said at the occasion may be of interest to all those who have followed my exertions in regard to reform in onomatology, I give here the contents of the article I sent to Cyprus. Whoever has observed how these exertions, the main feature of which was to disseminate a better understanding of Greek history and of the language of Christian Greece among American and German physicans, have been appreciated and encouraged by the *Salpinx* during the past fourteen years, will understand how deeply I am indebted to Mr. Chr. S. Chourmouzios, the editor of that paper.

I wrote as follows: * * * I shall confine myself to one feature which has especially appealed to me when reading the *Salpinx*, viz., the quotations from the writings of Koraïs, the noble son of Greece, the great scholar, patriot, and physician. Koraïs expressed his conviction that no remedy could heal the misfortune of the Greeks but the light of science. From the moment he read his memorial before a learned society in Paris, in 1803, about the condition of his country, in order to direct the eyes of the civilized world to it, he created esteem for the Greek nation. Koraïs has had followers who enlightened Europe on Greek matters; Bikelas gave his seven lectures on the history of modern Greece and the Greek question in Marseilles and Paris. These lectures brought about Philhellenism and the formation of a Philhellenic Society in France. This society had a short life, and so had the Philhellenic Society of Amsterdam, founded and conducted by the indefatigable H. C. Muller. Both societies were composed of distinguished members, and many of the contributions to their organs are of everlasting value; otherwise these two organizations have accomplished little.

The next followers of Koraïs are Hatzidakis and Papademetracopoulos; they have demonstrated to the world of science the true relation of the Greek of to-day to the Greek of ancient times. It is not possible any more that any one can speak of Greek as a dead language, but it should also be made impossible to call Greek spoken and written to-day "New Greek." One thing is certain, that these two men, Hatzidakis and Papademetracopoulos, will be appreciated more and more; they have rendered their country the greatest service by enlightening Europeans on the Greek language and its history. What they have imparted will be disseminated. Applying now what we have learned from them to Greek in medicine, we find that the great problem of reform of medical onomatology, which has vexed so many European scholars for centuries, can be solved in the simplest and easiest manner. What little I have been able to do to direct the attention to the possibility and facility of this solution, I did with the aid of Dr. B. Leonardos, whom I consulted on medical terms, and, in fact, without him I would have accomplished nothing.

On this festive and joyful occasion I wish to introduce all my friends who have stood by me to the readers of *Salpinx*. There is, first, Heinrich Zimmerer, who, a German professor of philology, the philological editor of a medical lexicon, has accepted corrections made with the aid of Greek medical onomatology of to-day. My joy and satisfaction over this fact know no bounds, and I wish long life to my esteemed friend, Professor Zimmerer, and to the celebrated Professor Vierordt, the medical editor of the lexicon. The warmest Philhellen, Colonel Adelbert Boysen, has gained for me in German what I could not obtain in America—access to some important German secular journals. His name is well known in Athens. Dr. Karl Gumpertz, the editor of the *Deutsche medizinische Presse*, has had the courage to publish my articles, by which I attacked deep-rooted prejudices. Dr. Herbert Krüger was my first "secundant" when my writings appeared in the den of the lions, in a Berlin medical journal. Dr. Julius Bartsch, who wrote well-calculated words in behalf of living Greek in medicine in reference to my writings. Inestimably great service has been rendered to the cause by Dr. Eschle, who has taken up the fight for reform in medical onomatology, making the memorial addressed to the rectors of the German universities the base of his writings. In Holland H. C. Muller, the distinguished philologist, has devoted a series of articles in a medical journal of Utrecht to the question, in which he refers to my numerous writings.

Of Americans I wish to praise Dr. D. B. St. John Roosa, who was presiding at the New York Academy of

Medicine when I read my paper on "Greek as International Language of Physicians and Scholars in General," in 1894, and he has stood by me firmly through all the struggles I have gone through these fourteen years, while working for reform of medical onomatology. My sincerest thanks are due to Dr. J. J. Lawrence, the editor and proprietor of the *Medical Brief*, who not only paid me liberally for my contributions on medical onomatology to his journal, but also gave me $1,000 for the new medical lexicon which I intend to write with the aid of my colleagues and friends in Athens. I am keeping this money sacred to apply it when I shall have finished my preparations for the work. How the Greek colleagues have honored me is narrated in the memorial addressed to the German rectors.

Greek in medicine was the theme of my lecture at Johns Hopkins University, and medical Greek has now been the cause that old prejudices are disappearing. I congratulate myself for having succeeded in introducing in Germany a better nomenclature. The starting movement, however, came from America, and the editors, Stedman, who first of all spoke of living Greek in reference to medical language, Foster, Gruhe, and recently Cattell, will forever be named when the history of the reform in onomatology shall be written as the ones who enabled me to carry on the fight, without whose help I would have been helpless. Without my writings, which were published in their journals here in America, I would have received no recognition in Germany.

A. Rose, M.D.

New York.

A NEW FISH FOOD.

To the Editor of the Medical Record:

Sir:—Nowhere else in the United States are economic conditions so pronouncedly elemental as are found in New York City. On the heights full-fed luxury scrambling into a coveted place in "the diamond horseshoe"; in the depths pathetic misery standing in line, craving bare sustenance, with cost of living advancing so rapidly that the workingman's staple diet throughout the year may soon be summed as beer, bread, and potatoes. The present almost prohibitive cost of beef—and cold storage product at that, with its progressive shrinkage in nutritive values from moment of beginning refrigeration—gives to any fresh substitute for meat a peculiar importance. In Italy I find regularly served a fish food which Americans discard through ignorance and prejudice. In the writer's grandfather's day in Philadelphia tomato plants were allowed to exist in the family garden and considered as ornamental, but were never eaten. A fish plenteously distributed up and down our coasts from Maine to Panama throughout the year, and one as palatable as bonita, sturgeon, or halibut, is systematically cast out of the pound-net "fare" at every haul, and thrown away with a malediction by the doryman of the "off sea" fishing smack. Here the finny tribesman finds ready sale at the price of fifteen "soldi" per kilo weight, equal to about eight cents a pound. Anyone who has watched a shark—for it is this fish with which the writer is dealing—romping in a school of "blues" need have no fear that it is not a cleanly feeder. The color of the meat resembles that of the shad, but is of firmer consistency and has comparatively few bones beyond the central spinal column.

At a price of two or three cents a pound tons of these fish varying in size from two to six feet in length could be landed daily at Fulton Market with a fair profit. For a season or two, or until the "corner" manipulator in food staples began his work of price boosting, the fish would prove a worthy addition to the poor man's market basket.

Frederic Griffith, M.D.

Rome, Italy.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 20, 1908.

The Mattapan Day Camp.—D. Townsend gives an excellent description of the work of the Boston Association for the Relief and Control of Tuberculosis at the Mattapan Day Camp. The article is largely statistical and takes up not merely the medical, but also the executive questions suggested by such an institution. The facts he brings out will be of great value to all those who are interested in day-camp work for tuberculosis. The author informs us that the patients come in the morning as early as possible and spend the day in reclining chairs at rest, or indulge in moderate amusements; those who are able are allowed and encouraged to do light work about the camp. In the late afternoon they return to their homes. Patients with a temperature of 100° or above, or a pulse of 120 or above, are placed in one of the rest tents to ensure absolute rest and quiet. Each patient is weighed once a week; this means body weight; the women are weighed with a sheet, 1¾ pound; examined once a month; their pulse and temperature taken twice a day, morning and evening; and the sputum is examined for the presence of tubercle bacilli, as far as practicable, once a month. All these findings are recorded. The throat physician examines all new cases entered previous to his visit and treats all the old cases who need treatment at this time. At 9:30 A.M. a lunch of bread and butter and milk is served; at noon there is a dinner of meat or fish, potatoes, another vegetable, and a wholesome dessert (preferably made of milk and eggs); at 4 P.M. another lunch of milk and bread and butter. When needed eggs are served in addition to the lunches. No medicine is used except symptomatically. The chief aim of the camp is educational.

New York Medical Journal, January 22, 1908.

The Management and Treatment of Tuberculosis in Infants and Children.—J. L. Morse notes that the chief characteristics of tuberculosis in infancy are its malignancy and its tendency to dissemination. The restriction of tuberculosis to a single organ and the involvement of the lungs, as it occurs in later childhood and in adult life, are very unusual. The fatality of tuberculosis at this age is so great, therefore, that little can be hoped from any form of treatment. In young children the tendency to localization is greater. The bones and serous membranes are much more frequently involved than the viscera, and there is also a decided predilection for the lymphatic system. In older children pulmonary lesions are more common, the frequency increasing directly with the age, but they are comparatively rare before puberty. The course of pulmonary tuberculosis at this age is more rapidly progressive than later. At puberty the lesions, course, and treatment are essentially the same as in adults. Children are more rapidly enervated by warm climates than are adults and are not, as a rule, robust to bear extremely cold climates. They accommodate themselves to institution life, however, better than do adults, and after the first few days are almost never homesick. Surgical cases do better at the seashore than inland. The progress of pulmonary disease in early life is worse than in later life. The dietetic treatment is essentially the same as with adults, but greater skill is required to avoid upsetting the digestion. Drug treatment is purely tonic and symptomatic. The children of tuberculous parents should, if possible, be sent away from home. When they cannot be sent away from home much can be done by regulation of their life and by guarding them against infection from the parents. Children suffering from latent tuberculosis or for any reason predisposed to it should, if possible, be given proper climatic treatment or sent to sanatoria. If this is not possible, every attention should be paid to their hygiene, food, rest, and care. The children of the poorer classes should be sent to fresh air schools, and given the advantages of country or seashore air whenever possible.

Precautions To Be Taken in Going South.—Most sensible advice with regard to Southern journeys is given by W. J. Robinson of Florida. Patients should be cautious when arriving at their journey's end, especially if arriving at or just before dark. In the hot climates the temperature may abruptly fall at this hour. Lack of caution in this regard may cause pleurisy or pneumonia. If the traveler is delicate or perhaps convalescent from acute disease, it is an excellent plan to go to bed on arriving, and if hot and perspiring, an alcohol bath and a stimulant would not be amiss. On waking the next morning, if not fully rested and refreshed, it might be just as well to stay in bed during the morning or even the whole day. The fare in the first-class hotels is as good as at the North. Visitors are apt to overindulge in fruit and fish, with the customary indigestion and bowel complaints as a result. The climate presents certain well-defined changes during the day so it is necessary to bring both warm and cool clothing. The author says that he gives to his patients the following advice on this point: "Never change the clothes you have on for lighter ones during the day. Look out of your window in the morning on rising, and if the day is warm and sunny do not fear to put on the thinnest things you have in your trunk and go out. If you find them too thin as the day goes on, then is the time to change to your thicker things again, and you may find them very grateful, for slight changes of temperature are felt much more in hot climates than they are at home." The article avoids discussion of all medical matters and can be very properly placed in the hands of all contemplating a Southern journey.

The Rational Treatment of Iritis.—A. Brav advises the initial clearing out of the gastroenteric canal. Emetics should be avoided. The eye should be placed at rest by atropine or, if it produces poisonous effects, we may use sulphate of duboisine or hydrobromide of scopolamine; if it is necessary to reduce tension, sulphate of eserine. For pain the hot, moist compress gives the greatest relief. Poultices are to be avoided. If morphine is required, it may be combined in the rheumatic cases with the salicylates. Adrenalin is useless and may be harmful. Dionin may be used in combination with cocaine and atropine and while dionin itself (ethyl morphine hydrochloride) does not relieve the pain, it is a useful agent in promoting the absorption of the inflammatory product. Hypopion complicating iritis rarely requires special treatment. Rest, hot compresses, dionin locally, and a cathartic will usually cause the exudate to be absorbed. In rare cases surgical intervention (paracentesis) may be necessary. As to posterior synechia, the ideal treatment is, of course, prevention. A few small adhesions do no or very little harm, and they are, perhaps, better let alone. An effort may be made to break the adhesions by means of a strong mydriatic. Occasionally it is well to contract the pupil first with eserine, followed by a counteraction with a strong solution of atropine. If no success follows this process it is best to discontinue the drugs. It must be remembered that the prolonged administration of atropine may give rise to a secondary glaucoma. Large posterior synechiæ, and especially the annular synechiæ, are dangerous to the eyes, not because they are responsible for the recurrences, but because they eventually destroy the usefulness of the eye by causing a secondary glaucoma. It is advisable to do an iridectomy, although even the surgical procedure is not always crowned with good result. In syphilitic cases the system must, of course, be brought as speedily as possible under the influence of mercury. When the inflammatory symptoms are subsiding the iodide is of great value in promoting the absorption of the inflammatory product. Small doses of mercury should be given even after the eye shows no more signs of inflammation. It is the only safeguard against recurrence. Fresh air, good food, quinine for malarial complications are essential in building up the general state.

Some Unusual Effects of Gonococcus Infection.—W. F. Campbell refers to some of the unusual effects which have been reported by various authors of the gonococcic toxemia. These include cases of diffuse and severe inflammation of the entire upper extremity of one side, gonorrheal pleuritis, arthritic inflammations, pyemia, liver enlargement and icterus, peritonitis (in the male), proctitis, felon, etc. He refers to a personal case of a boy with compound Pott's fracture, which healed under every antiseptic precaution. Four days later pus appeared in the wound and continued to spread up the leg as far as the thigh, requiring extensive incisions about the leg and thigh to secure adequate drainage. Without any reference to the gonococcus, but desiring to find the germ cause of the extensive suppuration, a culture was made from the wound discharge a month after admission and the gonococcus found. It was then discovered that the patient was suffering from gonorrhea, a fact which had not been obtained on his admission to the hospital. He stated that he had acquired the infection three days after being exposed, about six weeks previous to his admission to the hospital. After four months the patient was discharged from the hospital cured with regard to the fracture, but still having slight urethral discharge. In this case infection by direct contact was impossible while the patient was at the hospital, and the cause of the suppuration can only be accounted for in two ways, (a) either the gonococcus circulating in his blood found a point of lowered resistance and there set up a focus, or (b) at the time of the accident the patient may have become inoculated from the germ in question present on his clothing. The author believes that the former supposition is correct.

Journal of the American Medical Association, Feb. 22, 1908.

Operative Treatment of Rectal Cancer.—The operation of dissecting away the bowel in cases of obstructive diseases of the rectum, though preserving the sphincter, and of bringing down the upper end and uniting it to the anus by free cutting of the mesocolon, is discussed by E. Archibald. He reports a case in which it was performed, and which, though unsuccessful so far as saving the patient was concerned, showed that the descending colon with the splenic flexure could be so loosened from its posterior attachments as to be capable of being brought down to the anus without interfering with its blood supply. He reviews the various operations that are or have been chiefly employed for rectal cancer, pointing out their drawbacks, and shows by reasoning and injection experiments on cadavers that it is possible to cut off the whole arterial supply of the descending colon, sigmoid and rectum and still have the circulation maintained as far as the lower end of the sigmoid at least, provided only that the vessels are ligated far back from the bowel so as to leave a broad flange of mesocolon containing the important anastomotic loops of the mesenteric border. He holds, therefore, that the cancerous rectum can be removed in its whole extent from the promontory downward, with the whole territory of the anorectal (Gerota) glands; that the upper segment by employing a proper method of mobilization may be brought down to and through the anal segment without tension and without danger to its blood supply; and, therefore, that the need of making an artificial anus is avoided, save for cases that come to operation during obstruction and the inoperable ones where obstruction threatens and short circulating is impossible, this applying only to cases where the sphincter does not have to be sacrificed. The operation as he would perform it is described in detail and is recommended as the normal procedure for cancers above the anus when the sphincter can be saved. The great advantage is the avoidance of the distressing artificial anus save in inoperable and obstructed cases. The operation being purely abdominal, the pelvic floor is left intact and we may expect normal sphinteric action in all cases. Other advantages claimed are thorough removal of the entire gland-bearing district, greater economy of blood, less cutting of sensory nerves, and less shock and presumably a lower mortality.

Vegetarian Diet in Psoriasis.—The value of a vegetarian diet in psoriasis is urged by L. D. Bulkley, who points out the features of the disorder, indicating it to be due to underlying constitutional conditions and refers to former articles by himself on the subject. It seems to him that the errors of nitrogenous metabolism which are evident in the urinary findings which are constant in psoriasis, must, when prolonged, have their effects on the skin, and, working on this hypothesis for many years, he has become convinced by clinical observation that psoriasis has its foundation in errors in the passage of nitrogenous elements into and out of the body. Bulkley does not advocate confining the treatment exclusively to a vegetable diet, though this is perhaps the most important part. Careful medical supervision in all directions is also required and the use of drugs when called for. He has had his most striking success in the treatment of the disease since he has adopted this plan, and while it has its limitations, and must be intelligently directed, he is confident that in proper cases it can control the eruption and prevent its recurrence.

Atypical Typhoid Fever.—J. P. Bates says that a class of continued fevers is seen in Panama and the southern portion of the United States, and probably also elsewhere, that are too long lasting and resistant to quinine to be malarial and too mild and short-lived in their course to fill the ordinary clinical picture of typhoid fever. He recognizes three groups or varieties of these fevers, the second being the most frequent and important. In the first group there is an irregular fever, lasting about a week, with temperature scarcely above 100° F. and no symptoms except bronchitis and some malaise. In the second group the fever lasts from seven to ten days and may reach 102° F. or more. There may be few or no symptoms, but there are generally headache, bronchitis, and some reddening and coating of the tongue. The patient is willing to keep his bed. In the third group the fever ranges from normal to 100° F., or a little above, and lasts for two weeks or more. In this class there are the usual symptoms of typhoid; there are low muttering delirium, sometimes wild mania, a red pointed tongue, tympanites, and retention of urine. After the close of defervescence there is nearly always a second rise of temperature of varying length and corresponding to the second rise or "*febris carnis*" in the more typical cases. Bates is sure that all these groups are typhoid fever; they occur and increase in numbers with typical typhoid cases, occur in the same houses and surroundings, they frequently relapse, and the relapse may be more severe than the original attack, and they give about the same proportion of positive Widal reactions as the typical cases. Lastly, in two cases affording an autopsy, one dying in a relapse, the other from perforation, the lesions of typhoid were found. These irregular cases afford every facility for the spread of the disease; not being recognized as typhoid they are not reported or controlled by sanitation and, therefore, are a perennial source of infection. He illustrates this by the experience in the Canal Zone. Two hundred cases are briefly analyzed and representatives of each group are reported. He takes up the subject of malaria, pointing out the features differentiating these atypical typhoid cases from malaria and showing from an analysis of 500 cases that malarial fever, if at all amenable to treatment, yields promptly, and lays it down

as a medical axiom that: "A fever which fails to yield to full doses of quinine in five days, although malarial parasites are present in the blood, is not simply and solely malarial fever, and the physician must look further for its cause." When a fever fails to yield to quinine and shows no physical signs or demonstrable bacteriological cause other than malarial parasites, it is, he says, perfectly safe to assume it to be typhoid fever.

The Diagnosis of Appendicitis.—I. C. Chase offers as a useful method for differentiating the pain in appendicitis from that of other conditions simulating it, the sudden and forcible compression of the descending colon in the flaccid abdomen, by pressure on the left lumbar and inguinal regions. The forcing of the gas in the colon backward to the cecum causes a sudden pain in the inflamed area, due to induced peristalsis or movement excited by the sudden cecal distention. He first observed the phenomenon in using abdominal massage for constipation in a patient after an attack of appendicitis, and has repeatedly verified its diagnostic value in real and supposed cases of the disease.

The Lancet, February 15, 1908.

Three Cases of Plague Treated with Yersin's Serum.—Of the cases reported by A. C. Dixon, two recovered and one died, the patients all being natives of Chili. The remedy was injected into the veins, as much as 80 c.c being employed at a dose. The author's experience convinces him (1) that unless the patient has a rigor after the injections the quantity of the serum used has been too small; (2) that the doses usually advised, say 40 c.c., are not nearly large enough for severe cases, and (3) that there is no ill effect from the intravenous injections of the Yersin serum.

The "Early" Operation in Acute Appendicitis.—F. A. Southam presents this subject in tabulated form. Of ten operations done within forty-eight hours all recovered. Of three intermediate operations, done from the third to the fifth day, two recovered and one died. Two late cases, after the fifth day, recovered. All the foregoing were private cases. Of fourteen hospital intermediate cases, seven died, and of fourteen hospital late cases thirteen recovered and only one died. As to indications for early intervention, he notes an early rapidity of the pulse, high temperature, initial rigor, urgent vomiting, acute pain, rigidity of the abdominal wall, and the absence of abdominal respiration. The advantages of surgical interference in the early stage of acute appendicitis are as follows: (1) The infective center—*i.e.* the appendix—can be removed in many cases before suppuration has taken place, and if it has not perforated or become gangrenous, the operation is practically an aseptic one. (2) If pus has formed, even though not encysted and surrounded by a barrier of lymph, it will usually be found to be localized as yet to the neighborhood of the appendix and small in quantity. In these circumstances its evacuation, together with the removal of the appendix, if followed by free drainage, will usually check the spread of the suppuration, which otherwise so often tends to become general. (3) The operation being performed before the onset of general toxemia, the common cause of death in fatal cases, is usually well borne by the patient. (4) The risks of the later complications of acute appendicitis, viz., subphrenic and hepatic abscess, empyema, parotitis, phlebitis, and infections in other parts of the body, are greatly minimized. (5) In the early stage the appendix—unless bound down by adhesions, the result of a previous attack—lies quite free and is therefore easily removable. In the later stages, especially in the less acute cases, it is often surrounded and imbedded in a deposit of lymph, which may form part of the wall of an abscess when the pus is encysted. In these circumstances, it is often not easy to recognize the appendix, and its removal is frequently difficult or impossible without breaking down this barrier of lymph, and thus running the risk of infecting the general peritoneal cavity.

Therapeutic Uses of Normal Serum.—The use of normal serum is commended by E. C. Hart, who has successfully used it in a case of anemia, a second, of tuberculous hemoptysis, a third, of probable gastric ulcer without hemorrhage in a chlorotic young woman, and a fourth of duodenal ulcer with hemorrhage. He believes that oral administration fulfills all indication, and that subcutaneous or intravenous injections are unnecessary. In the above various conditions it is not impossible, he says, that there is a common basis of autocytolysis, characterized by destruction of epithelial, endothelial, hemic or other cells, and that such autolysis can be inhibited by normal serum. Many interesting questions arise in connection with normal serum therapy. For instance, what share have the normal constituents of serum in the results obtained by the use of serums such as the anti-diphtheritic and the polyvalents which we now attribute entirely to the action of abnormally produced bodies? Although the author is optimistic as to the effects of normal serum therapy in various conditions, he says our knowledge of its action is so slight that caution must be exercised in its use, and it is desirable that methods of testing and standardizing the serum with regard to its anti-autolytic, anti-hemorrhagic, and other properties should be employed in the future. It is also important that serum should be used from a horse that has been repeatedly bled, as its activity seems to be thereby enhanced.

Acute Poliomyelitis Associated with a Diplococcal Infection of the Spinal Sac.—The case of a boy of twelve years is reported by W. Pasteur, A. G. Foulerton, and H. MacCormack. At the time of the report the patient was still crippled in the use of his lower limbs. The authors were able to make the following demonstration: Identification of a micrococcus in the spinal fluid withdrawn during life from a patient with symptoms of acute poliomyelitis, success in the production of an ascending motor paralysis in a rabbit after a prolonged period of incubation by inoculating this fluid into the subdural space; the demonstration on the death of the inoculated animal of a micrococcus in the cerebrospinal fluid similar to that seen in the fluid from the human case, and, further, by similarly inoculating another rabbit with an emulsion of cerebrospinal substance and fluid from the first experimental animal, they have succeeded in reproducing a motor paralysis, again after a somewhat prolonged period of incubation, and again associated with the presence of the micrococcus in the spinal fluid. But while they have succeeded thus in obtaining direct evidence of the infective nature of the illness and of its association with a certain microorganism, then evidence is incomplete bacteriologically, since they failed to obtain the micrococcus in culture on artificial media, and so are unable to give a complete description of it. The authors further believe that it has been established that there is a specific infective disease, of which acute poliomyelitis is a frequent and prominent, but not essential, feature. From the scanty information at our disposal it would appear that this specific disease has no clearly distinguishing primary features to enable one to differentiate it by its clinical symptoms from many other febrile conditions of probably infective origin which are frequently met with in practice, but which may not have sufficiently distinctive symptoms to enable a definite diagnosis to be arrived at. And so, whilst the serious complication of acute poliomyelitis when it has occurred has been at once recognized, the primary disease has not been differentiated hitherto, but has, in fact, usually been altogether overlooked.

British Medical Journal, February 15, 1908.

Acute Tuberculous Fever in India.—J. R. Roberts and R. S. Bhandarkar report thirteen cases of this newly recognized malady. During its course, which represents an acute invasion of the tubercle bacillus, the organism is found and continues to be excreted by the urine for a long time. The symptoms are thus described. There is a continued period of pyrexia of a remittent or intermittent type, lasting from a week to four weeks or more; the liver is often enlarged; the spleen not so; the bowels are constipated, generally obstinately. The abdomen shows some amount of meteorism, though this never reaches the extent seen in enteric fever. Vomiting and nausea are marked, though not continuous. The most distinguishing feature of this fever is pain and tenderness in the epigastrium, and it is on this that special stress must be laid in order to assist in the differential diagnosis. Some cases have acute exacerbations of pain, others only tenderness, which, if it be associated with hepatic enlargement, makes the diagnosis from liver abscess very difficult; but the detection of tubercle bacilli in the urine clears up all doubt. The mind is clear, generally remarkably so, except that when the temperature is high there may be some delirium at night. It is interesting to note that patients after recovery give a very clear account of their illness, mentioning the temperatures and symptoms, thus contrasting with the mental confusion of the typhoid state—making the memory of the illness a blank. The initial enlargement of the spleen in enteric contrasts with the want of enlargement in acute tuberculous fever. The tongue is furred, but its condition does not remind one of the "typhoid tongue." The skin is dry and hot; there are no hectic or malarial sweats. The urine is highly colored and contains no albumin. The writers think that this fever is completely recoverable from, and also maintain that it marks the launching of the patient on a tuberculous career. It is the beginning of a long period of ill health of an indefinite kind—dyspepsia of a flatulent type, relapses of fever, periods of general depression with a temperature below normal if frequently and carefully taken, a loss in

weight, and in some cases anemia. This general malaise is not continuous; the condition is varied by periods of good health. Practitioners have been apt to consider this as due to Indian climate and conditions, and recommend a change to Europe or the hills; in fact, just the class of case that does improve under this treatment, and improve immensely, perhaps never to recur. Another set of cases develop obvious tuberculosis—tubercle of the lungs, kidneys, etc. The initial acute tuberculous fever has been long forgotten or has been regarded as malarial. The mortality of the disease referred to is low, and it does not seem to run into the familiar automiliary tuberculosis of European countries.

The Prevention of Tuberculosis.—A. R. Gunn makes a suggestion in regard to procuring a tubercle-free milk. He points that in every community there are certain persons who seem to possess an inborn degree of immunity against tuberculosis which renders them less susceptible to its attacks than their less fortunate fellows. This immunity is transmissible and as time goes on this selective death-rate, which is naturally low among such partially immunes, affects the characters of the race. Now, says the author, if we assume the identity of bovine and human tuberculosis, we should expect to find that among cattle also there are certain individuals who under ordinary circumstances are proof to the disease. The author's proposal, then, is to take these immune individuals and breed from them a strain which would remain absolutely free from any taint of disease. That this is far from being impracticable is demonstrated by the fact that something similar has already been achieved in other forms of life. It has been shown that susceptibility and immunity are definite Mendelian characters, the latter being recessive; and that, by cross-breeding an inferior yet immune type of wheat—immune, that is, to the rust fungus—with a superior yet highly susceptible variety, certain of their offspring are capable of producing a strain which is possessed both of the immunity of the one parent and of the other desirable features of the other. If we can rear a breed of cattle which is practically immune to tuberculous disease, then, by attention to the ordinary requirements of hygienic science as regards cleanliness of housing and cleanliness of milking, the danger from infected food, whether in the shape of meat or milk, to which we are at present subjected, ought to be capable of almost complete removal.

The Treatment of Epidemic Cerebrospinal Fever.—After some observations on the mortality of recent epidemics in different countries, A. G. Robb records his experience with serum in Belfast. Out of 32 patients 22 recovered, 8 died and 2 were still ill at the time of his report. Figures of cases treated at the same time as his own and without serum showed the old high mortality rate, from which he concludes that the type had not become milder and that he personally was not treating unusually mild cases. He presents his results in tabular form and shows several temperature charts. As to dosage, he adopted the following rule: If the case was very severe and especially if pus was found in the fluid obtained by lumbar puncture, to give 30 c.c. or larger doses every day for three days. (In one of our recent cases 70 c.c. were injected within the first twenty hours after admission, with apparently good results.) In cases not so urgent the author thinks it better not to repeat the injection until after a lapse of forty-eight hours. In this way only can the effect of the smaller dose be estimated, as the full effect of a single injection is not always apparent until after forty-eight hours or longer. Some of his results have been very good after a single injection of 30 c.c.; in other cases improvement has only been observed after repeated doses. The largest amount yet given in a single case with us has been 210 c.c. intraspinally. He has not as yet seen any undesirable symptoms follow the use of the serum. In several cases the serum was also injected hypodermically, but in none did any marked effect appear to follow.

Berliner klinische Wochenschrift, February 10, 1908.

Late Infection in Hereditary Syphilis.—Lesser says that the conditions under which the transmission of syphilis from parents to fetus takes place are still somewhat uncertain, and he describes a case in which the infection occurred at an unusually late period in the pregnancy. The parents had been married six or seven years and had four living healthy children. During the fifth pregnancy the husband infected himself with syphilis on February 22. One month later, between March 21 and 25, he had connection with his wife, and on March 26 he for the first time noticed evidences of the chancre. On April 29 the eruption appeared. On May 7 the primary lesion was discovered in the mother and twelve days later the child was born at full term. The child was of normal size and seemed healthy in every way. On June 21 the mother exhibited a plantar and palmar eruption and doubtful traces of a rash could be detected on the body. On July 6 the child was found to have a maculosquamous syphilide and two days later spirochetes were discovered in the secretion of the anal papules. The delivery, therefore, followed between fifty-five and fifty-nine days after the infection and the general lesions of the child appeared on the forty-eighth day. The author thinks that the possibility of an intrapartum or postpartum infection can be excluded and that the case is remarkable for the lateness of the infection and the accuracy with which all the dates could be determined.

The Tuberculin Reactions.—Wolff criticises severely the Pirquet cutaneous tuberculin reaction and the ophthalmo-reaction on the score of their unreliability and the undesirable effects likely to follow the latter. In testing nineteen cases of undoubted tuberculosis by means of the Pirquet reaction negative results were obtained in 36.8 per cent., and in applying the conjunctival test in twenty similar cases negative results were noted in 30 per cent., although all these patients were in the earlier or middle stages of the disease, so that a correct reaction might be expected. In dealing with tuberculous animals the tests were also found unsatisfactory. In comparing these procedures with the old injection method the following results were obtained: In twenty-seven patients suspected of being tubercuIous, of whom seventeen were adults and ten children, the Pirquet reaction was positive in only 59.2 per cent., while the subcutaneous injection was positive in 92.5 per cent. In forty-five similar patients, of whom thirty-six were adults and nine children, the conjunctival reaction was positive in 28.9 per cent., and the subcutaneous injection in 80 per cent. In speaking of the conjunctival reaction he says that although 1 or 2 per cent. old tuberculin solution was employed in a number of cases severe conjunctivitis was caused, sometimes lasting twelve or fourteen days, and so intense as to make it undesirable for the practitioner to run the risk of producing it in his private patients. Taking everything into consideration, he believes that these new methods possess no advantages over the old one of subcutaneous inoculation, while the conjunctival reaction has the additional drawback of sometimes making it impossible to resort to a subsequent tuberculin treatment owing to the recrudescence of the ocular inflammation that follows each injection of tuberculin.

Münchener medizinische Wochenschrift, February 11, 1908.

Immunization by Mouth.—Wolf says that of the diseases which it is possible to influence by methods of immunization, those which, like diphtheria and tetanus, involve chiefly the surface of the body deserve first place, while those having their sites in the gastrointestinal canal, like dysentery, cholera, and typhoid fever are but little susceptible to modification in this way. He describes efforts made to investigate the possibility of immunization by the oral route in such cases and gives the details of experiments in this direction made on mice infected with the bacilli of mouse typhoid. The animals were subjected to a preliminary treatment with paratyphoid bacilli, which were not pathogenic, the method being to administer daily bread soaked in about 5 c.c. of paratyphoid bouillon culture. They were then infected with a culture of virulent mouse typhoid bacilli given in the same way. The immunized animals usually, though not always, showed much greater powers of resistance to the infection than the control animals, the protective process apparently being that, after the infection had taken place, the mice were enabled to produce larger quantities of antibodies than was otherwise the case. The author compares these observations to what occurs in inoculations against typhoid in man, though he does not draw any conclusions concerning the practical solution of this problem.

Experimental Observations on the Action of Bier's Congestion.—Graff describes experiments undertaken with the object of throwing some light on the mode of operation of Bier's method of treating infections by congestion. He says that this action may be purely bactericidal, antitoxic in the sense of neutralizing the substances thrown off by the bacteria, or bactericidal through the intervention of phagocytosis. By testing the effect of congestion serum and edema fluid on the development of colonies of bacteria he arrived at the conclusion that the bactericidal property of these fluids is not the result of simple humoral action. Experiments with tetanus and diphtheria toxin and with strychnine showed that there was no neutralization of the poison, but only a retarding of its action through delay in absorption. Finally, observations with leucocytes and bacteria demonstrated that contact with the congestion fluids stimulated phagocytosis. Whether the good result depends on the presence in the edema fluid of stimulins, opsonins, or bacteriotropins, he is not prepared to say.

Book Reviews.

The Semi-Insane and the Semi-Responsible *(Demifous et Demiresponsables)*. By Joseph Grasset, Professor of Clinical Medicine at the University of Montpellier; National Member of the French Academy of Medicine, and Laureate of the Institute. Authorized American Edition, Translated by Smith Ely Jelliffe, M.D., Ph.D., Clinical Professor of Mental Diseases, Fordham University N. Y.; Visiting Neurologist, City Hospital, New York. New York and London: Funk & Wagnalls Company, 1907.

Most practical alienists are willing to concede that there are occasional individuals, met with in medicolegal work, who are difficult to classify either as insane, and therefore totally irresponsible, or sane and therefore entirely responsible. Few, however, will concede that these individuals constitute a group of sufficient magnitude to warrant a third classification into semi-insane and therefore semi-responsible criminals. The dangers of such a classification are too numerous and great, and opportunities for court-trial quibbling over criminal responsibility, already unendurable, would, if we accepted it, be still further enhanced. The semi-insane should be grouped among the insane and other terms employed to embrace Grasset's cases. The employment of such a term as "semi-insane," from a legal point of view, seems unsafe; and from a medical viewpoint, uncertain, unsound, and unscientific. With this protest against the title of the book, we may say that the work is excellently translated, and presented in a delightful way. The author maintains that the semi-insane and semi-responsible have both a scientific and a legal right to existence. He first depicts them as they appear in literature and on the stage; then describes them clinically as he sees them in daily life. He differentiates those who have shown talent or even genius and whose lives have been of real social value, and who yet have been what he calls semi-insane, from those who have been pernicious to society and a source of danger. The medical idea of social responsibility is next taken up; and finally are considered the question of diminished responsibility and the general principles of social prophylaxis for the "semi-insane."

Practical Anesthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P., Assistant Anesthetist to St. Bartholomew's Hospital, Demonstrator of Anesthetics to the Medical School of St. Bartholomew's Hospital, Late Senior Honorary Anesthetist to the Paddington Green Children's Hospital, Senior and Junior Resident Administrator of Anesthetics at St. Bartholomew's Hospital. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1907.

In this small volume the author has endeavored to treat of the administration of anesthetics in a practical manner, and discusses, in order, Nitrous Oxide, Ether, Chloroform, Ethyl Chloride, and Mixtures and Sequences. In speaking of the advantages of the gas and ether sequence, the author says: "1. It is the safest method of inducing anesthesia for major operations that we at present possess. 2. Unconsciousness is rapidly produced, and if the anesthetic is properly given there should be few, if any, unpleasant sensations during its administration." Dr. Boyle, however, takes the position that ether is not the most suitable for maintaining anesthesia and should not be given for longer than a half to three-quarters of an hour; after that period the anesthetic should be changed to chloroform.

Medical Ethics: A Guide to Professional Conduct. By Robert Saundby, M.D., Edin., etc. Second edition, enlarged and rewritten. Philadelphia: J. B. Lippincott Company, 1907.

Books on Medical Ethics are few, and as a rule do not make interesting reading. Unfortunately, those who most need instruction on this subject are beyond the reach of books, medical societies, or anything else. The present volume is intended for the instruction of students and young practitioners; and, though written for the profession in England, it will prove useful to readers on this side of the Atlantic who need its instructions.

Surgical Emergencies. By Percy Sargent, M.A., M.B., B.C. (Cantab.), F.R.C.S., Surgeon to Out-Patients, St. Thomas's Hospital; Assistant Surgeon to the National Hospital for the Paralyzed and Epileptic, Queen Square, and Surgeon to the Victoria Hospital for Children, Chelsea. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1907.

This is a useful book for the student and for the physician who has not had the advantage of a surgical training. As the author says in his preface, the book lays no claim to completeness; it is rather of the nature of an essay based upon an experience gained during some eight years' intimate association with the surgical side of St. Thomas's Hospital. The author has covered practically all of the surgical emergencies that are met with in practice. Under the head of "Acute Infective Diseases" the different diseases caused by the pus forming bacteria, tetanus, and anthrax, are discussed. In the chapters on "Acute Abdominal Diseases," and "Injuries to the Abdomen," much stress is laid upon the importance of the diagnosis of peritonitis and the indications for operation.

A Reference Hand-Book of Obstetric Nursing. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity; Member of the American Pediatric Society, etc. Illustrated. Philadelphia and London: W. B. Saunders Company, 1907.

This book is intended by the author for the instruction of nurses who have had no practical training in the subject, and are yet desirous of undertaking obstetrical work. Fortunately, the book will be of little service to these nurses, for obstetrics is a subject which can be learned only by practical work. Certainly no nurse will become capable of undertaking a case of labor if her knowledge is derived solely from a perusal of this volume. Those who have had a proper training will not need the book.

A Manual of the Practice of Medicine. Prepared especially for Students. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania; Lecturer on Physical Diagnosis in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes's Hospital, Assistant Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Eighth edition, revised. Illustrated. Philadelphia and London: W. B. Saunders Company, 1907.

This book is merely an outline of the practice of medicine, and is intended as a manual for students. The statements made are concise, so much so that many times the true meaning is shrouded in obscurity. Prescriptions are freely scattered throughout the book. As a rule each disease is treated under the several heads: definition, etiology, pathology, symptoms, diagnosis, prognosis, and treatment. Such a condensed treatise, however, in the hands of the general practitioner is of little value.

A Text-Book of Pathology, with an Introductory Section in Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Eighth edition, with thirteen full page plates and six hundred and fifty illustrations in the text in black and colors. New York: William Wood and Company, 1907.

In commenting on the appearance of the eighth edition of a book so widely known as the present it would border on presumption for the reviewer to attempt to point out its excellencies. That these have been universally recognized is demonstrated far more clearly by the demand that has made such frequent reissues necessary than would be possible by any enumeration of the many particulars in which it surpasses all other similar works and which render it *facile princeps* among the treatises on pathology in the English language. The revision of the present issue has been painstaking thorough and there is hardly a section that has not been judiciously pruned or amplified. Naturally all of the recent advances, such as those concerning the opsonins, the spirochetes in syphilis and other conditions, the demonstrations of the Negri bodies, the etiology of smallpox, the transplantation of tumors, etc., receive authoritative discussion, while entire new chapters, such as the very beautifully illustrated one on malformations and the one on the conditions of disease in general, contribute to the one hundred and seventy-five pages by which the letter press has been increased. The illustrations have always been a noteworthy feature of the book, but over a hundred new ones appear in this edition, many of them showing extremely rare conditions rendered available only through the unusual facilities for obtaining material at the disposal of the author, the latter term being used advisedly, since Professor Delafield no longer shares in the work, and Professor Prudden has assumed full responsibility for this revision as for its two predecessors. Especial mention should also be made of the completeness with which important contributions to the literature of the different subjects have been noted, making the volume a veritable mine of bibliographical information of the greatest value. The work is indeed a masterpiece of which American pathology may well be proud.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 6, 1908.

The President, Dr. John A. Wyeth, in the Chair.

This meeting was held under the auspices of the Section on Obstetrics and Gynecology. The subject for the evening was "A Review of Recent Advances in Obstetrics and Gynecology."

The Present Significance of Chorioepithelioma.—Dr. James Ewing presented this communication. The conclusion he reached was that chorioepithelioma included three rather distinct types of tumors, distinguished by their gross appearances, histological structure, prognosis, and indications for treatment. Marchand in 1895 pointed out that these tumors were of two types, the typical and the atypical, and this division had been generally recognized. The typical chorioma of Marchand showed extreme variation in structure and clinical course, and while some proved very malignant Schlagenhaufer in 1899 had pointed out that recovery might follow after spontaneous extrusion of the tumor from the uterus, removal by curettage, or partial removal by knife, a part of the tumor having been left in the pelvis. At least six cases were on record in which recovery followed where pulmonary metastases were believed to have occurred, although the existence of genuine metastases, while probable, had never been proven. On the other hand, some of the tumors were excessively malignant and with them the results of operation were so bad that a recent writer, Schmauch, stated that it was a crime to remove the uterus in such cases. It seemed to be time that a further attempt be made to subdivide these tumors on their structure, and to determine if a given structure did not carry with it a definite prognosis. The speaker's cases seemed to show that such a relation actually existed with the different forms of chorioma, and the following classification and nomenclature was suggested:

Syncytioma; Atypical Chorioma of Marchand.—This tumor produced more or less diffuse infiltration of the myometrium, or a large intrauterine tumor, leading to marked enlargement of the uterus, but not tending to penetrate the organ and not giving metastases. The tumor was composed of large syncytial wandering cells in the walls of the sinuses and in the musculature. Hemorrhage, cachexia, suppuration, and perforation by the curette might prove fatal. Curettage cured in the early stages.

Chorioadenoma Destruens; Malignant Placental Polyp.—This tumor tended to infiltrate the uterine sinuses, enlarging that organ, but not splitting it by a compact growth. Metastases occurred in the lungs and vagina, but recovery might follow. The growth showed villi, Langhans' cells, and syncytium. Hence, as the placenta was a gland, the term adenoma was applied to this tumor. The natural course was death by hemorrhage and cachexia. The uterus should be removed, unless the growth was attacked early and the loss of the organ was a serious consideration to the patient. Spontaneous extrusion, curettage, and partial removal had cured.

Choriocarcinoma.—This tumor produced a relatively small circumscribed growth in the musculature, tended rapidly to perforate the uterus without greatly enlarging it, and to cause local and pulmonary metastases. Villi were absent, Langhans' cells and syncytium were present in masses, but often were imperfectly differentiated. Morphological signs of anaplasia and malignancy were always present. Tumors of this structure were probably always fatal. The different types of these tumors were illustrated by lantern slides.

Recent Advances in Obstetrics.—Dr. Edwin B. Cragin read this paper. He said the advance in obstetrics had been most marked along three lines, a better knowledge of obstetric pathology, a better knowledge of the mechanical problems of delivery, and better procedure.

Obstetric Pathology.—Distinct advance had been made in the toxemia of pregnancy, as evidenced by pernicious vomiting on the one hand and eclampsia on the other. The pernicious vomiting of pregnancy was a toxemia with distinct pathological lesions and with characteristic urinary findings. The chief pathological lesion was a fatty and hydropic degeneration of the liver which was apt to be diffuse, but in some cases was zonal and went on to necrosis. If the condition had existed for some time the lesions found were practically identical with those of acute yellow atrophy. The kidneys showed more or less degeneration of the epithelium of the convoluted tubules. In the urine were found acetone, diacetic acid, β-oxybutyric acid, indican, perhaps a trace of albumin, and a few casts and bile pigment. There was also an abnormal nitrogen ratio. Cases of pernicious vomiting had shown, as a rule, a high ammonia nitrogen, high amido acids, and undetermined nitrogen, and a low urea nitrogen. Clinically he recognized two types of cases, the hepatic and the nephritic. In the former, aside from the convulsions, there were vomiting, with little edema, little albumin, and few casts; there often were jaundice, tenderness over the liver, and tympanites. In the nephritic type there were headaches, disturbances of vision, high tension pulse, nervous irritability, edema, marked albuminuria, and casts. These two types were often combined. In the livers studied by Dr. Cragin there were three varieties of lesions: (1) In the nephritic type the cells near the periphery of the liver showed a moderate fatty and hydropic degeneration without necrosis, while the cells in the center of the lobule seemed normal. (2) In the case of the hepatic type the fatty and hydropic degeneration at the periphery of the lobules was very marked, the cells had lost their nuclei, and, in fact, they were necrosed cells and the most important lesion. There was a necrosis at the center of the lobule, a zone of fatty and hydropic degeneration near the periphery, and a few normal cells at the periphery along the portal vessels. (3) In this there was an area of degeneration of the liver cells with hemorrhage, the so-called hemorrhagic hepatitis. The lesion was situated at the periphery of the lobule. In many cases of the hepatic type thromboses were seen in the vessels at the periphery of the lobules. In eclampsia the myocardium often showed degeneration, and the brain edema and hemorrhages, but these were less characteristic than the lesions in the liver and kidneys. In the nephritic type of eclampsia two classes were recognized: 1. Those who had previously suffered with nephritis and in whom the eclampsia had developed an acute exacerbation of the old trouble. 2. Those whose kidneys had been previously free from disease. There was a marked resemblance between the hepatic type of eclampsia and the pernicious vomiting of early pregnancy, *i.e.* ammonia nitrogen, amido acids, and undetermined nitrogen were above normal, and urea nitrogen was below normal. As the knowledge of the vomiting of pregnancy had increased, the fact had become more and more impressed that while in the early months one might recognize vomiting as either toxemic or reflex, the pernicious vomiting of the early months and all vomiting of the later months was certainly toxemic. Advances had also been made in their knowledge of the pathology of chorioepithelioma and of puerperal infection.

Better Knowledge of the Mechanical Problem of Delivery.—One of the greatest advances in practical obstetrics had been the study of the relative size of

the fetal head and the pelvic canal during the latter weeks of pregnancy. Another advance was in the early recognition of posterior positions of the vertex and the relatively early anterior rotation of the occiput by the obstetrician when nature failed to accomplish this. The proper correction of this malposition implied careful watching of the fetal heart during labor, the cephalic application of the forceps as distinguished from the pelvic, and the use of the forceps as a rotator.

Better Procedure.—This was based upon the two preceding divisions of his paper. In the pernicious vomiting cases one did not feel that he had done his duty by his patient unless the urine had been examined and the nitrogen partition determined and the presence or absence of acetone, diacetic acid, etc., ascertained. No one of the laboratory findings or groups of findings could be relied upon exclusively for prognosis or indications for treatment. It was only when they were studied in connection with the clinical picture that their decision could be made. In pernicious vomiting of pregnancy the best results were obtained by colon irrigations, rectal feeding for a short time only, and early emptying the uterus. Recent knowledge of chorioepithelioma demonstrated well the fact that prolonged menorrhagia and metrorrhagia following labor, abortion, or operation for hydatidiform mole should be looked on with suspicion, and that early diagnosis and early hysterectomy alone gave hope of satisfactory results. In the treatment of puerperal infection the knowledge of the ease of the spread of infection had brought about one improvement in procedure, viz., the rule to keep out of the uterus unless it contained material which should be removed; if the removal of any material was indicated, it should be done with the least possible injury to the uterine wall so as to avoid opening new avenues of infection. The induction of labor two weeks before term would often secure a relatively easy and safe birth for a child which otherwise would be lost. The improved methods of inducing labor at the proper time for the child to pass the given pelvis and the low mortality of cesarean section had largely reduced the number of cases in which craniotomy was considered justifiable. The operation of pubiotomy was still *sub judice,* and would probably never have a large field in private practice; but in hospital practice it gave promise of saving children which would otherwise be lost. With regard to the treatment of lacerated cervices Dr. Cragin believed that in proper surroundings with good light and proper assistance a well trained man might repair a laceration of the cervix immediately after labor; but he wished to sound a note of warning that without the above conditions the morbidity, if not the mortality, of the patient was markedly increased, and for the general practitioner the safer rule was the old one, immediate trachelorrhaphy for hemorrhage only.

Progress in Gynecology.—Dr. Herman J. Boldt said that not so many years ago it was not an uncommon occurrence for an operator to exhibit uterine appendages that were practically normal as trophies of his skill. This showed that the indications for operation were then based upon poor judgment. Following this period of indiscriminate extirpation of the pelvic organs came a period of ultraconservatism, which had the advantage that the radical operation might be subsequently done. Greater conservatism was exemplified in operating for tubal pregnancies, and some now removed the tube only, retaining the ovary. Under favorable circumstances some operators contented themselves with splitting the affected tube and removing the conception product. Most operators were agreed on this kind of conservatism of the pelvic organs, but not so in conservative operations for multiple myomata. With pedunculated tumors and single interstitial tumors of moderate size, they could do a myomectomy with safety. Myomatous tumors were not so innocent as formerly believed. They were now operating more radically upon uterine carcinoma, exsecting the parametria and the glands, and even part of the ureter in some cases. Marked progress had been made in chorioepithelioma and in the purulent peritonitis. After removing the primary cause of the peritonitis no further attempt should be made to rid the abdominal cavity of the purulent secretion by sponging and flushing, because the time consumed was too long and traumatism was too great. One should be contented to drain the cul-de-sac. Rapid work was essential. The patient should be placed in bed in a semi-sitting posture and continuous instillations of saline solution used. To cure a patient of a rectocele it was necessary to separate the bladder from its cervical attachment and displace it upward and then attach the vagina to that part of the cervix to which the bladder had been previously attached.

The Practical Application of Our Recent Knowledge in Obstetrics.—Dr. Edward Reynolds of Boston read this paper. He said the methods of practice which he wished to present were based upon the beliefs that the mortality of cesarean section varied so greatly in accordance with the period of labor at which it was performed that (1) the mortality of the section late in labor was too great to permit of its performance in the interests of the child alone; (2) the maternal mortality of the section performed even so early as the end of the first stage of labor was greater than that of the ordinary high forceps or version; (3) the mortality of the section done at the time of election in advance of labor, or at its very beginning, the primary section, was so low that it was a safer operation for both patients than difficult forceps or version when performed for mechanical obstacles. His own experience with section now comprised thirty cases, all without mortality. He divided the cases into those done before labor (primary), early in labor (secondary), and late in labor (late sections). His completed tables contained 289 cases operated upon by twenty different operators; of these 82 were primary, 158 secondary, and 49 late. The mortality was 12 per cent. in the late cases, 4 per cent. in the secondary cases, and slightly over 1 per cent. in the primary cases. His proposition was: First, that a section undertaken under every surgical advantage in advance of labor was less dangerous than after a few hours' endurance of the exhausting physiology of labor, and under the technical conditions incident to such work. Second, that the section performed after a full test of labor had demonstrated the approaching failure of the natural forces was an operation favorable to the child, but more dangerous to the mother than the intrapelvic methods of extracting by high forceps or version. There could be no plainer or more obvious deduction than that when the cesarean section was necessary, it was desirable that it should be determined in advance and performed as a primary operation. The results of the primary section when performed on healthy women for merely mechanical obstacles were the highest possible degree of safety for the child, a maternal mortality risk which was probably not greater than that of difficult high forceps or version, and an entire absence of the extensive vaginal trauma, and consequent morbidity, a percentage of which they knew to be inseparable from the difficult intrapelvic operations. The secondary cesarean section had a considerable maternal mortality, and, therefore, he ruled out the performance of the secondary section as an operation of choice. The mistakes in the past had been due chiefly

to an over-dependence on measurements of the pelvis alone and to over-confident attempts to determine this important question at a single sitting. To obtain really accurate results they should estimate with equal care the pelvis, the passenger, and the probable maternal power as a propelling engine; to obtain any just estimate of one of these in difficult cases it was usually necessary to see the patient repeatedly during pregnancy, and when it was possible before pregnancy. The whole matter of the estimation of the shape of the pelvis was as yet in its infancy. The fault in the past management of cesarean section had been that they had too often adopted or refused it without sufficiently painstaking observation, and also without a full recognition of the superior safety of the primary operation. The general practitioner should be taught that in difficult labors no obstetrician, however skillful, could obtain a low percentage of mortality, fetal or maternal, if he was only called in after arrest had occurred. All primiparæ should be examined for determination of the mechanical conditions during pregnancy. (1) All primiparæ of small stature; in this type of woman they found the symmetrically small pelvis, the pelvis nana. (2) All primiparæ who had done heavy muscular work during the period of development, and more especially all of those who presented a squat, short-legged appearance; in these women were found the flat pelves. (3) All primiparæ with the narrow hips, long, straight-legged, flat-backed, boyish type of figure; in this type of women they found the true justo-minor or neutral type of pelvis. (4) All primiparæ with bandy legs, protuberant buttocks, prominent abdomen, an unusually hollow lumbar region; such women were often rather wide-hipped, markedly feminine in figure, and at first might suggest favorable labor; but in these there were mostly found pelves with excessive inclination of the brim and exaggerated curvature of the pelvic axis. (5) All primiparæ of delicate general health; many of these women had easy labors but in them even moderate mechanical difficulties assumed importance. (6) Multiparæ who had had easy labors demanded no special care, but all multiparæ who had had even one difficult or disastrous labor should have a determination of the mechanical conditions during pregnancy. It was a fact that twenty-five years ago the care of normal labor by practitioners who were otherwise well equipped was frequently so poor as to furnish a basis for the position that all labor should be attended by specialists, but this was not the case to-day. With the advent of asepsis and general advancement in professional equipment and sense of responsibility for results, the average of obstetric practice had risen greatly, and there were to-day great numbers of practitioners who were quite sufficiently equipped for the intelligent care of an ordinary labor, and for the performance of ordinary obstetric operations. They ought to recognize this change. As in other specialties, the conditions of practice had taught the necessity of not absorbing the management of cases which were referred to them merely for an opinion. If the obstetrics of the future was, as he believed, to assume a more desirable position as a specialty than it had ever before, it would be in part because of the change that was coming over their methods of practice, and in part because its practitioners would find themselves not only forced but glad to assume the position characteristic of all other specialties, *i.e.* those younger obstetricians who desired to take charge of normal labor, and he thought that established specialists would in the future decline normal labors.

Dr. William M. Polk laid stress upon the necessity of a very close watch upon every woman whose uterus had not undergone proper involution, and every man who practised obstetrics should look into this. He regretted that more had not been said in regard to the slow forceps delivery; there had never been anything so potent for good as the obstetric forceps, but they all realized that in them danger lurked, for they were capable of doing damage which was not limited to the external parts—apart from the dangers of sepsis and lacerations—but they were responsible for a great number of cases of procidentia. The fact that a forceps delivery could be extended over an hour or even longer until such a time as the uterus could be coaxed into action, made this worthy of their earnest consideration. He agreed with what had been stated in regard to the early and late repair of lacerated cervices. The disorders of menstruation in young women were very frequently the groundwork of many of those after-conditions, such as diseased ovaries, which ultimately led to those wretched cases of neuroses which revolved around ovarian pain. Many women began the function of menstruation under conditions far from hygienic, and carried on this function under conditions of ignorance as to its true significance; true pathological conditions laid in girlhood formed the groundwork of subsequent ailments. He wished to emphasize the vast advantage of early and prompt incision and drainage in the lower portion of the pelvis, or cul-de-sac, in those cases of pelvic peritonitis associated with septic infection of the uterus.

Dr. Clifton Edgar said he was grateful to Dr. Cragin for bringing out the value of the nitrogen ratios as diagnostic factors. The same value was not now given by some to this method of examination of the urine as was given two or three years ago. It had been belittled by some. A line to-day could be more sharply drawn than ever before between the pure nephritic and hepatic types of eclampsia. While he took into account the clinical picture in conjunction with the urinary findings, still there was a small class of cases in which the urinary findings often flew the red flag, giving out the danger before the clinical condition and picture was particularly well marked. He had a number of such cases that he expected to report next autumn. Sometimes one saw a combination of these two types. With regard to the immediate repair of the cervix after labor, this should only be done in those cases in which there was hemorrhage. The keynote of both the obstetric papers was prophylactic obstetrics. It was Utopian to believe that they had arrived at a condition of affairs where dystocia would be prevented weeks before labor set in. While they had obtained an admirable condition of affairs in institution work, this was not so in private practice. The mortality from puerperal sepsis was one-tenth of one per cent. or less in institution work, while in private practice the mortality was large. The reason for this diminution in the mortality and morbidity rate in institutions was due to the introduction of asepsis and antisepsis in midwifery. The inference was plain. In institution work the morbidity and loss of sight was practically nil; in private practice in New York State in 1906, 26 per cent of the cases of blindness were found to be due to ophthalmia neonatorum. Examinations in pregnancy, especially in the primagravida, were of value in determining contracted pelves and large children; this was carried on in institutions but not in private work. In speaking of the advances in midwifery he referred to a box on the table before the Academy, the property of the late Dr. Bedford, who died in his sixty-fourth year, in 1870 or thereabouts. The top tray contained eleven instruments; of these eleven, ten were designed to mutilate the child, or break it up, and only one was for the delivery of a living child.

Dr. Charles Jewett said that in the toxemias of pregnancy the general condition of the patient must still remain the principal guide in the treatment. The nitrogen partition, however, was of great value and especi-

ally in cases in which the indication for interference was not entirely clear from the clinical standpoint. Eclampsia sometimes occurred explosively with scant clinical premonition. The end might come unexpectedly in pernicious vomiting. Could an elaborate analysis of the urine be made at short intervals in all cases of pregnancy vomiting and in all pregnancies in the later weeks or months, many lives might be saved. Objections had been made against the nitrogen coefficient because an increase in the proportion of ammonia nitrogen might be due to starvation rather than to pregnancy toxemia. Pubic section had a limited field, and had grown more so with the improvements in the status of cesarean section. During labor they had a place in obstetric surgery for certain cases in which the condition of the patient was such as to forbid cesarean section. The cesarean operation was suited to any degree of contraction, and it alone effected delivery and without traumatism to the cervix. The most serious feature of pubic section, however, was the prolonged and difficult after-care of the patient. It was claimed that the mortality of pubiotomy was slightly less than that of symphyseotomy. Yet in many instances after hebotomy the women had been more or less crippled owing to thrombosis and septic complications that developed in the crural veins. The principal objections to the immediate suturing of a lacerated cervix was the danger of sepsis. The cervix was perhaps the seat of less resistance than other parts of the birth canal because of the trauma it suffered even in spontaneous delivery. The cervix should not be immediately sutured after delivery except when necessary for hemostasis.

Dr. George L. Brodhead said that while the two types of toxemias of pregnancy, the nephritic and hepatic, might be combined, as a rule, most cases could be classed as renal and hepatic. The time had not yet come when they could state that because the nitrogen partition did not show a proper amount of ammonia, urea, and undetermined nitrogen, or because acetone or diacetic acid was present, that the uterus should be emptied. The clinical picture must be taken into account as well as the urinary findings. Now and then one met with a pelvis that was perfectly normal in its external measurements, but which was nevertheless contracted. Many obstetricians rotated the occiput forward as a routine practice and had done so for years in occiput posterior cases. Great advances had been made in the more frequent use of craniotomy both in vertex and breech cases when the child was dead. The cervix should be sutured immediately after delivery only in cases of cervical hemorrhage. He believed that one might be tempted to do cesarean section too often; many patients could be delivered at the eighth month safely and the child would do well. When cesarean section had been done there was always the danger in subsequent labors of rupture of the uterus at the site of the scar. Many of these ruptures had been reported.

Dr. F. A. Dorman emphasized the importance of the clinical evidences of toxemia, those that were often overlooked by the general practitioner. Every man should watch the case closely and investigate the excretory and digestive functions, the circulatory system, the nervous manifestations, neuralgic or mental. In prophylaxis the use of the rubber gloves should be emphasized. There was still a large field for the induction of premature labor. He asked Dr. Cragin in what class of cases he thought the vaginal cesarean section was indicated and what were the results. He asked Dr. Reynolds wherein he considered the danger of cesarean section increased by the test of the first stage if the patient was in careful hands.

Dr. W. Gill Wylie said that in his practice of over twenty-five years he had made a close study of all these cases from the very beginning, and it was amazing how often cases of toxemia and septic troubles in obstetrics might be avoided. The prevention of disease would show the greatest advance in the future.

Dr. James Ewing, in speaking of the nitrogen partition, said that this method was presented as one which might give information of value but it was not intended to supersede other and older methods. It was not intended to tell when to empty the uterus; it only told when metabolism was not right. Disturbed metabolism then would be the object of treatment. The nitrogen partition, therefore, should not be taken to indicate the time any more than the method of emptying the uterus, but rather it should be used as a basis of treatment to prevent the necessity of emptying the uterus.

Dr. Edwin B. Cragin, in answer to Dr. Dorman's question, said that personally he believed the elective vaginal cesarean section had but a small field. There were certain cases in which one believed he could dilate the cervix sufficiently to deliver the child, but the cervix would be too hard and unyielding, and in such cases the vaginal cesarean section would prove of great value.

Dr. Herman J. Boldt said that the adenomatous type of chorioepithelioma might sometimes be as dangerous to life as the carcinomatous type. In his opinion it was in the best interests of the patient to do radical work on the basis that they were dealing with a malignant form of disease.

Dr. Edward Reynolds of Boston closed the discussion. He said that he did not think that at present it was generally realized how much the mortality of cesarean section was raised in proportion to the length of labor. This was a matter he had watched for fifteen years and in the literature of the world he had never seen an exception to the rule that when any considerable list of cases was analyzed its main mortality was found among the late cases. In answer to Dr. Dorman's question, he said he did not think they were able to give an answer which would be authoritative or satisfactory in a scientific sense; perhaps the best hint at an answer was to propound another question. If a hundred strong young fellows started on a twenty-five-mile Marathon run, and a certain proportion of them were pulled out at the end of each mile, and subjected to a simple abdominal operation, such as an appendectomy, would not any surgeon expect that the mortality among those operated on in the full flush of condition at the start would be less than among those who submitted to it as they came struggling in at the finish? Would it not be, in general, roughly proportional to the amount of exhaustion which had preceded the operation?

SECTION ON GENITOURINARY DISEASES.

Stated Meeting, Held November 20, 1907.

Dr. Martin W. Ware, Chairman, Pro Tem.

Nephrectomy for Right Pyelonephritis.—Dr. Tilden Brown reported the case of a married woman, 33 years old, who was admitted to the Presbyterian Hospital on August 13, 1907. She had never had children, and her family history was negative. During the past summer she had had repeated attacks of nausea of brief duration. Ten days before admission, without assignable cause, the patient noticed that micturition was painful and that the urine was tinged with blood. Twenty-four hours later she had a sudden attack of pain in the right lumbar region; this occurred during the night, the pain seeming to radiate in all directions and increase in severity. There was no nausea nor vomiting. A hot-water bag gave some relief, and on the fourth day the patient was up again, feeling fairly well. On the following day she had chills, followed by perspiration and fever, and on the three fol-

lowing days she had four or five attacks of pain in the right lumbar region, similar in character to the first one. Micturition was still accompanied by burning and smarting, but stoppage was only noted on the first day. No history of any stone having been passed or found in the urine. When the patient entered the hospital her chief complaints were pain in the right lumbar region, somewhat painful and frequent micturition, fever and weakness. She looked sick. In the right side, beneath the costal margin a roundish, painful, and moderately movable oval mass was easily felt. It was clearly the right kidney or kidney plus something encompassing it. A synchronous catheterization of both ureters was made. The cystoscope showed nothing abnormal to excite the least suspicion about either ureter opening. The urinous excretion from the right kidney was one-third more rapid than from the left. The naked-eye appearance of both urines was nearly the same and nearly normal. Microscopical examination, however, made of drops direct from the catheter, showed pus and bacteria in the right kidney. While there were no abnormal elements seen in the left kidney urine, cultures made at the same time of urine from each kidney showed the following day in the right side cultures, very numerous colonies of a pure growth of the colon bacillus, while one culture from the left kidney showed very few colonies of the same organism. Temperature on admission and on the following day before operation was between 102° and 103°. The day after operation the temperature was between 100° and 101°. On the fifth day it had become normal. The day of operation, August 14, blood examination gave 25,700 white cells. Upon oblique lumboabdominal retroperitoneal exposure, the prolapsed enlarged kidney was found within a normal fatty capsule. Even through the fibrous capsule the surface was seen closely studded with slightly raised bean-sized lesions of different darkish shades. The picture was intensified on stripping the fibrous capsule. The infectious foci were so numerous and often confluent that, taken in connection with the clinical history, the indications for nephrectomy were not doubted, and the operation proceeded with. The immediate postoperative state was gratifying; fall of temperature, absence of pain and competent action of the other kidney occurred. There was no infection of the wound cavity, and its cutaneous layer was closed in a week. Twice during her convalescence there were local and systemic signs, suggesting possible trouble in the left kidney. These disappeared, and she is now, three months after operation, in excellent health and strength. The pathologist reported that the kidney measured 11x7x5 cm. and presented the usual appearance of pyelonephritis, except that the purulent infiltration has not yet caused softening. Microscopical examination showed numerous scattered patches of purulent inflammation. This finding explained why the urine from this kidney before operation contained scarcely more than pus in microscopic quantity.

Dr. Albert A. Berg asked Dr. Brown whether he was able to determine the primary infection in this case; whether he considered it due to a blood infection or an ascending infection from the bladder? He stated that at the Mt. Sinai Hospital during the past summer they had seen a number of cases of septic infarction of the kidney after a local osteomyelitis of the finger or toe which had been successfully treated by nephrotomy and drainage, and he raised the query whether a nephrectomy was necessary unless there was distinct disorganization of the kidney.

Dr. Martin W. Ware asked Dr. Brown how he harmonized the fact of a large palpable tumor of the kidney and the subsequent statement that there were miliary abscesses alone found in the kidneys upon its removal.

Dr. Brown, in reply to Dr. Berg, said that in the case presented, there were multiple bean-sized foci, and the appearance of an acutely and extensively infected kidney was such that he considered a nephrectomy not only justifiable, but imperative. So far as the primary source of infection was concerned, there was a history, and still evidence of a recent boil on the right side of the abdomen, but there was no record of any bone or periosteal infection. He was inclined to believe that the case was one of blood infection, possibly from the abdominal sore.

Dr. L. Bolton Bangs said that no hard-and-fast rule could be laid down in regard to cases in which a nephrotomy or a nephrectomy should be done. He recalled cases of disorganization of the kidney in which the diseased organ had apparently recovered a fair degree of function after simple drainage, and he emphasized his belief that unless there was some hazard to the patient from the presence of acute sepsis, it was wiser to do a preliminary nephrotomy, a subsequent nephrectomy depending on the future course of the case.

Dr. Brown said that in dealing with a case of multiple miliary foci, involving the kidney, it was not easy to see upon what surgical grounds one should open the kidney at all. Merely to drain the surfaces of such an incised kidney would accomplish little or nothing unless, perhaps, in making the incision, capsular tension was relieved, and by reason of it, a more favorable circulation established in the kidney. A contraindication to incision and drainage was that the infection was then brought in contact with the areolar tissue about the kidney, whereas, by nephrectomy the organ could be moved without soiling the surrounding tissues.

Dr. Berg, in reply to the point raised by Dr. Brown in regard to the possible effect of incision and drainage in kidneys that were the seat of miliary abscesses, and the danger of infection connected therewith, said that such had not been their experience at Mt. Sinai Hospital in dealing with multiple foci of the liver. In about eight such cases that had come under their observation, in which there were clinical evidences of single or multiple foci of pus in the liver, multiple punctures of the liver, with or without free exposure, had been followed by improvement. Similar observations had been reported in England.

Post-operative Neurosis.—Dr. F. Tilden Brown also reported the case of a married woman, 49 years old, upon whom he had done a right nephrectomy two years ago. Towards the end of an excellent convalescence she claimed that she was subjected to a draught, which produced a distinct neuralgic pain in the head, and this idea had persisted and grown more pronounced since. These pains were not now limited to the region of the operation, and Dr. Brown said he had become convinced, both by his own observations and those of a neurologist who had repeatedly examined and recently treated the woman for nearly two months of late, that her pains were of a neurotic character and not the result of a nerve trauma. The operation in this case, the speaker said, was a nephrectomy for a chronic septic condition of the kidney, with occasional angulation of the ureter and intermittent pyonephrosis. There were also occasional attacks of hematuria and severe pain, and these latter were the symptoms that most impressed the patient. She made a thoroughly good recovery from the operation, and it was not until two weeks later that she began to complain of vague pains, which, as stated, she attributed to a draught.

Ureteral Calculus with Unusual Characteristics.—Dr. Follen Cabot reported the case of a man 32 years old who came to the Post-Graduate Hospital complaining of intense pain and inability to urinate, the symptoms having suddenly come on while he was engaged at his work as a house painter. There was agonizing pain extending all over the bladder area; there was no pain in the back, groin, testis, or scrotum. A catheter was introduced into the bladder, and about half an ounce of clear urine withdrawn. His temperature on admission was 100°; he vomited, and the skin became clammy and cold. Suspecting the pres-

ence of a stone in the ureter, Dr. Cabot introduced the cystoscope under ether. The bladder, as well as the left ureteral orifice, was normal in appearance, but just inside of the right ureteral orifice a small calculus was seen. Cystoscopic forceps was thereupon introduced, and the stone was grasped and removed. It unfortunately dropped into the bladder, and on account of the patient's condition no prolonged efforts were made to remove it. When he recovered from the effects of the anesthetic he was entirely free from pain, and he left the hospital on the second day. The stone was not recovered, although he was instructed to pass his urine through gauze and report in a week, which he failed to do.

Dr. L. Bolton Bangs said he had seen a few cases of ureteral calculi in the lower segment of the ureter, and in most of them the stone had passed spontaneously. In order to expedite this, Dr. Arthur Cabot, of Boston, in a recent paper on this subject, recommended the very common and simple procedure of massaging the ureter. The speaker said he was convinced that most of these calculi would pass with a little aid on the part of the surgeon.

Dr. Martin B. Ware said he had recently encountered two cases in which the symptoms indicated the presence of a renal or ureteral stone in the act of passing. In one instance the patient had submitted to an operation for quasi-appendicitis, which failed to give him any relief. An *x*-ray examination disclosed the real state of affairs and an operation was advised. He then consulted Dr. Ware, who cystoscoped him and found a calculus near the ureteral orifice, and within twenty-four hours this had escaped into the bladder. The speaker expressed the opinion that pain in itself did not justify exposure of the ureter, and that the operation should only be done in dealing with calculi of considerable size attended with systemic infection. In the case just reported the stone was as large as a cherry pit. In the second case, with a somewhat similar history, the stone was about the size of a barley corn and also escaped spontaneously into the bladder.

Dr. Follen Cabot said that while it was well known that these stones frequently escaped spontaneously into the bladder, still in cases in which the patient was suffering great pain he saw no reason why an attempt should not be made to relieve it. He saw no harm in the careful use of the cystoscopic forceps. There were cases in which the stone never got beyond the ureteral outlet, and to allow it to remain there was apt to produce permanent damage in the kidney.

Operation for Bilateral Undescended Testis.—Dr. Martin W. Ware reported the case of a boy, 14 years old, who had been operated on by him for double undescended testis. The case at the time had seemed a very promising one for operation; the testes were outside of the ring and of good size, and they gave rise to a good deal of pain in their abnormal position. The left side of the scrotum was very undeveloped. The Bevan operation was done, comprising a very free division of all the structures that made up the cord with the exception of the vas deferens. The immediate after-effects of the operation were excellent, but in the four months that had elapsed since, a recurrence on both sides had taken place. The operation, therefore, was not a success.

Dr. Oliver C. Smith of Hartford, Connecticut, exhibited a large "mulberry," prong-shaped calculus composed of calcium oxalate, weighing 4.55 grams, which had been extracted from the bladder of a man fifty-six years of age during an operation for carcinoma of the prostate by the perineal route. The operation was performed in February, 1906, by Dr. George N. Bell, and the patient was still living.

Dr. Smith also exhibited a clear *x*-ray picture of a renal calculus. The calculus, which had been removed at subsequent operation (June, 1905), was also exhibited. The features of the exhibit were, first, that it had a historical interest, as it was the first operation for nephrolithiasis following *x*-ray diagnosis, in Hartford County, and, so far as the author knew, in the State. Second, the size of the shadow in the picture and the stone were the same, demonstrating the importance of a quick exposure while the patient's breath was held. The skiagram was made by Dr. A. C. Heublein of Hartford.

Dr. Smith recited a case of a portion of a glass catheter in a female bladder. The patient was at the Litchfield County Hospital. She had been catheterized carefully by an excellent nurse, but when the catheter was withdrawn it was found that 2 cm. of the distal end had been left in the bladder. It could not be reached or felt by sound or forceps. Upon cystoscopic examination it was found and a mucous fold at the base of the bladder and removed without incident. The speaker emphasized the importance of examining a glass catheter, especially after boiling, before it is introduced into the bladder, to prevent similar accidents.

The Preparatory and After-Treatment of Genitourinary Operations.—Dr. L. Bolton Bangs said that his experience as a hospital surgeon, together with his observation in private practice, had forced him to the conviction that not enough time was usually given to preparation of the patient for operation. This did not apply to the many emergency cases which we were compelled to accept, and which, of course, were of necessity treated without preparation. Many cases came to the surgeon in a state of physical debility, either from intemperance, overwork, or starvation, or all combined, whose prospects of speedy recovery could be vastly improved by sufficient and careful preparation for the contemplated operation. Among surgeons in the large city hospitals it was a common experience to observe the almost magical effect of a few weeks or days in the hospital upon these patients of degraded tissue, and even after a short postoperative period we saw them go out with a richer quality of blood and with a cheerfulness of spirit which were in marked contrast to the bodily and mental conditions with which they entered. In genitourinary, as in all departments of surgery, there were many simple operations which might be performed without any special consideration of the patient's condition; but it should be remembered that the patient's excretion of urine was a paramount function, and that the vital function of reproduction affected certain activities of the brain, spinal cord, and heart. Hence, the relations between the different organs essential to these functions and between them and the general organism were so intimate and so important that every means should be taken to prevent any interference with these relations. Any local inflammation, no matter how mild, should first be subdued. These same principles should be applied when the ligation of a varicocele or excision of a hydrocele or castration was to be undertaken. Too often we performed these without any preparatory treatment, and with very little consideration of the patient's other conditions. Operations upon the urethra should always be preceded by careful preparatory treatment, particularly in the cases of stricture. In these cases, too, the postoperative treatment was most important. Dr. Bangs said that in his opinion the so-called "urethral splint," meaning a catheter through the whole length of the anterior urethra and fastened in place, was uncalled for after stricture operations. It was an irritant which not only provoked erections, but must of necessity interfere with the healing process. Too frequent instrumentation after an operation on the urethra was another form of irritant. In operations on the bladder and prostate, preparatory, as well as after-treatment, was most important. Nitrate of silver was one of the most useful of bladder disinfectants, but it must be in mild solution and used judiciously. Strong irrigating solutions, and especially nitrate of silver, were contraindicated in cases of suspected stone in the bladder. In such cases, abso-

lute repose in bed and the gentle use of weak antiseptics, like boric acid, would soon modify the symptoms so that a positive diagnosis might be made. Operations upon the kidneys were always of such vital importance to the patient that good judgment must be used in the application of these general principles. Exclusive of emergency cases, in which delay might be dangerous, especially in cases of anuria, preparatory treatment was very important.

Dr. George K. Swinburne said he was strongly in favor of letting the urethra alone after internal urethrotomy, but his experience applied only to that; he had never applied it after external urethrotomy. He fully agreed with Dr. Bangs as to the value of preliminary treatment in genitourinary operations, even in ambulatory cases, and decidedly so in operations on the prostate, and he could recall instances where the preparatory treatment of such patients undoubtedly proved a life-saving measure. He also spoke of the utility of sterilizing the urinary tract and preventing urethral chill.

Dr. A. A. Berg asked Dr. Bangs whether he had found that the administration of the formaldehyde compounds had any effect on the healings of the wounds. Personally, he had had no experience with wound necrosis after the use of these drugs.

Dr. Edward L. Keyes, Jr., said he habitually gave this drug after operations on the genitourinary tract, and he could only recall one instance where it was apparently responsible for a tanning of the wound surface. The case in question was one of suprapubic prostatectomy. He had never seen or heard of any postoperative complications arising from its administration before operation.

Dr. Martin W. Ware said he had had this possibility of a cauterizing action of the drug brought to his attention by some of his associates, but he failed to see how it could be held responsible in those cases where the bladder itself was infected. The speaker said he invariably gave it in connection with operations on the genitourinary tract, and in those cases where urethral instrumentation was necessary for the purpose of dilating a stricture or the use of a searcher, he always followed the procedure with a dose of quinine, with the hope of averting a urethral chill. He recalled, within the past two months, two cases of urethral chill and fever following an external urethrotomy and the passage of an instrument into the urethra, though both had been subjected to careful preparatory treatment. Both made a good recovery.

Dr. Victor C. Pedersen said that at the House of Relief, where a heterogeneous group of genitourinary patients who had abused themselves in all sorts of ways were constantly under treatment, he had seen no case of urethral chill during the past three years. The rule there was to exercise great care in the selection of patients into whose urethras instruments were introduced. Patients who gave a history of previous operation for an old urethral stricture were apt to be sent to the hospital, and were otherwise submitted to preparatory treatment before the introduction of an instrument, because even such a simple procedure as passing a sound might lead to serious results in these cases. Before or after instrumentation the patients were given a cardiac stimulant and arterial dilator, such as nitroglycerin in asthenic cases, or, in the sthenic type a cardiac sedative and arterial dilator such as aconite, and perhaps a small dose of morphine or codeine. Quinine was also given in all cases. This combination was suggested by Dr. Robert F. Weir to Dr. Pedersen, while House Surgeon at the New York Hospital. No urethral chills and no reflex anuria were seen there during his term of six months' duty. The doses used by Dr. Pedersen were: Nitroglycerin gr. 1-50, or fluid extract of aconite ♏iii, quinine sulphate gr. v-x, codeine gr. i, or morphine gr. 1-8.

Dr. Bangs, in closing, said he did not object to the use of the inlying catheter. On the contrary, he used it constantly and only objected to it after internal urethrotomy or after a combined internal and external urethrotomy, when the catheter was tied into the whole length of the urethra. The speaker said he used utrotropin habitually, both before and after operation, and had never seen cauterization of the wound surfaces. Occasionally one saw the wound surfaces coated with phosphatic material, but that was not due to urotropin.

Unilateral Pyelonephritis.—Dr. Martin W. Ware showed the specimen in this case. It was obtained post-mortem from a patient upon whom he had done a prostatectomy one month prior to the final operation on the kidney. The history of the case preceding prostatectomy was that the patient had had several attacks of acute vesical retention, and attempts to enter the bladder gave rise to free hemorrhage. He was finally cystoscoped, and a vesical calculus and an enlarged prostate were found. Prostatectomy was done in two stages. About a month later the patient complained of pain over the left kidney, with increased leucocytosis and an irregular, intermittent temperature. The left kidney was exposed and incised, and about a pint of pus evacuated about its upper pole. The kidney was incised and the wound was then closed, with drainage. Within 24 hours later the patient showed signs of diminished urine, which became an absolute anuria and ended fatally. At the post-mortem examination the kidney was found studded throughout with abscesses. The opposite kidney was found to be absolutely normal.

Pathological Society of Philadelphia and Philadelphia Academy of Surgery.

At a joint meeting, held February 13, a symposium was held on the "Parathyroid Glands." Dr. W. S. Halsted, Professor of Surgery in the Johns Hopkins Medical School, presented a communication entitled "The Parathyroid Glands in Their Surgical Aspects." He first detailed certain experimental observations that he had made, showing that the parathyroid glands could be removed from their normal situation behind the thyroid gland and be transplanted in some other situation, for example, behind the rectus abdominalis muscle, without the development of untoward symptoms; but when the transplanted glands were removed from their new site symptoms of tetany appeared. He pointed out that the parathyroids varied in number and location, although as a rule in man there were four of them, and they were usually situated within the capsule of the thyroid gland, although at times they are embedded in the structure of the gland. He referred to the case of a woman who developed tetany after inadvertent removal of the parathyroid glands during an operation for goiter and who had obtained a certain measure of relief from an anti-parathyroid serum. Dr. W. G. MacCallum, Associate Professor of Pathology in the Johns Hopkins Medical School, delivered an address entitled, "The Physiology and Pathology of the Parathyroids." He emphasized the structural and functional nonidentity of the thyroid and parathyroid glands. The parathyroids exhibited marked variability in number and in position in lower animals, although in man there were usually four and situated behind the thyroid gland. They were commonly in close relation with the inferior and superior thyroid arteries, from which they derived their nutritive supply. Their removal, and not that of the thyroid, gave rise to the symptoms of tetany, by permitting the accumulation of toxic substances in the blood. These symptoms could be induced when the muscles were isolated, but not when the nerves or spinal cord was divided, so that it might be concluded that the toxic effects were exerted on the central nervous system. Dr. MacCallum had found in experimental observations that there was a marked deficiency in the amount of calcium salts retained within the body in animals from which the parathyroids

had been removed, and that when symptoms of tetany developed under these conditions they could be checked instantaneously by the intravenous or subcutaneous injection of a soluble salt of calcium and less effectively by administration through the stomach. Accordingly, Dr. MacCallum has proposed the designation diabetes calcareus for the disorder. In the case of tetany cited by Dr. Halstead, administration of calcium lactate in doses of 4 grams seemed to afford relief from the symptoms, but, of course, hasty conclusions could not be reached from isolated experience. Dr. N. Ginsburg and Dr. J. J. Gilbride demonstrated dissections exhibiting parathyroids *in situ* and their relations to adjacent important structures. A discussion followed, which was participated in by Drs. E. A. Spitzka, H. A. Hare, John E. Deaver, A. O. J. Kelly, C. H. Frazier, J. Chalmers DaCosta and A. P. Brubaker.

Philadelphia Pediatric Society.

At a stated meeting held February 11 a symposium was presented on "Rheumatism in Children." Dr. Warfield T. Longcope read a paper, entitled "The Etiology of Rheumatism." He discussed the various microorganisms that have at different times been described as present in the articular lesions and the complicating endocarditis, but from a study of the literature and some observations of his own, he was unwilling to admit the specificity of any of these. He even went so far as to say that the streptococci and diplococci described as specific could not with certainty be differentiated morphologically or in culture from the large group of streptococci present in varied lesions under the most diverse conditions. He left the impression that the symptoms of acute rheumatism might be induced by any one of a large number of microorganisms. Dr. D. J. McCarthy presented a communication entitled, "The Relation of Rheumatism and Chorea." He defined chorea as an acute infectious disease concerning whose etiological factor we were as yet in ignorance. Inasmuch as the specific causative agent of rheumatism was likewise as yet unisolated, any direct relation between the two diseases could not be absolutely demonstrated. Observations by trustworthy clinicians, however, made it appear that rheumatism is or has been present in some 25 per cent. of all cases of chorea. Dr. Charles Hunter Dunn, of Boston, read by invitation a paper, entitled, "The Peculiarities of the Symptomatology of Rheumatism in Children." He dwelt upon the wide differences in the symptoms of the disease as observed in children and adults respectively. While in the latter articular symptoms are the most conspicuous, in the former lesions are most common. In children, also, the disease has a tendency to be more insidious in onset, more obscure in development, and more protracted in course. Dr. Alfred Stengel made remarks on "The Complications of Rheumatism in Childhood." He emphasized the fact that the cardiac disorder attending rheumatism in childhood is essentially a pancarditis, neither endocarditis, nor pericarditis, nor even merely a myocarditis, out, as a rule, a combination of all three. Dr. Jay F. Schamberg read a paper entitled "The Cutaneous Manifestations in Rheumatism in Children." He took the ground that rheumatism was not attended with cutaneous lesions peculiar to itself, but that such as appeared in connection with it were attributable to the toxic effects of the underlying cause of the disease, whatever this cause might be. Very similar lesions, he said, might be observed in connection with a variety of other infectious and toxic processes. Dr. J. P. Crozier-Griffith read a paper entitled, "The Treatment of Rheumatism in Children." He advocated especially the use of salicylates, particularly sodium salicylate, and the alkalies, sodium bicarbonate and potassium acetate.

New Instruments.

SIMPLE APPARATUS FOR ASPIRATION AND EVACUATION OF THE TYMPANIC CAVITY AFTER PARACENTESIS.

By PERCY FRIDENBERG, M.D.,
NEW YORK.
JUNIOR SURGEON NEW YORK EYE AND EAR INFIRMARY.

In a paper on the Treatment of Acute Otitis Media in Childhood* and in a number of subsequent publications†, I have called attention to the value of the procedure indicated in the title of this note. At various times, more especially since my last article on this subject, I have received letters asking where the suction-bulb which I described could be procured. As the method is gradually gaining ground, and is, as I am firmly convinced, a valuable aid in the removal of pus accumulations from the middle ear, a photograph of the little instrument and a few words as to its use may be of service to those who wish

to apply the method which I have recommended. As stated in my papers, no special apparatus is essential. Any glass bulb will answer which will plug the meatus without causing pain, has no sharp tip to inflict injury, is wide enough to be easily cleaned out, and will stand boiling. The ordinary, small-size ear-irrigating tip will do very well. The model I use is about the size and shape of an olive, measuring five-eighths of an inch by one inch, with a short shouldered neck, as shown in the accompanying illustration. The neck is stuffed with dry sterile absorbent cotton, and the glass bulb, after being boiled, is attached to a piece of stiff white rubber tubing about one and a half feet long, and of lead-pencil caliber.

The aspirating force may be supplied by a small syringe, or the lips may be applied directly to the

American Journal of Surgery, May, 1905.

†Aspiration of the Tympanic Cavity, etc. Medical Record, March 3, 1906. *Annals of Otology, Rhinology, and Laryngology*, September, 1906. *Journal of the American Medical Association*, January 4, 1907.

tube and actual suction made, as is the usual practice with the Siegle otoscope. While the syringe would appear more suitable from the standpoint of ideal asepsis and esthetics, there is no practical objection to suction, and this method has a number of real points in its favor. The sterile cotton in the neck of the bulb prevents aspiration of septic matter into the rubber tube. The degree of suction employed can be accurately gauged, as it is distinctly felt by the operator, and can be varied within wide limits. This is not the case with the syringe, which requires the use of both hands, and has to be of large size if it is to have sufficient aspirating power.

The ease with which this simple apparatus can be made ready for use, applied, and afterwards sterilized, its simplicity and portability are its great points of superiority over other complicated forms of aspirators on the model of the otoscope. Almost any druggist can supply the bulb, or procure it from one of the glassware-manufacturing houses at trifling expense. For removing matter from the middle ear for bacteriological examination it is perfect. Aside from the mechanical removal of septic matter, the factors of depletion, thinning of exudate, and increased flow of uncontaminated blood-serum to the middle ear, the active hyperemia induced without interfering with circulation or rather with venous outflow, and the aid to drainage are the valuable features of the method which has all the advantages of Bier's treatment without any of its objectionable and even dangerous features.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

URIC ACID. By GEROGE ABNER GILBERT, M.D. 8vo, 310 pages, muslin. The Danbury Medical Printing Co., Danbury, Conn.

INTERNATIONAL CLINICS. Edited by W. T. LONGCOPE, M.D. Large 8vo, 308 pages, muslin, illustrated. J. B. Lippincott Company, Philadelphia.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Large 8vo, 370 pages, paper, illustrated. Wm. F. Fell Company, Philadelphia.

SEMI-ANNUAL REPORT OF SCHIMMEL & CO. (Fritzsche Brothers). 12mo, 178 pages, paper, illustrated. New York.

TRAITEMENT DE LA TUBERCULOSE. By E. GERARD and G. LEMOINE. 8vo, 64 pages, paper, illustrated, 1f. 50. Vigot Frères, Editeurs, Paris.

PATHOLOGY. By R. TANNER HEWLETT, M.D., F.R.C.P., D.P.H. 8vo, 585 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

THE EVERY-DAY DISEASES OF CHILDREN. By GEORGE H. CHANDLER, M.D. 12mo, 386 pages, muslin. The Clinic Publishing Co., Chicago, Ill.

COSMETIC SURGERY. By CHARLES C. MILLER, M.D. 16mo, 136 pages, illustrated, muslin, $1.50 net. Charles C. Miller, M.D., Chicago.

MEDICAL DIAGNOSIS. By CHARLES LYMAN GREENE, M.D. 12mo, 691 pages, illustrated, leather, $3.50 net. P. Blakiston's Son & Co., Philadelphia.

MOVABLE KIDNEY. By DAVID NEWMAN, M.D., F.F.P.S.G. 8vo, 233 pages, illustrated, muslin, $1.75 net. Longmans, Green & Co., London.

GYNECOLOGICAL TRANSACTIONS. Large 8vo, 568 pages, cloth, illustrated. William J. Dornan, Philadelphia.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. 8vo, 770 pages, cloth, illustrated.

ANEMIA IN PORTO RICO. 8vo, 120 pages, paper. Bureau of Printing and Supplies, San Juan, Porto Rico.

NERVOUS AND MENTAL DISEASES. By HUGH T. PATRICK, M.D. and CHAS. L. MIX, A.M., M.D. 12mo, 240 pages, cloth, illustrated, $1.25. The Year Book Publishers, Chicago.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 29, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	451	204
Diphtheria	373	44
Measles	1554	39
Scarlet Fever	924	39
Smallpox	..	..
Varicella	180	..
Typhoid Fever	45	9
Whooping Cough	20	1
Cerebrospinal Meningitis	16	8
Malarial Fever	..	..
Totals	3563	344

Gifts for Charitable Objects.—During the year 1907 the Chicago *Tribune* estimates that the sum of $148,902,000 was given for philanthropic purposes. The list of donors is headed by John D. Rockefeller, Mrs. Russell Sage comes second, and Andrew Carnegie third. Mr. Carnegie's total gifts are said to amount to $170,000,000.

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending February 28, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS
California, San Francisco	Feb.	1–8	3	..
Illinois, Springfield	Feb.	6–13	6	..
Iowa, Ottumwa	Feb.	8–15	1	..
Kansas, Kansas City	Feb.	8–15	11	..
Topeka	Feb.	1–8	2	..
Michigan, Saginaw	Feb.	1–8	6	..
Ohio, Cincinnati	Feb.	7–14	26	1
Warren	Feb.	8–15	1	..
Oregon, Portland	Feb.	1–8	2	..
South Dakota, Sioux Falls	Jan.	25–Feb. 1	1	..
Tennessee, Nashville	Feb.	8–15	6	.
Texas, San Antonio	Feb.	1–8	8	1
Washington, Spokane	Feb.	1–8	13	..

SMALLPOX—FOREIGN.

Cape Colony, East London	Jan.	4–11	2	1
Japan, Kobe	Jan.	11–18	783	163
Nagasaki	Jan.	1–23	3	..
Yokahama	Jan.	18–25	40	13
Java, Batavia	Dec.	21–Jan. 18	9	..
Mexico, Aguas Claientes	Jan.	26–Feb. 2		4
Mexico City	Jan.	4–11		2
Netherlands, Rotterdam	Jan.	18–25	1	.
Portugal, Lisbon	Jan.	18–25	2	
	Feb.	1–8	1	..
Russia, Batoum	Dec.	13–Jan. 13	23	..
Libau	Jan.	18–Feb. 1	2	..
Moscow	Jan.	4–18	57	17
Odessa	Jan.	11–18	2	2
Riga	Jan.	11–Feb. 1	19	..
Spain, Denia	Jan.	11–25	11	..
Valencia	Jan.	12–Feb. 2	56	5
Straits Settlements, Singapore	Dec.	8–Jan. 4	..	19
Venezuela, Caracas	Jan.	4–11	..	Present
La Guaira	Jan.	4–Feb. 1	..	"

YELLOW FEVER.

Barbados, Bridgetown, vicinity of	Jan.	20	1	1
Cuba, Habana	Feb.	20–22	2	.
Santiago	Feb.	20	1	.

CHOLERA.

India, Madras	Jan.	4–10		8
Rangoon	Jan.	4–11		7

PLAGUE.

Australia, Brisbane	Jan.	3	1	1
Cairns	Nov.	23–30	1	1
Sydney	Dec.	28–Jan. 4	2	
Chile, Valparaiso	Jan.	4	1	.
China, Hongkong	Dec.	21–28	1	1
Egypt, Assiout Province	Jan.	16–22	15	7
Garbieh Province	Jan.	19–22	2	..
Minieh Province	Jan.	12–22	15	5
India, General	Dec.	22–28	3,725	5,741
	Dec.	28–Jan. 4	4,402	2,618
Peru, Callao	Jan.	4–18	4	1
Catacaos	Jan.	4–18	7	4
Chosika	Jan.	4–18	1	..
Eten	Jan.	4–18	9	3
Ferrenafe	Jan.	4–18	1	..
Lima	Jan.	4–18	5	3
Paita	Jan.	4–18	10	9
Piura	Jan.	4–18	2	..
San Geronimo	Jan.	4–18	4	
Trujillo	Jan.	4 18	29	9

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Original Articles.

SOME OBSERVATIONS ON THE EFFECTS OF TOBACCO IN SURGICAL PRACTICE.*

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NEW YORK.

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THE purpose of this paper is not to make a dissertation upon Tobacco, but to give briefly some experiences which have had an influence upon the practice of the writer. It is also to suggest a topic, the discussion of which it is hoped will bring out the experience of others and perhaps correct any misapprehensions or unwarranted conclusions of the paper.

It is a common observation that when a man is sick he gives up tobacco spontaneously; that with convalescence the craving for it returns, and, apparently, the subject has experienced no ill result from the sudden withdrawal of the drug. This is especially true, I think, of strictly medical conditions; and from what I have observed in surgical states, I have been led to ask the question whether this apparent indifference of the medical patient to the withdrawal of the tobacco is not due to the supporting effect of the strychnine, alcoholics, and other cardiac stimulants usually administered. For, in surgical maladies, excepting in those cases in which the gravity of the general symptoms overshadows everything and demands supporting measures, there is sometimes a mental irritability and restlessness and, not infrequently, a vital depression not to be accounted for by the surgical state. What is the cause of these? I believe the withdrawal of tobacco. After awhile accommodation is established and other symptoms disappear; but, in consequence of the experiences which I am about to relate, I have, whenever the symptoms of the patient suggested it, not only winked at, but encouraged the surreptitious use of tobacco by my hospital-ward patients, and in private practice have advised the resumption of the habit at the earliest possible moment—even when the patient seemed too weak to draw on his cigar. I believe that the irritability and restlessness have been relieved and the convalescent period shortened by permitting the use of the tobacco to which they had been accustomed. Of course this applies only to the habitual users of tobacco, whose nervous system has become dependent upon it. Presumably a healthy man or one whose kidneys are in good condition, can consume a moderate amount of tobacco without any particular harm to himself, present or future, but it seems to me that notwithstanding the "pleasure and mental satisfaction" which the use of tobacco affords there is danger to that part of the sympathetic nervous system which presides over the functions of the heart and kidneys; especially when the habit has been begun in early life, *i.e.* before the end of the developmental period, which may be placed at twenty-one or twenty-two years of age. What this moderate or temperate quantity is, is an individual matter and must be determined by the man himself. But even when in health his consciousness of the proper amount is clear, and his will aroused to exercise the necessary self-restraint, I doubt if he ought to be left to his own judgment to determine what is best in a state of sickness. Some of the writers on the effects of tobacco have said that there is no particular danger in a sudden withdrawal of tobacco, that "abstinence symptoms" do not occur in the same sense as they do after sudden withdrawal of alcohol or morphine, but clinical observations have led me to an entirely different opinion.

Some years ago I performed internal urethrotomy upon a young man, aged twenty-six. His organs were all normal with the exception of an overacting heart, due to his inveterate overindulgence in tobacco, notably cigarette smoking. He had begun the habit in early boyhood and had gradually become absolutely dependent upon his daily tobacco. No untoward events occurred in regard to the operation itself. He had a skilled male attendant, he was surrounded by all the conveniences and luxuries of life, and on the sixth day after the operation, although I thought it advisable to keep him in bed, I informed him and his relatives that I would not be in again for two or three days, leaving word with his attendant to report to me in regard to his condition. On the second day thereafter I received an urgent note from his mother in which it was said that the young man was dying and that I must hurry to his rescue. Fortunately I was at home when the message was received and arrived at his bedside fifteen or twenty minutes later. I found the whole household gathered on the stairway and his mother and trained attendant hovering over the patient whose appearance was certainly alarming. He had slipped from the pillows down into the bed; his face was ashen; a clammy sweat covered his face and hands; he feebly responded to questions but made no voluntary movement or speech; his respirations were shallow and labored; and his pulse, feeble and distant, fluctuated widely in the few moments of hurried observation. He had the appearance of a man suffering from extreme shock. At first I could not account for the situation. The surgical conditions were all good. There had been no hemorrhage from the urethra and there had been no chill or rise of temperature. It was now about two o'clock in the afternoon and according to the nurse's account, although the night preceding had been a restless one, this morning he had eaten his breakfast as usual and nothing extraordinary had occurred. The nurse had left him to go to his own luncheon, but before he had finished he was sum-

*Read before the Practitioners' Society of New York, February 7, 1908.

moned by the mother and found the patient in the alarming condition which had increased to the one which I have tried to describe. At the head of the patient's bed stood a commode upon which was always a silver tray holding one or two packages of cigarettes, a small box of wax matches and always stumps of the innumerable cigarettes which he had smoked all through his illness. On noticing that the tray and its accompaniments were not there, suddenly a possible cause of his condition came to me, and I asked his mother if he had stopped his tobacco. She said "yes"; that in response to her urgent solicitations, which she had been making for several years, he had thought it a good opportunity to give up his habit and deciding that he could better stop short than taper off had sent the tobacco out of the room. His last cigarette had been smoked some time in the morning of the previous day, and although he had been restless and passed a wakeful night he had not complained and, as she said, prepared himself to fight it out. I immediately sent the attendant to a neighboring hotel for a package of cigarettes; meanwhile watching the patient, whose condition did not change very much excepting that some brandy and water, which he feebly swallowed, gave him slight support. On the return of the attendant in a few minutes, I placed a cigarette in the patient's mouth, lit it for him and told him to pull on it as strongly as he could. He took a few feeble whiffs, inhaling each time; and then, as his respiration became stronger, he inhaled the smoke vigorously. In a few seconds his usual color came back to his face, the sweat stopped, his heart beats became stronger and regular, finally settling down to about eighty, and before he had smoked one cigarette he pulled himself up in bed upon the pillows. This was all that I did for him. His return to life was rapid (to his mother miraculous), and my counsel, that acute illness, whether surgical or otherwise, was not the time for him to give up his tobacco, was readily accepted.

Two years after this experience I operated upon a gentleman aged thirty-three, for hemorrhoids. He was in a private room in a large general hospital and everything went on well till four or five days after the operation, when, on making my daily visit, I was met at the door by the house surgeon who said that the patient was not doing well and that I ought to see him at once. In reply to rapid questioning he stated that he did not know what the trouble was; that the patient had no elevation of temperature; that he could find nothing wrong in the surgical conditions, but that the man was in a state of extreme depression, approaching collapse, and he had found it necessary to stimulate him. The patient's condition was similar to that of the one previously described, but without the clammy sweat and with symptoms of lesser gravity. Finding no local cause for the vital depression and knowing that the patient used tobacco I asked him if he had stopped smoking and if he had not felt the need of tobacco. He replied that he had stopped because he thought it was against the rules to smoke in the hospital, and that he missed the tobacco seriously. Then turning to the house surgeon, I asked him if he had a cigarette. Of course he had one, which at my request he placed in the patient's mouth; then with practised dexterity igniting a match he lit the cigarette. The patient inhaled, at first feebly, then vigorously, and he, too, like the preceding one, in a few seconds drew himself up on the pillows, the color came back to his face, and the pulse beats mounted and remained at 75. Curious to note what effect this would have upon the house staff, without a word I turned and left the room. As I went out into the corridor, the house surgeon and his assistants close behind me, I heard the house surgeon make to his senior assistant, the unscientific, inelegant, but significant comment: "Well! I'll be damned!"

Now here are two cases which show the results of sudden withdrawal of tobacco and certainly contravene the common opinion, shared by scientific and lay observers, that a man can do this without detriment. As to the second case I confess that I was surprised at the profound effect. Unlike the first, who was a "cigarette fiend," this man was temperate in all his habits, rarely smoking over three or four cigars a day, with an occasional cigarette, but he was of delicate, sensitive constitution and more dependent upon the moderate amount of tobacco than he or I knew. Moreover the symptoms seemed to be the culmination of an abstinence of about a week, while in the first the shock came suddenly after an abstinence of only twenty-four hours. It is probable that the surgical conditions rendered these men more susceptible to depressing influences and less able to resist the loss of the daily stimulant. The majority of us are so accustomed to tobacco that its use or disuse seems simple and harmless, therefore trivial and not worthy of being taken into account when the important subject of a surgical operation is before us. Hence these cases were a lesson to me and opened my mind to the necessity of a broader consideration of the relation between the vital processes and tobacco, and the risk of withdrawal of the daily dose. They also strikingly illustrated the rapid stimulating effect of the tobacco by inhalation.

In further proof of the value of this consideration take the following case: A young man aged twenty-five was operated upon by one of my colleagues for appendicitis. Everything went well surgically, till, on the fourth or fifth day after the operation, his pulse became quick with a normal temperature and he manifested great irritability, restlessness, and insomnia. The neurotic symptoms continued with increasing severity for several days longer, when it was found necessary to give him morphine hypodermically in order to control his excitement. The vital depression was also so pronounced that it was proposed to give him alcoholics. These he positively and persistently refused; his reason being that he had witnessed the effect of alcoholic intemperance in his father and he vowed that he would rather die than take any alcoholic. At this stage I was asked to see him in consultation. He was restless, moving precipitately in the bed, twitching, apprehensive, and sleepless, excepting when under the influence of morphine. His pulse varied from 90 to 100 and he complained of great debility. As the patient was known to be of a neurotic family it had been taken for granted that his symptoms, in the absence of surgical cause, were due to his constitutional tendency. Probably I would have concurred in this view but for my previous experience and also from knowing that he was as intemperate in the use of cigarettes as his father was in alcohol. On inquiry it was found that the tobacco which had been suddenly withdrawn during the primary operative period had not been resumed. He was miserable without knowing why, and not recognizing any tobacco craving it had never occurred to the patient or to his attendant that his condition was due to the withdrawal of his daily dose of the weed. Cigarettes were ordered as one

would order strychnine or any other cardiac tonic, and convalescence was soon established. This young man was of neurotic parentage, of neurotic constitution, and although he could easily abstain from alcoholics he craved the stimulus of tobacco; this he subsequently combined with opium and for some years after was a wreck till he learned that he could not stop opium until he stopped tobacco, from both of which he has now abstained for several years. This leads me to quote a statement made to me by one of the good people who conduct missions among the degraded that they have made the observation that the majority of alcoholic inebriates cannot abstain from alcohol till they have first abstained from tobacco, and especially from cigarettes. I have no opinion as to the scientific value of this observation but offer it for your consideration.

In these cases it seemed to me that the heart had become accustomed to, and dependent upon, the tobacco; and that therefore, sudden withdrawal could not wisely be counseled. These observations strengthen the opinion stated in the early part of this paper, that the restlessness, depression of vital force, and melancholia of some of our ward patients may be due to the deprivation of their accustomed stimulant. Dr. Larrabee of Harvard University Medical School says that emotional strain, overexercise, insufficient or improper food, and indulgence in alcohol will predispose to some of the ill effects of tobacco, and states that a series of cases of angina appeared on a French man-of-war where the men, debilitated by scurvy and poor food, smoked to excess in a small, close apartment.* It is possible that some of these predisposing influences may, and they probably do exist in many of our hospital patients, but nevertheless, the relation of tobacco to the individual ought to be considered more than we are in the habit of doing.

20 East Forty-sixth Street.

PRELIMINARY REPORT OF A CASE OF CEREBROSPINAL MENINGITIS OF STREPTOCOCCUS ORIGIN APPARENTLY CURED BY SUBDURAL INJECTION OF ANTI-STREPTOCOCCUS SERUM.†

By GEORGE L. PEABODY, M.D.,

NEW YORK.

The patient is a man, 37 years of age, who was admitted to the New York Hospital on January 2 of this year. He gave the following history: His father, mother and one brother are all living and healthy. In his mother's family there have been two deaths from pulmonary tuberculosis; so far as he knows there is no other chronic or organic disease in his family. He does not think that he has had any of the acute infections of childhood. He has had a right inguinal hernia since the age of 13 years. Eight weeks before coming to the hospital he was struck by a trolley car and sustained bruises of the knees, right ear and face, and a slight scalp-wound, from all of which he made a rapid and complete recovery. He indulges freely in alcohol at times, and uses tea and coffee moderately. He denies venereal disease; he has lost most of his hair, however, and one epitrochlear gland is enlarged and palpable.

Present Illness.—He was feeling perfectly well until fourteen days before admission to hospital. On that day he was exposed to cold and wet, and soon thereafter on arriving at his home he had two severe chills. Almost immediately following the chills he felt quite feverish and complained of headache. This headache was severe and affected especially the top of his head and the temporal regions. Headache of this character has been present in greater or less degree of severity from that time until his entrance into the hospital. It is often most severe toward evening and during the night, though this is not invariably the case. When pains in the head are less marked his appetite is very fair, and he is able to take food and enjoy it, but if he attempts to take food while he has severe headache this is almost always followed by vomiting, which is not projectile in type. He is very nervous, and has slept but little during the past ten days. Three days ago he first noticed stiffness of the neck and pain in the muscles when he turned his head from side to side or bent it forward or backward. This stiffness of the neck has been steadily increasing in severity. Coincidently with the occurrence of the neck symptom he noticed pains and aches in the lumbar region. For the past seven days he has been growing very weak, and now feels markedly prostrated. There has been no cough and no epistaxis. His bowels have been constipated for the past few days. Except from weakness he has had no vertigo, and there has been no tinnitus, and no discharge from the ears. He has had aching pains about the eyes, but no disturbances of vision. His chief complaints on admission are constant headache, usually most severe at night, insomnia, fever, and prostration.

On admission he seemed acutely ill. His pupils were of moderate size, equal, and reacted to light and accommodation. His eye grounds were normal. His right external ear showed a short, recent scar on the lobe; but his ear drums were normal. His neck was stiff and painful on motion of his head. There was no tenderness over his frontal sinuses, or over his antra Highmori. His radial pulses were regular, equal, of good size and force, not rapid, of moderate tension. Arterial walls seemed thickened.

His heart was normal in all respects, as were also his lungs. Examination of his abdomen revealed nothing noteworthy. His knee-jerks were exaggerated, there was a very slight ankle clonus on both sides. Plantar reflexes were normal. Kernig's sign was present on both sides.

He was admitted at 6 P. M. on January 2. At that time his temperature was 100.6°, his respiration 26 and his pulse 112. On account of the severity of his headache an ice-bag was applied to his head, and later, a powder consisting of a small dose each of phenacetine, acetanilide and caffeine, was given to him.

At midnight he was still awake and suffering severely from pains in his head. Four ice-bags were applied to his head, so as completely to cover the vertex, and he received seven minims of deodorized tincture of opium.

During the night his pain was not relieved and he slept but little. The next day he had a chill which lasted twenty minutes, after which his temperature rose to 103.6°. His blood at this time contained 11,200 leucocytes of which 70 per cent. were polymorphonuclears. It contained no malarial organisms. Two days later the leucocytes had increased to 14,400 with 78 per cent. polymorphonuclears.

*See his article in the Reference Handbook of the Medical Sciences. New York: William Wood & Co.

†Read before the Practitioners' Society of New York, February 7, 1908

His fever from the start showed the wide excursions suggestive of sepsis, varying between 99° and nearly 104°; and this continued for thirteen days, or until after the first subdural injection of antistreptococcus serum into the spinal canal. The severity of the headache, its nocturnal exacerbations and the insomnia suggested the possibility of cerebral syphilis, but this hypothesis was soon discarded. Deodorized tincture of opium and morphine were the only agents that gave relief at night, and, even in full dose, these often failed to give sleep. Occasionally he was delirious at night, and his condition necessitated restraint to prevent his leaving his bed. Once in a while he vomited.

Two days after his admission blood was taken for culture but nothing grew in it in forty-eight hours. One subsequent attempt at blood-culture produced a similar negative result. No petechial or other hemorrhages occurred either in skin or elsewhere. His eyegrounds remained persistently normal. The day after his admission lumbar puncture was resorted to and six drachms of a slightly turbid fluid was withdrawn under distinctly increased pressure. It rose to a height of seventeen centimeters in a manometer, which, according to our observation, indicates nearly twice the normal pressure. It contained many leucocytes, some in a condition of degeneration. Of these leucocytes 72 per cent. were polymorphonuclears and 28 per cent. were lymphocytes; but cultures made from it, while revealing the presence of a Gram positive coccus, occurring in pairs and chains, composed of 8-10 individuals, left us in some doubt as to the exact identity of the organism. On January 10 a second lumbar puncture was done and sixteen drachms of slightly turbid fluid withdrawn which was found to be under 22½ cm. of pressure, or considerably more than twice the normal pressure. This had a specific gravity of 1.007, was of alkaline reaction, contained a faint trace of albumin and reduced Fehling's solution, on boiling. It contained many leucocytes, some degenerated. Sixty-one per cent. of them were polymorphonuclears and thirty-nine per cent. were lymphocytes. After forty-eight hours flasks inoculated with this serum showed a pure culture of a rather small streptococcus, many of them in long chains.

This settled the diagnosis as cryptogenetic sepsis, with localization of infection in cerebrospinal meninges, or subarachnoid space.

Although my previous experiences with antistreptococcus serum had been unsatisfactory (with the exception of a single case of scarlatina), on the 12th and 13th of January I gave him *subcutaneously* 10 c.c. of the serum. This was followed by no improvement in pain, fever, or general condition.

On the 14th I began *subdural* injections of the serum into the lumbar region of the spinal canal, and this was continued daily for four days. On each occasion a varying quantity of cerebrospinal fluid was withdrawn, and immediately replaced by ten cubic centimeters of anti-streptococcus serum. Then a day was allowed to pass before the fifth injection, and then after the lapse of another day a sixth similar injection was made. Thus he received in all six injections of 10 c.c. each of the anti-streptococcus serum into the spinal canal in a period of eight days.

After the second subdural injection, the spinal fluid proved sterile, and it was always found sterile thereafter; and on the day after the first of these injections the temperature fell for the first time below 99°; and from that time it fluctuated between 97.7° and 100° for six days. It then rose on two successive days to 101.4° and 102° respectively. It then fell to the normal and has now remained normal for twenty-six days.

The other symptoms steadily abated, the headaches being one of the earliest of them to yield to the treatment. Stiffness of the neck soon disappeared; but Kernig's sign could be observed until the 24th of January, since which time it has not been present.

After the subsidence of the headache he complained for several days of pains and cramps in his legs, and he required more or less opium at night occasionally to induce sleep; and at times he seemed somewhat dazed.

By January 25 practically all of his symptoms had disappeared and he was entirely rational. By the 29th he slept well without drugs; he was allowed to sit up and soon thereafter to walk about, and then to go out of doors daily. At the present writing (February 17) he looks and feels perfectly well and insists upon leaving the hospital to return to his home in Nova Scotia. He has remained in the hospital for the past two weeks only at my urgent solicitation; in the past seventeen days he has gained thirteen and one-half pounds.

It is worth noting that the attacks upon the spinal canal always caused pain, and that he thought the injection of the serum was followed by pain in the back and lower extremities and occasionally by aggravation of the headache; but I was led to insist upon its continuance because of the abatement of the fever and because of the sterilization of the spinal fluid which so soon resulted. Local anesthesia by ethyl chloride was the only attempt to diminish the pain of the procedure, and this was successful, of course, only in anesthetizing the skin.

Streptococcus cerebrospinal meningitis is rare, so rare, perhaps, that this experience may be of little general interest, but it seemed worth while to put it on record as being valuable as far as it goes.

SEPTAL HEMATOMA AND ABSCESS.*

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Under this designation some observations are herewith offered on certain conditions which follow injuries of the nose and which occasionally appear without apparent cause and are, in the common phrase, idiopathic. I need hardly remind you that the use of this term, dating back to the old ideas on humoral pathology, is fast departing from scientific medicine. We may still use it in contrasting certain primary with certain secondary lesions, but it should always be with the understanding that idiopathic disease is merely disease without apparent cause.

Three clinical conditions within the scope of this brief paper have been described: 1st, hematoma; 2nd, abscess dating back to the classical description of Cloquet in 1830, and 3rd, serous perichondritis which is sometimes cystic. The term "perichrondritis" is objectionable, for, as we shall see, the perichondrium is not alone involved. All the septal layers participate in the process and sometimes the adjoining bone.

We shall better understand the subject if we devote a few words to a description of the mode of

*Read at the meeting of the Section on Laryngology, New York Academy of Medicine, Wednesday evening, January 22, 1908.

formation of the septum. Its cartilaginous portion is made up mainly of the quadrangular cartilage. In addition we have the columnar cartilage and the middle projections of the upper and lower lateral cartilages. The unossified strip of cartilage lying between the vomer and the perpendicular plate of the ethmoid is really a process of the quadrangularis, though receiving a separate name, the sphenoethmoid. A portion of the posterior segment of the quadrangularis sometimes assists in the support of the nasal bones.

Nasal development begins in the second month of intrauterine life. A slight groove appears at either side of the frontal protuberance. On each side of this groove two projections arise, the nasal processes. The outer pair form the external nasal walls while the inner pair unite to form the septum. These processes slightly diverging, grow downward and finally reach the floor of the nose, which is now at the tenth week formed by the union of the two superior portions of the mandibular arch. It will thus be seen that the septum is formed by the union of double structures. By the end of the second month ossification has begun on both sides of the primary septum. (Freeman.) This duality of the septum bears directly on the conditions we are considering this evening and accounts for the fact that the swelling due to hematoma or the inflammatory swelling due to abscess may appear in both nares and require treatment on both sides.

The most frequent cause of either variety of lesion is trauma, a blow or fall on the nose. A front blow seems more likely to set up inflammation leading to abscess than does a side blow, probably because such a front blow is more likely to separate the two united septal plates, thus permitting the accumulation of blood which offers a favorable culture medium for the growth of invading microorganisms. In many instances it is difficult to establish the relationship between a trauma and the abscess, for slight contusions easily forgotten may lead to hematoma and later to abscess. The latter may occur in connection with or as a sequel to typhoid fever, influenza, sinus disease, larvæ in the nose, tuberculosis, syphilis, dental cysts and caries, anthrax, glanders, measles, variola, and typhus fever. It has been noted after vestibulitis, furuncles, and acute and chronic coryza. In children it is more frequent during the first dentition and is doubtless more common in those of the scrofulous and rachitic diatheses. It has followed too forcible tamponing of the nose (case of Chavanne). Lederman has reported one case occurring after the removal of a bony spur with the saw. Erysipelas often finds its point of entrance on this septal site. It may lead to local abscess. Dantziger states that in women, the effects of a trauma are more apt to cause abscess if such trauma is inflicted during the menstrual period. Hecht declares that acute cases of perichondritis always follow influenza or aural trouble. Slow cases imply an infection of the nose on the area of least resistance. This author believes that hematoma without apparent cause is a characteristic feature of influenza, relating the histories of two cases tending to support this view. The first case was that of a boy of eight years who took influenza from his mother. He presented the usual intranasal swelling which proved to be a hematoma. The second case was that of a woman who developed an influenza during her menstrual period in which the characteristic swelling appeared as a hematoma but subsided without suppurating. This hemorrhagic tendency of influenza is manifest in the brain, ears, accessory sinuses, and in fact on the mucous surfaces generally.

An unusual clinical history is that given by Herek who relates that he was consulted by a woman of middle life who had had, eight days before, a very long bicycle ride in the hot sun and whose face still bore evidences of such exposure. On the day after the latter she had begun to have burning and discomfort in the nose, and when seen by the reporter presented the usual symptoms of abscess. Incision gave vent to serous pus, and examination revealed partial destruction of the cartilage. Herek referred the lesion to the exposure of the sun, but it seems more probable that it was due to the continuous impact for a long journey on a dusty road of dust-laden air containing infecting microorganisms.

The features of the cases referable to dental abnormalities are illustrated by a case of Killian's. A young man had pain in his left upper incisor tooth, and two days later, nasal obstruction, frontal pain, and high fever. On the seventh day there was a spontaneous discharge of pus from the left naris. The entire mucosa was swollen on both sides and elevated from the cartilage. The evidences of sepsis with the escape of pus from the naris continued. Free incision revealed the fact that nearly the entire septum had disintegrated. The bony septum was not involved. Healing resulted in fourteen days. The tooth referred to appeared sound externally. The patient went along without incident for six months when pain reappeared in the same tooth. It was extracted, but pus flowed from the socket and a probe could be passed two and one-half centimeters to the floor of the nose and the septal cartilage. A cyst was found at the tooth root. Its wall was removed and the cavity scraped. The cyst had evidently broken through under the septal mucosa in the initial attack. There was eventually a slight falling in of the nose. Killian states that he knows of two other similar cases. In one of Roe's cases, the abscess followed the filling of a tooth with amalgam.

Septal hematomata and abscess are among the unusual occurrences in rhinological practice. It is perhaps hardly true to say that they are rare. Lambert Lack met with twelve instances in a series of 17,000 cases seen in routine clinical work. He estimates that they occur once in about 1,500 to 2,000 cases. Up to the date of publication of his classic treatise, Morell Mackenzie had seen but one case of hematoma and one of abscess. On the other hand, Ruault of Paris declares that he saw between 70 and 80 cases of abscess in the course of eight years at one single institution. Wroblewski reports 14 cases, the largest number I have found definitely enumerated by any single authority. Three hematomas and 14 abscesses have come under my own observation in about 14 years. It would be of interest to learn from the experience of those present as to the matter of frequency.

When we consider the frequency of trauma in this region, it is rather difficult to say why these particular lesions are not more common. Some have supposed that the bacteriological effect of the nasal mucus inhibits the activity of the pus cocci in this region. The natural drainage is of course free. We know that while vascular parts bleed freely, this very vascularity enables them to recover themselves, so to speak, the more freely. As above noted, the severity of the trauma seems to be of less import than its direction in the matter of abscess formation.

A consideration of those cases without apparent cause leads us to bear in mind the histology of the mucosa in this region. It is extremely thin, not more than 1.5 mm. in thickness. One authority (Bargy) goes so far as to say that at the central

spot of the anterior inferior septum, there is practically no cartilage whatever and that the two layers of mucosa are in contact. He refers to this condition as a "physiological" perforation. Regardless of the thinness, however, the mucosa here presents four distinct layers: (1) a layer of cylindrical epithelium, becoming more pavement in character anteriorly and inferiorly; (2) the usual basement membrane; (3) a mucous chorion of two strata; 1st, a superficial stratum with mucous acinous glands and 2nd, a deep stratum carrying the nutrient vessels; (4) a connective tissue layer binding the mucosa to the cartilage. The attachment to the cartilage at the anterior inferior area is very close.

Now it is just over this area that the dust-laden air makes its initial impact on the intranasal structures and consequently the area is a favorite site for erosions. It is the site from which the blood most frequently comes in epistaxis. It is the favorite region of dalliance of the fingernail of the nose-picker. It receives the full force of any trauma. No wonder, therefore, that it offers an unusually favorable opportunity for the entrance of infecting organisms. The sequence of events is simple and easily explained. The germs generally found are the *Staphylococcus pyogenes albus* or the various streptococci. The symptoms are those which might naturally be expected and need not be enumerated before this audience. The characteristic feature is the bilateral swelling. Pus thus confined may give surprisingly little trouble except nasal obstruction. Not uncommonly the whole tip of the nose is red and tender. At times the inflammation may run out on to the cheeks or up to the eyelids and temples.

In hematoma, the blood effuses under the perichondrium. This may subside or become infected and go on to breaking down. The fluid takes on a brownish-yellow appearance looking like neither pus nor blood. This is the condition designated by some writers as "cold abscess." If the case is non-traumatic and runs an acute course, it has been called "acute perichondritis," but as we have noted the perichondrium is not alone involved and hence the term is objectionable. Jurasz, Massei and others have described a form in which the fluid becomes distinctly serous and call it "serous cyst." Obstructive symptoms may appear in the eyes as epiphora and conjunctivitis. Of course the fluid may be purulent from the beginning. Casselberry aptly observes that "some sort of abscess is the culminating stage of all these conditions."

Why is the abscess bilateral, an incision on one side not always evacuating the other side? It must be remembered that the cartilage here is really a fusion of two plates which have become separated by the trauma and the inflammation to which it gives rise. The effusion of blood raises the perichondrium on each side. Moreover the fused plates may become fractured thus offering communication from one side to the other. The tissues may degenerate and the effused pus often contains bits of grumous material. Probably in most instances the cartilage undergoes carious changes but generally the mucoperichondrium is sufficiently preserved to make good this loss. Large sloughing is unusual as is also invasion of bone, though Killian reports one case, that of a young man of 21 years, with the usual swelling of the nose and also of the hard palate. Incision of the former gave exit to clean, creamy pus; of the latter, to a few drops of foul, watery fluid. At this time no perforation could be detected. One was discovered, however, eight days later, and after another similar period the patient spat out two bony sequestra, leaving a small communication between the mouth and right naris. No trace of constitutional syphilis was discoverable in the patient.

An interesting question in these cases is that of a later deformity. We know that nearly or quite all the cartilaginous septum may go without distorting the contour of the nose. Some have contended that this follows here only after extensive cartilaginous destruction; others that it may occur after slight destruction provided that the force and direction of the trauma are sufficient to dislocate the cartilage from the vomer. Roe declares that the destruction of the small cartilaginous plates on the nasal dorsum is of greater significance with reference to deformity than is that of the quadrangularis. These small plates serve to connect the shield cartilage of the dorsum and the nasal bones. The writer believes this view to be a correct one. The deformity is not of the usual saddle-nose variety but is lower down on the dorsum. To use Roe's words, "it gives the central portion of the nose a depressed appearance as if the person had been struck on the top of the nose with a small round body like a poker." In simple abscess there is merely destruction of a part or the whole of the cartilage while the soft tissues remain intact, whereas in syphilis the soft parts are frequently destroyed with the cartilage, leaving a large perforation in the septum and a corresponding depression of the central portion of the nose.

Lambert Lack states that post-abscess deformity may be due directly to the injury, appearing at once, or it may not come on till some years later. In these slow cases it may be referable to the gradual contraction of the connective tissue following the injury or it may be that the injury has stopped the further natural growth of the parts so that the nose develops unevenly.

Treatment is simple in case of hematoma. The usual cold applications may be made over the nose and its interior kept clean. If the contents seem fluid they may be aspirated and firm bilateral pressure made by some form of tube or tampon, preferably the former. Serous cysts should be incised and their cavities scraped. The incision should be a generous one.

In case of abscess the sooner and the more freely the incision is made, the less liability to destruction of cartilage and deformity. At times it is extremely difficult to keep up proper drainage. Strips of gauze or tubes inserted through the incision will not stay in place. Ernest Waggett has suggested the thrusting through the incision of a knotted loop of horsehair. A seton may also be employed. The abscess cavity should be thoroughly flushed with peroxide solution followed by some alkaline antiseptic, but it should never be packed. In some instances of pus reaccumulation I have opened the cavity with the galvanocautery. In case of unilateral abscess it is of value to tampon the mucosa against that of the opposite side, rubber protective being placed in contact with the mucosa. The cavity is thus obliterated by pressure.

Lennox Browne notes that in the event of extension of the suppuration the point of evacuation should be in the buccal vestibule inside the upper lip above the central incisors, this site constituting that of least resistance. Such a procedure has never been called for in the writer's experience.

This comprises 3 hematomas and 14 abscesses. Of the entire number, 11 were due to trauma, the others to unknown causes. One of the hematomas came on without known cause and the other two were traumatic. There was no history of influenza

in the spontaneous case. One hematoma subsided and the other two went on to suppuration. When hematomas are incised they quickly become infected unless the clots are thoroughly turned out and the cavity cleansed and sealed. The ages of the patients varied from 2 to 41 years. The ages of the patients with hematomas were respectively 2, 8 and 18 years, the first being the case without known cause. In the abscess cases the time elapsing between trauma and appearance of symptoms varied from 5 to 21 days. None of these cases presented any special features. These statistics are defective with regard to deformities. They were all hospital cases and as long as they remained under observation no deformity was apparent. Their later history is unknown.

118 West Sixty-ninth Street.

RENAL AND URETERAL CALCULI COMPLICATING OR SIMULATING APPENDICITIS.*

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PAIN in the lower right quadrant of the abdomen does not usually signify appendicitis, but may be associated with hernia, renal calculus, whether renal or ureteral in location; ovarian invasion, appendicitis, etc. It therefore behooves us, when seeing a patient complaining of pain in this region, to carefully eliminate each of these possibilities, and in so doing "McBurney's point" when present should carry weight only of the greatest elasticity rather than of definite and positive certainty.

During the past few years I have been fortunate in having a series of patients with renal and ureteral calculi, each either complicating or simulating appendicitis. Several of these were so confusing in their symptom complex as to require lengthy observation and the uses of all the modern appliances and physiological, etc., analyses to arrive at a satisfactory diagnosis. In fact, in one of these cases the symptom complex was such that a chronic appendix was diagnosticated by several prominent surgeons and medical men, myself included, and one medical diagnosis only was made of calculus. Each side was correct, as was proven by two subsequent operations (see Case I).

Naturally our difficulty in diagnosis arises only in the slow cases of appendicitis and in the types designated as interval, in which no typical acute attack has ever been evidenced. On the contrary, only those cases of stone presenting slight evidence of impaction, or slight to no marked urinary, etc., symptoms are mistaken for appendicitis. It may be rather a coincidence that in my series of patients all had some definite macroscopical appendicular evidence and evidenced some abdominal history in addition to that of pain and tenderness in the McBurney area.

Diagnosis.—Differential diagnosis in those cases characterized as interval, recurring, or chronic appendicitis is only to be definitely reached by a close urinary examination followed by radiography, and occasionally by ureteral examination with the waxed catheter or bougie. While in the acute variety, when history points to the possibility of calculus, the association possibility must be fully weighed and all factors closely analyzed for a dual disease.

*Read before the Yonkers Practitioners' Club, December 18, 1907, and the Physicians' Club, New York, January 29, 1908.

Pain.—In the great proportion of stone cases, no matter what position the calculus occupies, from the kidney to the ureteral insertion into the bladder, either one or combinations of the following painful areas are present: Testicular, penile, and inner surface of the thigh (G. Crural), while an additional, and this the confusing factor, pain is frequently elicited by pressure in the so-called McBurney area. This latter symptom may be due either to a reflected pain from stone in the hilum (see Case I), or, as in several of the other cases, when the stone is impacted in the pelvic portion of the ureter near the spine of the ischium. This pain is to be differentiated from that of an appendicular one by the fact that rigidity of the abdominal muscles is not usually present. That relaxation of pressure, Blumberg's sign (i.e. suddenly removing the palpating hand) is not followed by the pain usually seen in acute appendicitis. That pressure pain is not usually increased in a line toward the umbilicus, as in appendicitis, but may be so in a line toward the inguinal canal following the course of the ureter. That coughing and deep respiratory pain as seen in appendicitis is unusual in calculus cases.

Recently I removed a gangrenous appendix from a young man twenty-one years old, whose onset symptoms were characteristic of an appendicitis, but whose subsequent ones were typical of stone. He states that he vomited at the onset, but subsequently his pain, which had been umbilical, became testicular, with retraction of the testicle and scrotum, that he had sharp pain in his glans penis, and also complained of some urinary symptoms. Urine analysis was negative, and upon anesthetizing him on the third day of the disease, twelve hours after he was first seen by me, a mass was made out in the line of his right spermatic cord abutting upon Poupart's ligament.

The onset in calculus colic is not usually accompanied by the generalized abdominal, epigastric, nor umbilical pain that we see so often in appendicitis. Vomiting may be present in both, although present in greater frequency in appendicitis, and as a symptom is only a factor when taken with others as corroborative in a chain of symptoms that become positive guide posts to either disease.

Elevation of temperature, usually present (one might say always, if taken by the rectum) in all acute and subacute appendicular invasions, is not present in calculi cases except there be an infective process in the kidney, etc.

Pulse.—This factor can only be relied upon when taken in series with vomiting, temperature, etc. While it is true that marked acceleration usually accompanies acute cases, it is also true that the difficulties in diagnosis arise in the recurring, interval, etc., types, and in these the pulse is relatively of no assistance.

The previous history must be carefully weighed in arriving at a conclusion of either of these diseases. When one obtains a history of previous gastro-enteric difficulties, such as constipation, flatulence, sense of weight in the abdomen after eating, difficulties in digesting certain articles of food to such a degree as to cause the patient to shun them, a sense of weight in the right lower quadrant requiring the occasional placing of the hand to the side to adjust one's self as it is often expressed, then distinct and positive appendicular disease must be considered.

Pain in the back, loin, groin, inner surface of the thigh, urethra, testes and penis in the male, and vulva and urethra in the female, with occasional frequency of urination definitely points to a possible renal calculus.

Finally for the exclusion of appendicitis or for the dual diagnosis of appendicitis and stone, the urine and its channels must be carefully examined. The microscopical evidences in urine analyses that weigh in the diagnosis of possible stone are the presence of blood, crystals of oxalates and urates in excess, and epithelial elements from the hilum and ureters.

Blood may be present in the urine in cases of appendicitis due either to a toxemic nephritis (acute), or to some associated condition, as acute nontoxic and chronic nephritis, or floating kidney, etc. Blood without other renal elements, and in the absence of other pathological lesions of the bladder, urethra, etc., is the best diagnostic factor of stone we have, barring the evidences of a definite shadow in a radiograph or the scratch marks, made by contact with the stone, found upon a waxed ureteral catheter or probe that has been introduced into the ureter.

Cystoscopy.—In stone in the ureter, the cystoscope usually shows a definite and diagnostic change in the mouth of the ureter upon the affected side, characterized by redness and eversion or thickening. Should the stone be in the ureteral orifice it may be seen as a dark object in or protruding from the ureteral opening.

Radiography.—No better diagnostic means is at our disposal than the use of the *x*-ray, as in practically all cases the shadow of the calculus is seen if the patient has been submitted to an expert radiographer. Failures in radiography are due to the subject being old and feeble and suffering from calcareous degeneration. Failure is also likely in too fat subjects and some few cases of uric acid or urate stones, although according to Dr. Caldwell these latter varieties, *i. e.* the uric and urate stones, are usually depicted on the plates in the lean or moderately well developed patients. In the cases where the symptoms point almost definitely to the presence of calculus, and no shadow is seen upon the plate, it is necessary to examine the urinary channels. Cystoscopy for a picture of the ureteral orifice and the use of the waxed catheter or bougie into the ureters.

Stones simulating appendicitis are more likely to be found in that portion of the ureter between the pelvic brim and a point just below the ischial spine, although in Case 1 the spot pain was distinctly McBurney after the appendectomy, and the second *x*-ray showed the stone in the terminal portion of the hilum lodging in the extreme proximal portion of the ureter.

Operation.—The method of approach in calculi considered in this paper will depend upon the position of the stone.

When, as most usual, the stone is in the portion of the ureter stated above, it is a decidedly simple matter to approach it either by the transperitoneal route through a Deaver or Kammerer incision, removing the appendix, palpating the course of the ureter and finding the location of the stone. Then by a narrow extraperitoneal dissection from the outer margin of the incision one rapidly reaches the site of the stone, the ureter and stone being held transperitoneally and pushing upwards. Then through the retroperitoneal dissection the ureter is incised over the stone, the stone expelled and the ureteral wound sutured or not, a small drain put down to the trauma in the ureter. The peritoneum is then sutured and the muscles and skin sutured to the emergence of the drain. There is no necessity of suturing the wound in the ureter, as on several occasions I have left it without suture. In two of such cases absolutely no typical leakage occurred.

I prefer the transperitoneal localizing method as it is rapid; one can hook the fingers under the ureter and push it up without contusing it as is done with the usual instruments required in the retroperitoneal method. In the retroperitoneal method one must make a very long incision and dissect up a large amount of the pelvic and abdominal anatomy before arriving at the site of the stone. When the stone is situated high in the abdomen or is in the hilum of the kidney, the incision is either the oblique lumbar or the incision of Israel. One need not hesitate in either of these operations, provided the renal association is not infective, to explore the appendix through a nick in the peritoneum, and remove it, as it is readily found even in the usual incision of Edebohl for nephrorrhaphy.

I herewith report but three cases, not desiring to burden you by repetition.

Case I.—Mr. W., 42, was seen by me in December, 1903, with Dr. Youngling. At that time he stated that previous to August, 1902, he was well, except say ten years before had had intestinal colics, of which three were severe, and that they would lay him up for a day or so. That in eating late suppers, excess in food and eating cheese would also induce severe intestinal colic.

In August, 1902, during the night he had a sharp pain in the groin. In October, November and December of the same year he had pain in the right iliac fossa directly over the usual appendicular site, covering an area the size of the palm of an ordinary hand. The pains very severe would last from two to three hours, and then subside in the course of a day or two. These were accompanied with nausea and vomiting. He was and is unable to eat foods such as tomatoes, peas, corn, or potatoes. The bowels are regular. Urine had a trace of albumin a year ago; now Dr. Youngling says the urine is negative. Never had any pus or crystalline deposits. Loss in weight dates from January, 1903, at which time he weighed net 204 1-4 pounds. To-day, December 18, 1903, he weighs 160 pounds. He has been dieting. The patient has never been jaundiced. No temperature has even been recorded. An *x*-ray has been taken and was found negative.

He has had various diagnoses made, one of kidney calculus by Dr. Potter, who found a few corpuscles of blood in the urine; others of abdonimal lesion of some unknown variety. Mine was appendicitis with possible calculus.

Examination.—Painful spot in the left side of the body, and pressure pain in the region of his appendix.

Reexamination, January 26, 1904.—Loss of flesh of six pounds in three and a half weeks. Has had pain in the region of both spermatic cords and in the bladder.

February 2.—Submitted to exploration. Deaver incision three and a half inches long was made. Exploration of pelvic and iliac fossæ. Contents on left side normal. In the right iliac fossa numerous well developed bands of old organized adhesions were found. The appendix was buried in dense adhesions and was sharply flexed downwards, inwards, and forwards. The proximal portion was a dense fibrous cord one-eighth to one-sixteenth of an inch in width, while the distal portion was club-shaped and about the normal size, numerous adhesions stretched across the cecum, burying the white line, and plicating thereby the anterior wall of the cecum. These adhesions were liberated, allowing the cecum to assume its normal shape, etc.

The remarkable improvement following this operation, increase in weight, ability to eat all formerly

shunned foods even as early as his third post-operative day, led me to believe that the suspected calculus was a myth.

About three and a half months later he had a terrific lumbar pain extending to his old appendicular area. This recurred several times. Urine again was examined and blood found. He was submitted to Dr. Caldwell for *x*-ray, with instructions to have his bowels thoroughly empty. Upon this examination a distinct shadow was found in the pelvis of his kidney.

June 7, 1904, he was submitted to a second operation. Israel incision for nephrolithotomy was made, etc. Upon exposing the kidney the stone was found fixed in the terminal portion of the hilum or the beginning of the ureter. This was removed by incising the hilum and simply draining without placing any sutures. A satisfactory although stormy convalescence was made. There have been to date no further abdominal pains nor digestive disturbances.

Case II.—John S., physician, seen in January and February, 1898. For months he had been suffering from typical appendicular indigestion or abdominal disturbances. At the present time he had a sharp attack of pain in the lumbar region simulating renal colic, pain radiating down to within the upper margin of Poupart's ligament.

Diagnosis, renal colic. Stone passed in the latter part of February one and a half inches long. On about March 18 or 20 he suffered from severe abdominal pains higher than usual for an appendix, and considerable digestive disturbance. The pain position with previous calculus history aroused the suspicion of another calculus. No further evidence until March 26, when he was seized with a chill in the morning; pain now absolutely typical of appendicitis; vomited; abdominal rigidity; pulse 114 to 118. Temperature at 6 P. M. 103°. Pain and rigidity well marked. Operation for appendicitis at 8 P. M. Appendix gangrenous. Recovery.

Case III.—M. S., 23, operation November 26, 1904. Six months before consulting me he had an abdominal pain which extended to his back. Three days before my seeing him he vomited, had a severe pain in his abdomen, being bedridden for two days. Some digestive disturbances and another attack of pain which has left him with some soreness in the abdomen, extending up into his right kidney. He also has a very sensitive appendicular region, which extends upwards, resembling somewhat that of an appendix deflected upwards. Advised *x*-ray, although urine was said to be negative.

November 26.—*X*-rayed twice, four plates being taken. In one of these plates a small shadow located at a point opposite the ischial spine in the pelvis was taken for a stone in the ureter. Further physical signs of urine analysis proved negative from a standpoint of stone. Appendicular point pressure on this morning was intensified, and still feeling that there was a stone in the ureter or kidney and that the appendix was also involved, an incision was made beginning at the inner portion of the right rectus extending outwards with a very slight curve to and above the anterior superior spine of the ilium. The skin was then retracted in the course of the rectus, the anterior layer of the sheath of the rectus was cut in the line of the skin incision so that a separation of the muscle fibers of the abdominal wall could be produced. The peritoneum and deep fascia were cut in the axis of the rectus. Exploration revealed a hard nodule more like a gland within an inch of the bladder wall. The appendix was congested and very badly bound by adhesions. This was removed and then the retroperitoneal dissection was made and the ureter exposed, the small body proving to be a stone within the last inch of its course. The ureter was incised in its long axis three-sixteenths of an inch, through which a stone was extruded, two stitches were taken in the coats of the ureter with silk, and the peritoneal wound closed after the kidney had been palpated negatively. Then a drain was put in down to the site of the incision of the ureter, and the wound completely sewed with the exception of the point of the drain. The operation was completed in less than an hour.

The stone is seven-sixteenths of an inch long, five-sixteenths of an inch at its widest point, three-sixteenths of an inch thick, and of an irregular mulberry nature in character.

60 West Fifty second Street

RETRODEVIATION OF THE UTERUS AND TREATMENT BY SHORTENING THE ROUND AND SACROUTERINE LIGAMENTS.*

By C. F. KIVLIN, M.D.,

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The uterus is connected posteriorly to the sacrum by the uterosacral ligaments, whose extensible and resistant fibers are attached to the organ at the level of the cervix. Its connections with the bladder in front and the round and broad ligaments at the side preserve its normal position of slight anteflexion, which it retains as a vestige of its fetal condition. The tonicity of the pelvic floor, of which the only weak point is occluded by the normal contractions of the vagina, prevents the abdominal contents from acting in the direction of their weight; the pressure is distributed over the whole surface and the uterus floats as if it were suspended in the midst of the organs of the lower pelvis which act as cushions for it. When the uterus is artificially drawn downward, this state of the pelvic contents becomes very apparent, for up to the moment when the uterosacral ligaments are stretched and oppose any further descent, the organ yields with but gentle resistance, as of a floating body which is slowly drawn under.

When the bladder is full, it pushes the uterus backward, so that its slight curve of anteflexion is obliterated, to be restored and exaggerated when the organ is again emptied. The rectum, when full, pushes the uterus forward and upward in a corresponding manner, though the physiological condition is seldom so pronounced that its action is noticeable. In case of the bladder, however, it is important, especially as social customs which very quickly become organic habits, exaggerate it considerably. There is but one point of attachment where the uterus is at all firmly fixed, namely, that of the posterior ligaments, and as they are inserted where the organ is thinnest, evidently its position may be compared to that of a pyramid balanced upon its point.

When we consider the extensive change of volume, form, and consistence which the uterus undergoes at each pregnancy; the alterations and lesions which may be produced by parturition on the adjacent organs, ligaments, muscles, and serous membrane; and finally the influence which efforts of all sorts may exert on an equilibrium so unstable, we

*Read at a meeting of the Medical Society of Troy and Vicinity, April 2, 1907.

are surprised that uterine displacements are not more frequent.

Retroversion.—Displacement of the uterus backward is far more frequent than any other variety. Every time that the bladder becomes filled the uterus is placed physiologically in a temporary position of retroversion. The tonicity of the broad, round, and uterosacral ligaments which, it must not be forgotten, contain much muscular tissue, ordinarily sustains the uterus in its normal position; but when it has become increased in weight by inflammation and especially by retarded involution after parturition, the ligaments themselves undergo a relaxation, while the uterus is rendered turgid by metritis, and the abnormal position may become permanent under the influence of prolonged dorsal position.

Then the uterus becomes fixed in the new and abnormal situation by adhesions, the result of a local pelvic peritonitis originating from an inflamed tube which may be the antecedent and chief cause of the whole disturbance. A sudden effort or a fall is often the determining cause of the deviation; retroversion is not so common as retroflexion.

Symptoms. When the displacement has occurred suddenly it is often accompanied by acute pain and various nervous phenomena; when it is acquired slowly, its symptoms are often not to be distinguished from those of a metritis or of a circumscribed perimetritis which may have preceded it, and with these we find the uterine syndrome. Sterility is the rule. Vesical and rectal tenesmus may either be very marked or absent altogether. Palpation and touch recognize the position of the cervix forward and that of the fundus looking posteriorly toward the concavity of the sacrum, where it is more or less immobilized. The two segments of the uterus are found in the same straight line.

Diagnosis. Bimanual palpitation with the rectal touch, and the use of the uterine sound if necessary, are the means by which this form of displacement may be recognized. The distinction from retroflexion is found in the fact that there is no angle in the organ between the cervix and fundus. It should not be confounded with fibroma of the posterior wall, with a retrouterine hematocele, tumor of the ovary or tube prolapsed into the cul-de-sac of Douglas, with the focus of parametritis or with a scybalous accumulation. Almost all cases in which any doubt could exist are easily made clear by the uterine sound combined with other means of exploration; this instrument being especially useful where we must differentiate the condition from anterior cervicocorporeal displacement, which, in view of the direction of its anteroposterior axis, is almost necessarily a source of error if we confine our examination to touching the cervix alone.

Retroflexion.—Contrary to the condition in forward deviations, retroflexion seldom exists from childhood or puberty, although it may follow vaginal metritis, habitual constipation, and masturbation (Fritsch). In the immense majority of cases the retroflexion follows a metritis of puerperal origin, and is due to subinvolution of the anterior face where the placenta is inserted.

Considerable importance must also be attributed to the weight of the congested organ, and to the relaxation of the broad and round ligaments which cease to hold the uterus in place anteriorly, while the cervix remains fixed by the more resistant uterosacral ligaments. The flaccidity of its own supports thus allows the uterus to bend backward at the level of the isthmus, impelled by the weight and pressure of the intestines. Retroflexion has been observed to follow simple retroversion and even anteversion; in the latter case this is possible when the seat of the flexion remains soft and movable like a hinge.

The cervix is directed downward and forward, ordinarily approaching the vulva, for it is usually a little lowered. The external os is somewhat patent and its lips are swollen, owing to the disturbance of the venous circulation which results from the curvature of the vessels. It must not be forgotten that the displacement almost always happens in a woman who has had at some time metritis of puerperal origin. The body of the organ occupies the pouch of Douglas.

Adhesions are often present, either perimetritic from exudation into Douglas' pouch, or parametritic from a similar condition about the uterosacral ligaments. According to the opinion of Schultze, relaxation of the folds or ligaments of Douglas under the influence of posterior parametritis plays a great part in the production of all uterine displacements. In order to comprehend the production of retroflexion we must suppose that during the first stages of acute inflammation the ligaments preserve all their resilience in such a way that the cervix becomes fixed; soon after, in the stage in which exudation retreats, the denutrition of the ligaments causes their flaccidity; then, according as the cervix has resisted or has become flexed in the first stage, we have a retroversion or flexion. In other words, version presupposes alteration in the ligaments; flexion an altered condition of both ligaments and uterine parenchyma together. The peritoneal adhesions fix the uterus to the bottom of the rectouterine pouch, by bands often loose, filamentous, and easily torn. At other times they are funicular, lamellated, and firm. The ovaries and tubes are often drawn by the deviation into the cul-de-sac. It is possible that a part of the nervous reflexes, often grave even to the production of paraplegia, which have been noted in cases of retroflexion, are due to the dragging upon the nerves, and not to the problematical compression of the sacral plexus. Salpingitis often coexists, and is the rule in the irreducible cases, the fact that the organ cannot be reduced very frequently depending upon the presence of adhesions between the adnexa and the walls of the pelvis. Exacerbations of the salpingitis are the cause of these adhesions, and also of the hard, often painful nodules that so rapidly appear and disappear about the lateral and posterior surfaces of the retroflexed organ.

Symptoms. The uterine syndrome is present, the reflex nervous phenomena are very well marked and there is sterility. Constipation, with or without tenesmus, is peculiarly obstinate, and Barnes attributes to this the copremia which so often debilitates the patient. The nervous reflexes appear most often as difficulty in walking markedly out of proportion with that caused by simple muscular fatigue, and simulating paraplegia, as multiple neuralgias hysteriform convulsion, excitability, fitful cough, dyspepsia, and incessant vomiting. Simple straightening of the uterus has caused all these symptoms to disappear rapidly. Sterility is usually the sequence of retroflexion, though at any time fecundation may take place and the uterus return to its proper position. If it remains flexed and incarcerates the fetus in the lower pelvis, it produces serious compression symptoms or abortion. If involution proceeds under the most favorable conditions after labor, the uterus may correct its own malposition spontaneously. That pregnancy in such

cases may be a valuable therapeutic measure can not be denied, and yet its importance has been much overestimated. Certain authors describe a post-puerperal retroflexion in which the displacement occurs immediately after confinement. This is often only one of the symptoms of a post-puerperal metritis with retarded involution, and disappears with the latter under appropriate treatment.

Diagnosis. The tumor occupying the posterior cul-de-sac may, by means of bimanual palpation, be easily recognized as the fundus from the absence of resistance in the anterior pouch where the organ is normally placed, and the possibility of feeling the angle of junction between the cervix and the fundus. Rectal touch is here often indispensable. Exploration with the sound removes the last doubt; it should be curved to suit the axis of the uterus, and the cervix seized with tenaculum forceps and drawn downward.

The uterosacral ligaments are flat muscular bands, which extend from the uterus from the level of the internal os, beneath the layers of the rectouterine ligaments, to the sides of the sacrum, opposite the lower borders of the sacroiliac articulation. In the first part of their course they are in relation with the lateral walls of the pouch of Douglas and finally run on either side of the rectum near the junction of the sigmoid flexure and the upper portion of the rectum.

Deaver, in his anatomy, speaks in the above description of the rectouterine ligaments. The false posterior or rectouterine ligaments, which are composed of peritoneum, are the two serous layers, which pass backward from the posterior surface of the uterus and vagina to the upper portion of the rectum, where they are continuous with the peritoneal coat of the rectum. These folds of peritoneum form the lateral boundaries of the pouch of Douglas. External to each of these false ligaments are found the true or muscular uterosacral ligaments, extraperitoneal connective tissue, and anastomosing branches of the uterine and hemorrhoidal vessels. The round ligament extends from the side of the uterus in front of the cornu; it then passes down between the perimetrium and above the ureter and the external iliac vessel to the internal ring, lifting up the peritoneum as it passes to form a slight investment. It then passes through the inguinal canal, having about the same relation as the spermatic cord of the male.

Treatment. In the treatment it is presumed that all lacerations have been corrected by proper plastic work.

Retroflexion. The round ligament operation may be done as advised by Alexander for retroflexion providing one has a simple uncomplicated case; but if adhesions are present the best thing to do is to shorten the round ligament intraabdominally, where adhesions and pathological products can be clearly seen and dealt with in an intelligent and careful manner and the ligaments shortened by folding and suturing of the round ligament upon itself or to the uterine body. The round ligaments are guiding rather than supporting ligaments and for that reason should never be depended upon to correct a retroversion because they do not lift the uterus up, but guide it forward. It is just this mistake that has made the Alexander operation a failure because of lack of proper application or a mistaken diagnosis of the true condition.

Retroversion. Treatment of retroversion by shortening the sacrouterine ligaments is an operation which is not more difficult than many other operations that have been advanced; and it seems logical to suppose from the numerous operations devised that the profession is not satisfied with correction of this condition. Either from want of confidence or from disappointment with the measure of success which various operations offered, until recently little was thought or known of the supportive strength of the sacrouterine ligaments. To Bovée too much praise cannot be given for his masterly and persistent work in this field of gynecology. The operation has been done as a direct procedure by some operators who reach the ligaments through an incision in the posterior vaginal wall, or from above after opening the abdomen. The object is to draw the cervix backward and upward, thereby restoring the tendency of the uterus to incline somewhat forward as in the normal pelvis, since it is in this position the uterus best resists displacement. For my own part I like the abdominal route the better, because one can then treat any complication much easier and with more confidence than one can from the vagina. A median incision about 2 1-2 or 3 inches is made. The bowels are cleared from the field of procedure. The uterus is then raised from the position with tenaculum and drawn well forward and if the field of operation is clear the sacrouterine ligaments will stand out on each side of the lateral boundary of Douglas' cul-de-sac. The ligament of the left side is attacked by a long chromatized catgut suture. The needle pierces the uterus at the origin of the ligaments, coming out externally on the cul-de-sac side of the ligament. Then grasping with another sweep of the needle enough of the ligament to fold on its origin, with patience one can usually grasp or fold enough to make the necessary shortening; then with one or two reinforcing turns of the needle the operation is finished on that side except that the suture should be left in the needle and clamped outside the abdomen.

The right ligament is treated in the same way as the left, the suture being left long. A suture is then taken in each hand, drawn tight to see if sufficient shortening is effected or if the ligament is shortened on one side more than on the other. When both have been shortened the proper amount for correcting the position, assistant and operator tie the ligaments on their respective sides at the same time.

In the case of both retroversion and retroflexion one has to shorten both the sacrouterine and the round ligaments, the round ligament operation for correction of the retroflexion, and the sacrouterine operation for relief of the retroversion. The combination operation for both displacements is probably the best operation that is offered to the profession at the present time.

1826 Fifth Avenue.

TRAUMATIC RUPTURE OF THE SPLEEN WITH REPORT OF A CASE.*

By V. E. Watkins, M.D.

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Rupture of the spleen is of comparatively rare occurrence. It may happen in the normal organ but is relatively much more frequent in the enlarged spleen of malaria, typhoid fever, or the pernicious anemias. If the organ is already enlarged by disease, rupture may appear to be spontaneous, but it is believed that a slight violence may have been overlooked in such cases. Malarial spleens are especially prone to rupture, and for this reason the

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condition is not infrequently met with in the tropics. Playfair is reported to have seen twenty cases during a residence of two and one-half years in the East Indies. Major Woodruff of the Medical Corps of the Army has reported the case of a Filipino boy who fell while running and died as the result of rupture of an enlarged malarial spleen.[1] In the normal spleen, on the other hand, a considerable degree of violence is required to produce a rupture, such as severe falls or blows upon the abdomen, or crushing of the body by great weight as the passing of a vehicle over it. The organ may be torn in various directions and the tears may be multiple. Usually the capsule as well as the splenic substance is torn and the escaping blood is poured into the abdominal cavity, but the capsule may remain intact with rupture of the pulp alone, the accompanying hemorrhage being into the organ itself. Rupture of the normal spleen, on account of the great violence necessary for its production, is very prone to be associated with the rupture of other abdominal viscera or fracture of the ribs on the left side.

The symptoms are essentially those of an abdominal injury associated with internal hemorrhage. The shock is pronounced, as evidenced by the anxious facies, the pallor, feeble and rapid pulse, and collapse. Consciousness is usually retained in all abdominal injuries.

The pain is severe and may be more pronounced in the splenic region. If the case is seen early before the effusion of blood fills the peritoneal cavity the dullness can be localized in the left flank, otherwise it will be general over the abdomen. An unusually pronounced contraction of all the abdominal muscles has been reported as a diagnostic sign, but it does not occur in all cases and cannot be considered pathognomonic. In fact it may not be more marked than in other abdominal conditions. Vomiting may or may not occur.

From this résumé of the symptoms it will be seen that they are essentially those of internal hemorrhage, and the diagnosis is usually not made until after abdominal section. The symptoms are obscure so far as enabling us to differentiate whether the spleen or some other abdominal viscus is ruptured. However, there should be no difficulty in diagnosing the existence of hemorrhage into the abdominal cavity, and when this condition is recognized, abdominal section is indicated. The incision should be made over the region of greatest dullness, if this can be determined. If percussion elicits a note of higher pitch in one flank than in the other, a valuable hint as to the source of hemorrhage has been obtained. Should the hemorrhage be sufficiently severe to give a percussion note of equal dullness in all regions the indication is to make the incision in the middle line.

The treatment is essentially surgical, the object being the control of hemorrhage, and all authorities are agreed that this end is most certainly accomplished by splenectomy. The mortality following removal of the healthy spleen for rupture is about 40 per cent., whereas that of non-operative treatment is probably 100 per cent. Ligation of the bleeding vessels has been recommended, but is invariably followed, in animal experiments, by necrosis. Control of the hemorrhage by suture has been advised and has succeeded in some cases, but in the large majority the sutures have failed to control the hemorrhage and the patients have died. Tamponade is certainly a quicker and better method than suture, according to the results thus far published, yet some authorities reject this treatment as suitable only when the tear is small, or in cases in which the condition of the patient necessitates a speedy ending of the operation, or in those in which extensive adhesions make the removal of the spleen too long an operation.

Flammer[2] reports three cases of splenectomy for rupture, with two deaths. One of these patients was not operated on until the third day, and besides the rupture of the spleen there were fractures of four ribs and a pancreatic rupture. In the other fatal case operation was not performed until the fifth day and was followed by peritonitis and double pneumonia. These fatal results are arguments for prompt surgical treatment rather than against operation. Whatever operation is decided upon it should be done promptly, expeditiously, and with every expedient calculated to relieve and prevent shock.

The question naturally arises what are the effects upon the animal economy of removal of the spleen? According to Ehrlich, to whom we owe much of our knowledge concerning the blood, there is a great increase in the number of leucocytes after extirpation of the organ, with a marked hypertrophy of the lymph glands of the body. These blood changes do not extend beyond a period of four or five months. There is no evidence that the removal of the spleen has been followed by a death which could be attributed to the loss of the organ. Many patients have lived for years in good health without it, one for twenty-three years.

Gerrard[3] cites a case of rupture of the spleen recovering under medical treatment. A four-year-old Chinese boy was run over by a carriage, the wheel passing across the lower part of the chest. The symptoms were hemoptysis with frothy expectoration, rapid and feeble pulse, and shock. There was dullness over the lower portion of the left chest and in both flanks. The patient's condition was not favorable for abdominal section. The treatment consisted of the administration of ten-drop doses of fluid extract of ergot and the same quantity of tincture of opium every hour, until the patient was well under the influence of the opium. Ice was applied to the left chest and abdomen and an eight ounce saline enema was administered every hour. Fluid by mouth was given four and one half hours after the accident. The patient made a good recovery. The dullness in the right side of the abdomen disappeared in five days, but the area of splenic dullness was still enlarged 24 days after accident. Many surgeons are inclined to question the diagnosis of rupture of a viscus when a patient recovers from a severe abdominal injury without operation.

The present case is as follows: E. P., a civilian, age 23 years, was at work on the morning of May 6, 1907, with two other men, on a scaffolding about nineteen feet high, putting in place a lintel weighing about 300 pounds. The staging broke and the men were all thrown to the ground. The patient was found pinioned to the side of the building by the lintel. He was suffering severely from shock and was admitted to the Post Hospital, Plattsburg Barracks, N. Y., at 11 A. M.. Examination elicited the following points: shock pronounced; pulse rapid and feeble; respirations rather shallow and hurried; expression of face anxious; moderate distention of the abdomen; severe pain in the abdomen, particularly on left side, and aggravated by pressure; rigidity of the abdominal muscles slightly greater on left side; there was marked dullness on percussion over the splenic area and extending well down into the left flank. A diagnosis of hemorrhage into the abdominal cavity was made, and laparotomy performed at 4 P. M.,

about six hours after the accident. The incision was made over the area of dullness and extended from the lower costal border on the left side downward to a point midway between the umbilicus and the anterior superior spine of the ilium. Upon opening the abdominal cavity a large quantity of fluid blood and clots were found. Palpation of the spleen showed a tear extending deeply into the anterior border of the organ. The patient at this time was in such a precarious condition that no further operative procedures were warranted, and the use of tampons was decided upon. The fluid blood and clots were removed from the abdominal cavity and four thick strips of iodoform gauze were packed tightly into the torn spleen, and the abdominal incision was partially closed at the lower end. The bleeding was profuse for several hours after the operation, saturating the dressings and soaking the draw sheet under the patient.

The next morning, May 7, the bleeding from the wound was considerably less, but still alarming, the pulse was very rapid and feeble, expression anxious, respiration shallow, thirst intense; there was great restlessness and the extremities were cold—the symptoms of exsanguination. The abdomen was greatly distended and painful, and vomiting was almost incessant. Morphine hypodermically in one-eighth grain doses was used to control pain and restlessness. Normal salt solution was administered per rectum every two hours, with an ice bag to the abdomen. On May 8 the patient's condition was much improved. The hemorrhage had stopped, the bowels moved voluntarily, and the tympanites was less. Vomiting continued, but was not so frequent as on the day before. The pulse was of better quality and not so rapid. A nutrient enema was given every four hours. On May 9 the improvement was more marked; the bowels were quite loose, the pulse good, and the vomiting entirely stopped. During the afternoon milk was given by mouth in teaspoonful quantities and retained. On May 10 the patient remarked that he felt good, the tympanites had about subsided, and milk was retained. Following the operation the temperature reached 100° in the axilla and was normal on the evening of the 12th. The pulse followed the normal ratio of the temperature curve. On the 13th, one week after operation, the four tampons were removed from the abdominal cavity, under chloroform anesthesia. Only a slight oozing followed. The abdominal wound closed by granulation and the patient left the hospital June 19. He returned a few days afterward with a large ventral hernia for which he declined operation.

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RELAPSING FEVER WITH A REPORT OF TWO CASES.

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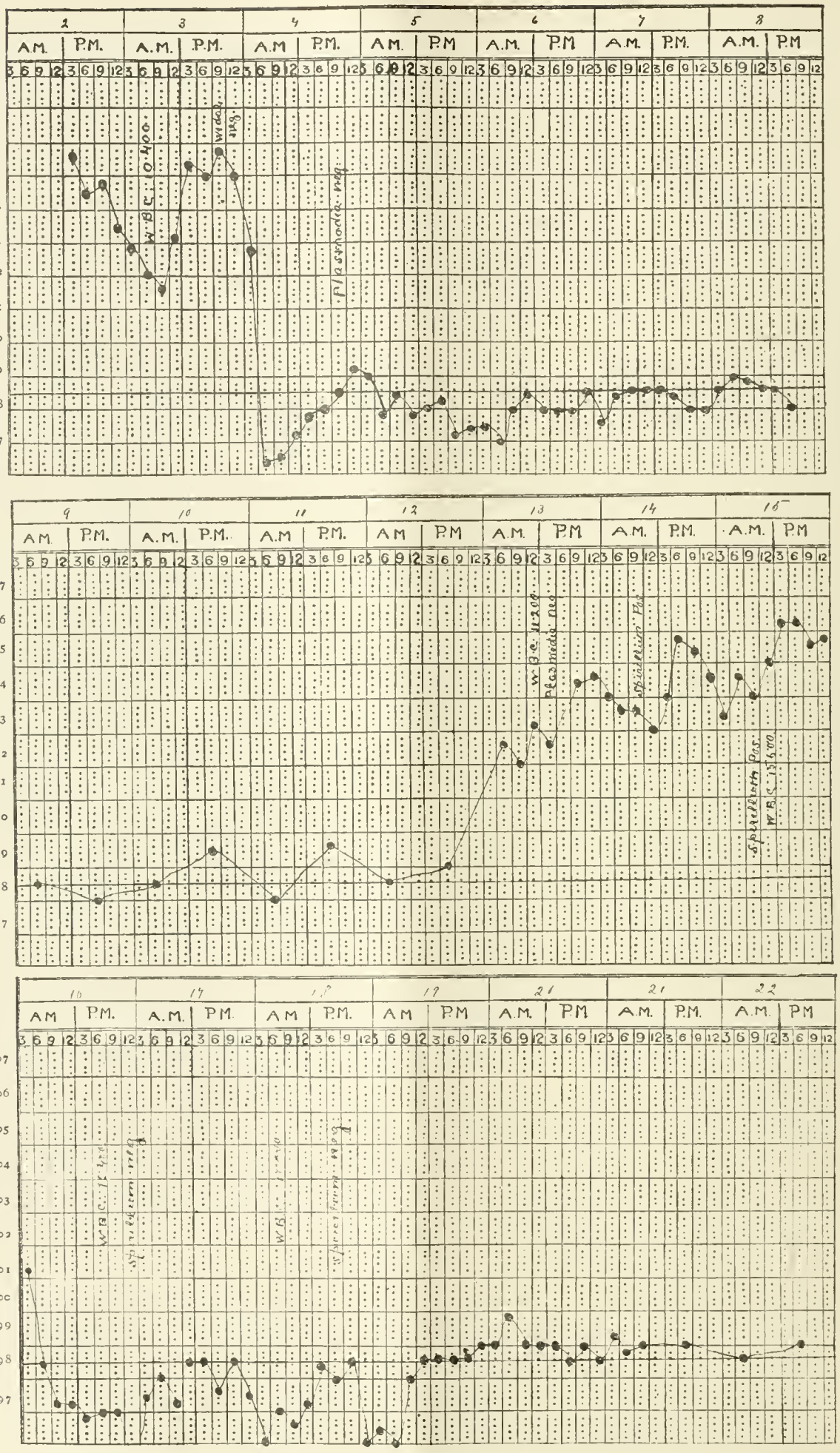
Although relapsing fever has been known since the days of Hippocrates who observed an epidemic in the Island of Thasos, it was not until 1873 that the true cause of this disease was made known. In that year Obermeier announced his discovery of the presence of a minute parasite in the blood of patients suffering from relapsing fever. His observations were subsequently confirmed by Carter in 1876, and by numerous observers in various parts of the world. It is the first infection in which a microorganism was found to be causal. This discovery has thrown a flood of light upon the etiology of relapsing fever, and is one of the most significant facts, with reference to the etiology of infectious diseases in general, which have been brought to light by modern microscopical researches. Strange to say, no references to this fever seem to have been made from the time of Hippocrates until Strother, in 1729, described an epidemic in London of a disease with relapses. Rutty in 1739, described its occurrence in Dublin. Since then, similar observations of epidemics in Ireland and Scotland were noted toward the end of the 18th and beginning of the 19th centuries. In 1801, 1817 and 1819, Barker, and in 1826 Obrein and Graves described similar epidemics. For some time this disease was confounded with typhoid and typhus fevers. Henderson in 1842, Jenner in 1849 and 1851, and Murchison in 1862, had an opportunity to make a thorough study of the disease, during epidemics in these years in England, Ireland, and Scotland, and as a result of their labors it was recognized as a disease independent of typhoid and typhus. All the epidemics occurring in Great Britain emanated from Ireland.

The disease next appeared in Russia; in 1833 in Odessa; in 1840-1841 in Moscow. In 1863-1865 a great epidemic raged in St. Petersburg; in 1865 in Siberia, reappearing later in these and other places in Russia. It occurred extensively among the soldiers in the Russo-Turkish war. In Germany it first appeared in Silesia in epidemic form, in 1847 to 1848. In 1868-1873 large epidemics occurred throughout Germany and it was during these epidemics that Obermeier discovered the spirochetes in the blood. The disease has also frequented nearly all of the other European countries. In India it also appeared in epidemics, the most important of which was in Bombay and vicinity in 1876 and 1878. This epidemic permitted Carter, who had made a careful study of this disease, to confirm the observation of Obermeier with reference to the spirillum. About the year 1850 Griesinger observed in Egypt, particularly in Cairo, relapsing fever in connection with bilious-typhoid and typhus. Engel's studies in Cairo in 1884 also corroborated the observations of Obermeier. In the United States it was first heard of in Philadelphia, where it was imported by Irish immigrants in 1844, and recognized by Clymer. In 1847 it was observed in New York City, and from here spread to neighboring towns. In 1850 Flint saw some cases in Buffalo. in 1870 it reappeared in Philadelphia and again at the same time in New York City, always among Irish immigrants. During the hot summer of 1870 five thousand cases were reported in Philadelphia and New York City and the neighboring towns. In 1874 it appeared in California, but from this time until 1905 this country was free from relapsing fever, when Carlisle reported two cases in Bellevue Hospital.

The spirochetes are wavy, motile fibrils tapering to a point varying in length from one-half to ten times the diameter of a red blood cell. They are homogeneous protoplasmic masses in which no structure has been observed; the number of turns varies from eight to twenty. The organisms are not found in any fluid of the body except the blood, and here only immediately before, and especially during the febrile stage of the disease. Some observers, among them Heidenreich, have noted their appear-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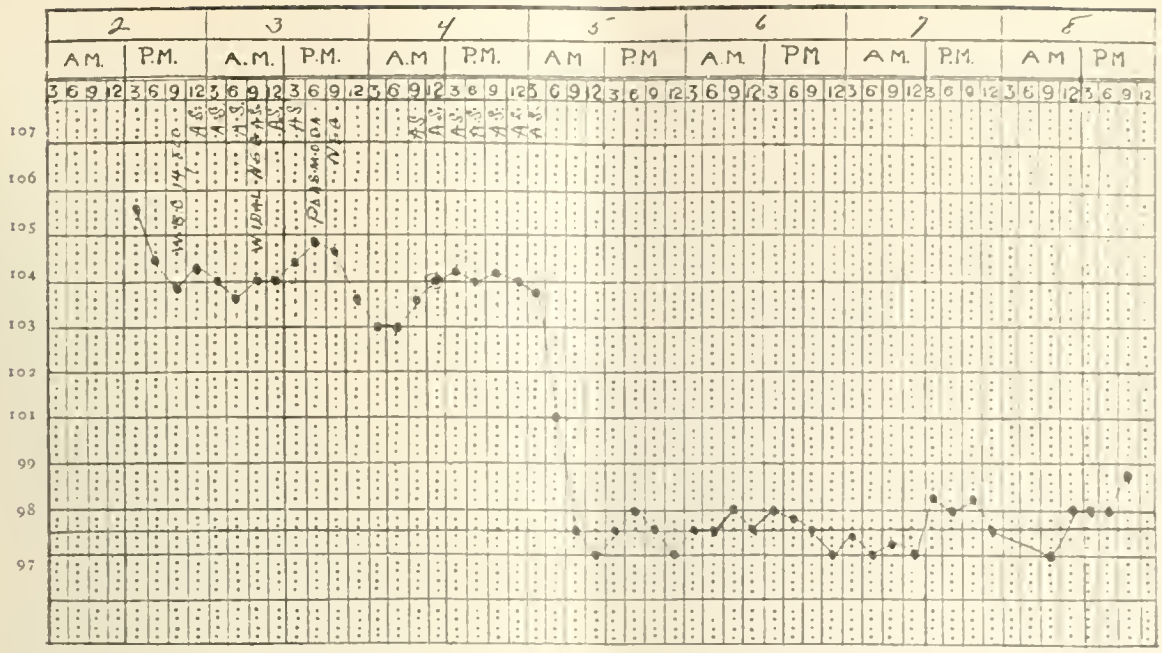
W.B.C. 10,400
Widal neg.
Plasmodia neg.
W.B.C. 11,200
Plasmodia neg.
Malaria Pos.
Spirillum Pos.
W.B.C. 15,600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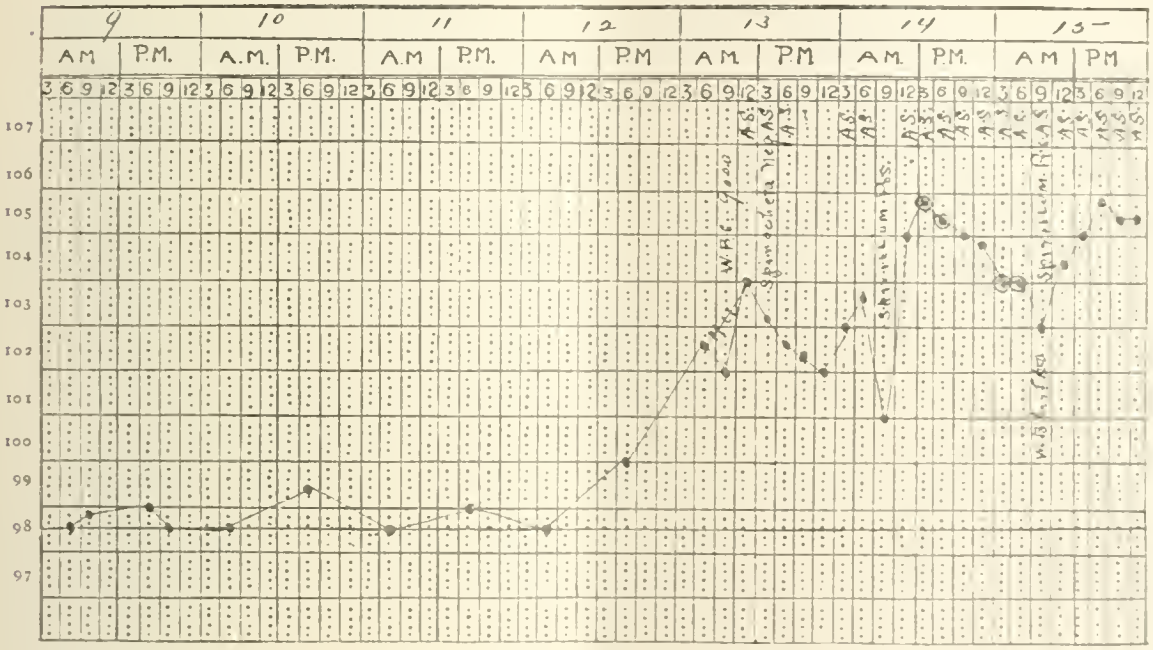
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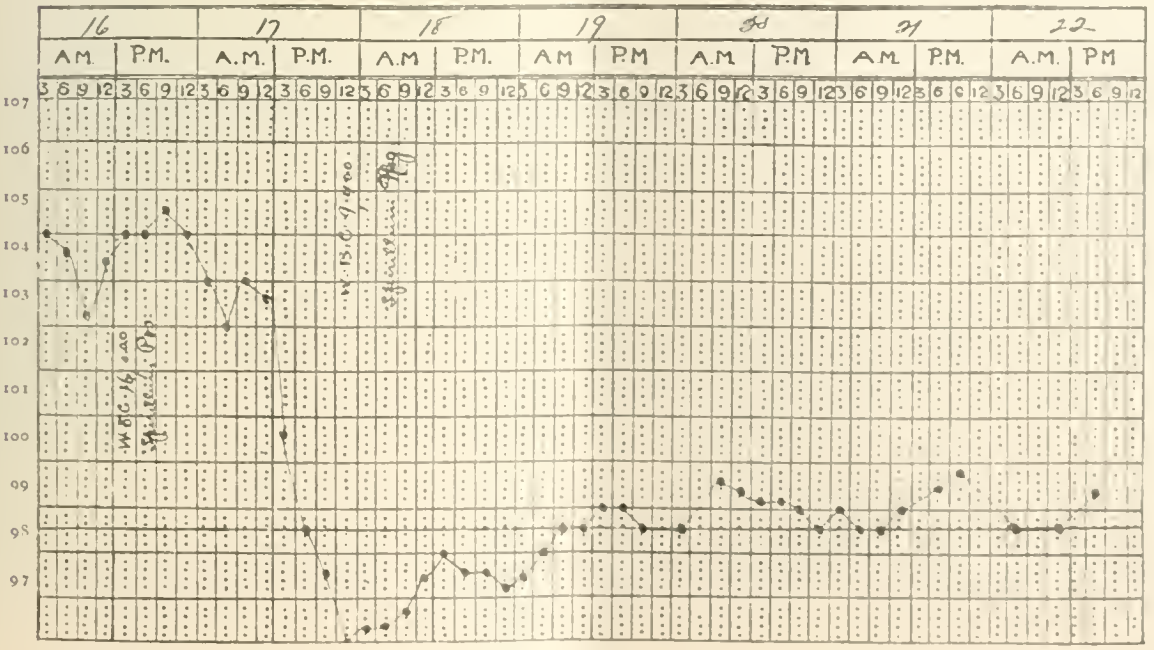
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ance in the blood, several hours to a day before the beginning of a paroxysm. As soon as the crisis approaches, the organisms lose their motility and disappear from the blood. Only in exceptional cases has their presence been noted in the blood during the apyretic period. The number of spirochetes in the blood on successive days of the paroxysms is steadily on the increase, until it reaches the maximum 24 hours or so before the crisis occurs, from which time the number of organisms begins to decrease, so that within a half hour after the beginning of sweats, the spirochetes have completely disappeared from the blood.

The probable cause of the disappearance of the spirilla from the blood during the apyrexial stage is as yet unexplained. Metchnikoff believes that they are largely, if not altogether, destroyed by the phagocytes which engulf them, and carry them to the spleen. This organ becomes enlarged and is the seat of the chief pathological changes in those cases in which death from the disease occurs. It is then seen to be filled with white blood cells containing the parasites.

Ivanoff and Gabritchewsky believe that some substances appear in the blood that possess parasiticidal powers, which destroy the spirochetes. If we add to blood containing spirochetes, some blood taken from a patient who has just emerged from a paroxysm, we shall see in a period of from one to four hours, all the spirochetes become immobile, change form, and die.

Ivanoff inoculated with blood taken from a patient suffering from relapsing fever, some monkeys, among which were several that had previously received an injection under the skin of blood taken from a person who had just passed through an attack. While the control animals exhibited in a few days the characteristic symptoms of the disease, those which had received the preventive inoculation escaped with a fever of moderate duration, unaccompanied by the presence of spirilla in the blood.

Metchnikoff, according to his theory of the disappearance of the spirilla from the blood, as mentioned above, gives the following explanation as to the cause of the relapse. He has shown that after the parasites have disappeared from the blood, masses of them may still be present in the spleen, where they are mostly enclosed in cells many of which seem to be undergoing degeneration, and it is possible that the contained bacilli may then escape in a condition capable of causing a relapse, or those microbes which have not been engulfed may be responsible for the second febrile attack.

As yet, no media have been discovered suitable for the cultivation of the spirochetes, nor have we as yet discovered their mode of reproduction, whether by segmentation, sporulation, or otherwise, although recent researches tend to show that it most likely occurs by transverse division.

As yet, the exact mode of transmission of this disease is not known; neither food nor water, air, nor earth, can be held responsible *per se* for the transmission of relapsing fever. Poor hygienic surroundings predispose to attacks. It is probable that the ordinary parasites of man play a more or less important rôle in spreading the contagion by carrying the blood from one to another. The contagiousness of the disease is quite marked, 40,000 persons having been attacked in Dublin in 1847-1848. Inoculation experiments in man have proven successful. Metchutkoffsky of Odessa, in 1873, had an opportunity to inoculate a number of human beings with the disease. Inoculation experiments in animals have been negative, except for monkeys and recently in mice and rats. Ticktin examined bedbugs which had bitten man and monkeys with the disease, and found that the blood of these bugs contained spirochetes.

One attack does not confer immunity. Christison suffered from three attacks in fifteen months. According to Metchutkoffsky, immunity lasts for two weeks only. Carter and others were able to produce a second infection in monkeys.

On August 2nd, 1907, two patients, a mother and daughter, were admitted to Beth Israel Hospital in Dr. Barsky's service, with a diagnosis of typhoid fever.

The mother gave the following history: Age 40, born in Russia. Housewife. Family, personal, and past history have no bearing on present trouble.

The present illness began suddenly two days before admission, the patient having felt perfectly well until the noon of that day, when she had a chill followed by profuse sweating and very high fever; severe headache, referred mainly to the occipit and vertex; anorexia; nausea and vomiting; general muscular pains, especially in muscles of back and limbs; general weakness; constipation; abdominal pain and insomnia; no epistaxis; no respiratory, renal or cardiac symptoms. The daughter, 9 years old, school-girl, gave a history almost identical with that of her mother, but her disease was not so severe and began one day earlier.

The following is of etiological importance in our cases: W. S., a distant relative coming from Russia, boarded a transatlantic steamer in Antwerp, on which he was taken ill when four days out, with following symptoms: High fever; anorexia; nausea; vomiting; sweats; restlessness; headache and general muscular pains, which were attributed to seasickness. He was sick five days, felt well for the last two days of his journey, landed in this city, and stayed with our patients. After remaining well for six days, he again took sick with symptoms similar to above; was sick for five days and then left their house. On the following day the daughter, and two days later the mother became sick.

Case I.—On admission, the mother's rectal temperature was 105.6°, pulse 138, respiration 32. General condition fair, fairly well nourished, no eruption; skin hot and dry; cheeks flushed; tongue dry and heavily coated with a grayish fur; throat examination negative; glands palpable in axilla and groin; lungs showed the presence of a few sibilant and sonorous râles. The heart sounds were somewhat weak, regular, no murmurs, no accentuations. The pulse very rapid; regular in force and frequency; of low tension and with a slight thickening of the arterial walls. The abdomen was distended and tympanitic, tender in the splenic area; no rigidity; in liver dullness began in the fourth space, flatness in the fifth space, extending to just below the free border of the ribs; edge indistinctly palpable; the spleen was palpable one finger's breadth below the costal border, and was tender. There was marked tenderness in the calves of the legs. Blood examination: White corpuscles, 14,800; polynuclears 74 per cent.; large lymphocytes 10 per cent., small lymphocytes, 16 per cent.; examination for plasmodia negative; widal negative. Urine: Specific gravity 1006; acid; heavy trace of albumin; no sugar; no diazo; few granular casts.

August 5: For the past two days, the temperature has ranged between 103° and 105°, pulse between 120 and 134. General condition about same as on day of admission. Spleen and liver have increased in size. At 3 A. M. the temperature dropped

from 104° to 98°, accompanied by drenching sweats, general abdominal pains, and profuse diarrhea. The pulse dropped from 136 to 100.

August 6: Patient felt very much improved.

August 8: Patient well enough to be out of bed. Temperature remained normal. Pulse averaged about 80. The leucocyte count had gone down from 14,800 to 8,200. Widal, still negative.

August 12. After the temperature had remained normal for seven days, it gradually began to ascend this morning, reaching 102° in the evening. This rise was accompanied by chilly sensations, headache, pain in the abdomen and lower extremities, and severe tenderness in the calves. Restlessness and nausea were marked. The above symptoms compelled the patient to take to bed.

August 13: To-day, temperature reached 104°, pulse rose from 84 to 116, and the above symptoms became more intense. It was at this time that relapsing fever suggested itself, and a thorough search for spirochetes was made, and to our great surprise, spirilla in large numbers were found in the blood of both mother and daughter.

August 14: This morning the temperature dropped from 104° to 101° and rose in the evening to 106°. The woman vomited everything taken by the mouth. Tongue dry and coated; headache very severe; prostration marked; pain and tenderness in calves, a prominent symptom. Liver and spleen had increased in size. Spirochetes present in large numbers. White blood count 18,000.

August 17: At 9 A. M. the temperature began to drop and by midnight, it had fallen from 104° to 96°, accompanied by a distinct chill of 20 minutes' duration, during which the patient vomited, had profuse diarrhea, and was markedly delirious. The chill was followed by profuse perspiration. Blood examination that morning showed the presence of spirochetes; in the evening they had disappeared from the blood.

August 18: On this day, the patient felt much better; temperature between 97° and 98°; all symptoms markedly improved; white blood count 9,400; spirochetes not found in the blood; liver and spleen diminished in size.

August 21: General condition much improved; patient out of bed; put on a full diet; all symptoms disappeared; liver and spleen not palpable.

August 31: Patient discharged entirely cured.

CASE II.—On admission, rectal temperature was 105.4°; pulse 128, respiration 36. General condition fair; fairly well nourished, but anemic; face flushed; no eruptions; no jaundice; tongue moist and heavily coated with a whitish fur; pharynx and tonsils congested; glands palpable in axillary, submaxillary, and inguinal regions. Lungs negative. Heart showed the presence of a double mitral murmur. Pulse small, regular in force and frequency; fair tension. Liver dullness begins at fifth rib; flatness at sixth rib and extends to just below the free border of the ribs, where the edge is palpable. The spleen is palpable one finger's breadth below the free border. Blood examination.—Red blood count 4,000,000; hemoglobin 70 per cent.; white blood count 12,000; polynuclears 51 per cent; large lymphocytes 18 per cent.; small lymphocytes 31 per cent.; widal negative; plasmodia negative; urine showed a faint trace of albumin.

August 4: After remaining in the vicinity of 106° for the past twenty-four hours, the temperature began to drop last night at 9 o'clock, and by six o'clock this morning had fallen to 96°, a drop of 10 degrees. The pulse decreased in frequency from 140 to 84, and the respirations from 32 to 24. Accompanying this was a slight chill, profuse perspiration; retention of urine; marked restlessness. In the afternoon of the same day the patient felt very much improved.

August 7: For the past three days, the temperature has ranged between 97° and 98°; general condition very much improved; no pain or tenderness anywhere; spleen still palpable; the patient is out of bed.

August 12: After the temperature had remained normal for the past eight days, it gradually began to rise this morning and reached 102° in the evening.

August 13: To-day the temperature reached 104.8°; pulse rose from 84 to 128; at the same time the girl experienced a feeling of malaise, severe headache; anorexia and indefinite pains throughout the entire body. The above symptoms compelled her to take to bed. Spleen and liver were palpable. As mentioned before, it was at this time that relapsing fever suggested itself and spirochætæ were found in the blood.

August 14: For past two days, temperature ranged between 104° and 106.4°; the symptoms were the same as on previous days. Liver and spleen had increased in size. At 6 o'clock this evening the temperature began to fall, and by the following night it had dropped to 95°, a drop of 11.5°. The pulse slowed down from 132 to 72. Accompanying the drop, the patient felt very cold, perspired profusely, was nauseated and very restless. Liver and spleen still enlarged.

August 17 and 18: For the past two days the temperature has remained subnormal; general condition much improved; spleen and liver decreasing in size. Weakness is the only complaint.

August 21: Temperature normal; liver not palpable; spleen can be felt just below free border of ribs.

August 31: Discharged perfectly cured.

Treatment:

The treatment can be summed up in a very few words: 1. Isolation; 2. Symptomatic. There is no drug which in any way influences the course of the disease. The symptoms are treated as they arise: (*a*) Fever—as in typhoid; (*b*) Diarrhea, bismuth, tannigen, and opium; (*c*) Pains, phenacetin; antipyrin; chloral; massage; (*d*) Headaches will be relieved by above drugs aided by an ice-cap. 3: Specific. In 1895 Gabritschewsky produced a serum by injecting blood containing spirilla into horses. He tested this serum upon monkeys with success. In 1896-1897, Lowenthal used the serum in Moscow, treating 152 patients with excellent results.

I take this opportunity to thank Dr. J. Barsky, Visiting Physician to Beth Israel Hospital, for permitting me to publish these cases, and the members of the house staff for their hearty cooperation in working up these cases.

An Unusual Distinction.—In a small New Jersey village a centenarian has been discovered who has a great granddaughter who is herself a great grandmother, that is, she is the head of seven living generations. She lives with her daughter of eighty-four and a granddaughter of sixty-seven.

Mortality of Bull Fighting.—During the past year deaths and injuries among the Spanish bull fighters have been unusually numerous and in all eighty-two of the profession, including nearly all of the best known espadas, have received more or less severe injuries. The mortality among the animals has also been exceptional, 2,980 bulls and 2,720 horses having been sacrificed in this way.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THERAPEUTIC OPTIMISM.

"GOOD practitioners are always found to be men entertaining the greatest confidence in the power of medicines." This truism was uttered by Roberts Bartholow in an address delivered before the Medical and Surgical Faculty of Maryland in 1876. Unfortunately for the science of therapeutics this great teacher died and his teachings were nearly forgotten. Twenty years later a prominent member of the same society was preaching the doctrine of black nihilism, of expectant treatment, and of self-limited diseases. He was a good pathologist and an acute observer, though self-confessedly a poor practitioner, but he possessed unusual power of literary expression through which he attracted so large a following that for a time it seemed that America would wrest from Germany the ignoble distinction of being the home of therapeutic pessimism. This preacher of despair did not die, but he has been translated, and only now and then a feeble echo of his pessimistic aphorisms is carried to us by cable and wireless telegraphy; but it is now *vox et præterea nihil*, the blight on American medicine is removed, and once more the voice of therapeutic reason and common sense is heard and is listened to.

At the recent meeting of the Medical Society of the State of New York Dr. A. Jacobi delivered an address, entitled "Nihilism and Drugs" (*New York State Journal of Medicine*, February, 1908), in which he sounded a note of optimism most cheering to those who believe that the mission of medicine is to relieve suffering and save life, and that the study of pathology is only a means to an end, and not the sum and substance of medical endeavor. In his opening, the speaker referred to Osler's recent address to London students in which he warned them to "be skeptical of the pharmacopeia" and said that "he is the best doctor who knows the worthlessness of most drugs." Dr. Jacobi charitably endeavored to explain away these smart sayings by interpreting "skeptical" in the sense of "examine and test," but we suspect he knew and knew that his hearers knew that the Regius Professor meant just what he said, and that he is still the incorrigible nihilist who continues to lay the blame upon drugs for his inability to use them.

Expectant treatment, Dr. Jacobi said, is too often a compound of indolence and ignorance, and he cited numerous illustrative cases where patients who had been condemned to death or a protracted invalidism were saved and restored to health by timely medication. "Expectant treatment! Verily I tell you, it is malpractice, which shall be punished on account of neglecting what nature and sound therapeutics furnish. . . . Expectant treatment is no treatment. It is the sin of omission, which not infrequently rises to the dignity of a crime." These words are the words of wisdom and of truth; they should be printed on tablets in letters of gold to remind every practitioner of his duty whenever he is tempted to shirk it. Disease, whether "self-limited" or unlimited, is the enemy which the physician is sworn to attack, and he is a coward or a weakling who skulks in his tent while the enemy is gaining force.

There is a good old-fashioned ring to this address of Dr. Jacobi which will bring cheer and encouragement to the practitioner who has gone his way treating the sick as he was taught in his early days of long ago, giving homely drugs and plenty of them, when need there was, but stealthily almost lest he should incur the ridicule of his younger brethren indoctrinated with therapeutic skepticism and scornful of the "unscientific" methods of the past. Digitalis, strophanthus, spartein, camphor, caffeine, strychnine, ammonia, musk in pneumonia; extract of belladonna in doses of half a grain to a child of four years suffering from enuresis; one-fourth of a grain a day in divided doses of corrosive sublimate to an infant with diphtheria; daily doses of two drams of iodide of potassium to a baby with tuberculous meningitis; opium in doses of one-fortieth to one-thirtieth of a grain every two hours to a child a year old suffering from enteritis; emetics, purges—these are some of the drugs which the speaker had the courage to declare he used when he met the indications for them, and used with good effect. The prejudice against polypharmacy—shotgun prescribing the one-drug man or the no-drug man calls it—was also combated. "There are those," Dr. Jacobi said, "who dislike a prescription blank filled with three or four remedies, but there are also those who dislike the looks of a patient whose many ailments should not have to wait for the gradual and slowly conservative administration of drugs that could as well act simultaneously and conjointly, and better when conjointly. . . . The disease of an adult has a long anamnesis and the residue of previous illnesses. By insisting upon giving a single remedy, you may care for and cure the last affection, and let your patient slip away from you under expectant treatment."

Does the man who preaches nihilism ever think of the consequences of his teaching? Does he ever think that the men, his equals at least in intelligence and honesty, who believe in the power of drugs and who claim to get good results from their use of them, may possibly be right? Does he ever admit to himself, in signing his death certificates, that his failure may be due to ignorance and a lack of ability to use the tools of his calling? Drugs may not always produce the results expected; they may, when injudiciously employed, even do harm; there are few specifics, and these few do not always cure. But they are potent weapons, in skilled hands, in the combat with disease, and the man who despises them or knows not how to use

them, has no right to call himself a physician or to attempt to practise medicine. There is a field for his abilities in the laboratory, but he should take his hands off the sick, and not abuse the trust they place in him by abandoning them to the processes of nature which are so often misdirected. Dr. Jacobi's address is an eloquent protest against this baleful doctrine of the inefficiency of drugs. It will probably fail to break down the conceit of the therapeutic nihilist—may his shadow grow less—but we commend its careful study to the young practitioner whose first unsuccessful essays in treatment may tempt him to regard all drugs as useless and the materia medica as a relic of superstition.

THE TREATMENT OF GASTRIC ULCER.

At a recent meeting of the Leeds and West Riding Medico-Chirurgical Society held at Leeds (*Lancet*, February 15, 1908), a discussion on this subject was conducted by Dr. A. G. Barrs and Mr. B. G. A. Moynihan. This discussion was notable for the reason that Dr. Barrs propounded some iconoclastic views as regards the diet of patients suffering from gastric ulcer. Although, of course, in favor of a simple diet, he never ordered milk for such patients, and he utterly repudiated the old practice of saying to a patient with gastric ulcer, "A milk diet or your life." He wished one could see the same reduction in the milk bills of the hospitals as one had seen in recent years in their alcohol bills. He could not understand how members of the profession could go on countenancing milk drinking in bulk by adult patients and the public at large, knowing as they did that it was probably the surest way of introducing the tubercle bacillus as well as other pathogenic organisms into their bodies. He considered that bulk was a much more important matter in the food of a patient suffering from gastric ulcer than kind, and small meals of meat and stale bread—if these could be taken without pain, but not unless—along with water in any reasonable quantity to drink, was the food that he usually suggested; but if there were vomiting, no food should be given, only plain, fresh water to drink. Dr. Barrs likewise inveighed in strong terms against the employment in the dietary of a patient with gastric ulcer of any form of artificial or artificially digested food, or of any of the so-called digestives. Patients, he said, suffering from recent and severe hematemesis were never hungry and therefore did not require food. After three days from the cessation of the hematemesis, food such as meat, eggs, and stale bread might be given if the patient wished, but not otherwise.

Up to a comparatively recent period milk was regarded as the "sheet anchor" in cases of gastric ulcer, or, indeed, in any cases in which irritation of the intestinal tract was present. Sir William Jenner's great reputation as a physician rested, to some extent, upon his well known dictum that a milk diet was indicated invariably when typhoid fever was present. Anyone who had ventured, say twenty years ago, to dispute this view would have been regarded as indiscreet and would have found few, if any, supporters. Now the pendulum appears to be swinging in another direction. Dr. F. Smith, physician to the London Hospital, has for two or three years caused patients under his charge suffering from typhoid fever to be fed with meat, abjuring milk. Dr. Smith read a paper on the subject at the meeting of the British Medical Association held in Toronto in 1906, and showed from statistics that his results were, at least, as good as the results of physicians who kept to the time-honored milk diet for typhoid patients.

Many other medical men in various parts of the world have deviated from milk as the sole or even main food for individuals suffering from typhoid, and it does not seem that the death rate from that disease has exhibited any increase, in fact there has been a decrease in the mortality rate. It may be safely argued then that milk is, at any rate, not the only diet for typhoid patients. Dr. Barrs' strictures on milk, however, go much further; he utterly repudiates the use of milk for persons with gastric ulcers, an opinion which many will adjudge too radical. It has yet to be conclusively proved that milk is harmful in cases of gastric ulcer, although it would appear that too much milk, as too much food of any description, would not be suitable for such cases. There is no doubt that bulk in diet is more likely to do harm than kind, but it would be curious if milk were to lose favor with physicians as a food for sick persons. This would be indeed a swinging of the pendulum.

Dr. Barrs' remarks as to the danger of infection by means of milk reflect the present trend of medical opinion. A strong prejudice has been created against milk in all parts of the civilized world on account of the knowledge that many diseases are spread by contaminated milk. Public opinion has been aroused with the result that in all large towns the milk supply is being closely scrutinized and efforts are being put forth to ensure a fairly pure milk for general consumption. Given a milk free from pathogenic bacteria it cannot be denied that it is after all the best food for young children, for a goodly proportion of the sick, and, in spite of Dr. Barrs' animadversions, even for those suffering from gastric ulcer, when it is used with discretion.

The Process of Repair After Pubiotomy.

At the meeting of the German Gynecological Society held in Dresden last year the chief topic for discussion was the operation of hebeosteotomy, as the procedure of dividing the os pubis to facilitate delivery is now beginning to be called. Particular interest was taken in the question as to the ultimate condition of the bone wound, whether bony union took place or only a connective tissue growth, and if the latter, whether at subsequent pregnancies this was likely to stretch enough to permit unaided delivery. So far the only information available in regard to these points has been afforded by the numerous Roengen ray examinations that have been made at varying times after the operation and which have led to the assumption that while at first fibrous union occurs, this is later on replaced by true bone. As the question is one of considerable importance in estimating the advantages of, and the indications for, the operation, the report of what is probably the first autopsy record of the conditions existing some time after the division of the bone will be received

with much interest. Oberndorfer in the *Zentralblatt für Gynäkologie*, February 15, 1908, describes what he found in the case of a woman dying of an intercurrent affection fourteen months after successful hebeosteotomy which left no limp or other disability. The line of incision in the bone was on either side surmounted by bony ridges and the first radiograph made gave a picture that seemed to indicate that the union was of bone. On turning the specimen slightly, however, and making a second exposure, it was shown that the first result had been deceptive and that a line of fibrous tissue was clearly visible. On microscopic examination the gap, which measured 2 mm. in width, was seen to be filled with extremely dense fibrous tissue, with a thin layer of cartilage cells at either border, but there was no evidence of any attempt at metamorphosis of this tissue into bone, while the manner in which the everted edges of callus at either side had become ossified seemed to indicate that the fibrous tissue offered an insuperable barrier to further bony change. Oberndorfer therefore believes that the radiographs in previous cases have been misinterpreted and that fibrous union is the usual course of events after this operation. The reason for this failure of bony union is probably to be found in the smoothness of the sawn surfaces as opposed to the splintering and irregularity following a fracture, with its attendant greater stimulus to, and opportunities for, new bone formation.

Von Pirquet's Cuti-Reaction in Tuberculosis.

The reaction following cutaneous inoculation with tuberculin has not been so widely tried as its modification, the ophthalmo-reaction of Calmette. Yet the earlier method possesses one great advantage over its modification in being quite free from all danger to the patient, while the introduction of tuberculin into the conjunctival sac has in a few instances been followed by destructive inflammation of the eye. Moreover, neither the relative nor the final value of these new diagnostic methods can be considered as settled, and careful observation of them, especially in institutions where frequent autopsies are performed, is of great interest. Of such character is the work done by Drs. F. C. Kopetz and S. M. Sembjusky in the Infant Asylum of Warsaw (*Gazeta Lekarska*, January 18 and 25, 1908). They tried the cutaneous reaction in 251 cases, 198 of which were of infants under one year of age, while the ages of the remaining fifty-three patients ranged from one to ten years. Only two children of the first group gave a positive reaction to the test, yet four of the thirty-five cases that came to autopsy showed tuberculous infection. One of these cases gave a positive reaction during life. Fourteen children of the second group showed a positive reaction, four cases of undoubted tuberculosis, clinically, not reacting. Of the six cases in this group that came to autopsy two cases of tuberculous infection were discovered that did not react to the test. These figures justify the conclusion of the authors that the clinical value of the cutaneous reaction is not very great, though there is an undoubted relation between the reaction and tuberculosis. A negative result especially cannot be depended upon, but we are forced, by the results of trials of the method by these and other observers, to the conclusion that even a positive reaction to the test cannot be considered as proving the presence of tuberculous infection.

Tuberculosis in Infancy.

One of the most striking features of the observations that have been accumulating on the subject of tuberculosis during the early months and years of life has been the demonstration of the great susceptibility of infants to the infection and of the very inadequate means of defense possessed by the immature body. Sehlbach, for example (*Münchener medizinische Wochenschrift*, February 18, 1908), goes so far as to say that when once a tuberculous focus has appeared in an infant the latter is destined sooner or later to die of the disease, a dictum somewhat at variance with the view of von Behring, who regards more or less permanent latency of such lesions as a not infrequent occurrence. Sehlbach's conclusions are based on the records of 1,423 autopsies on children under the age of nine years performed in the Breslau children's clinic during the past ten years. Of this number 1,157 were on infants less than a year old and the total number of cases of tuberculosis was 180. The figures show that during infancy the mortality from the disease does not increase from month to month, but that there are two distinct periods of remission toward the end of the first and of the second year. The two chief times of infection would appear to be during the first three months, the so-called cradle infections, and during the latter part of the first and the beginning of the second years, the so-called dirt or creeping infections. A very clear demonstration of the protective power of breast feeding is also afforded, for the greatest number of deaths occurred among the bottle-fed infants and a large number among those who were on mixed feeding, while the breast-fed children were in the minority.

News of the Week.

Leprosy in the Canal Zone.—A colony for lepers has been established at Palo Seco, a spot not far from Panama and overlooking the bay. Eight new buildings have been provided for the seventeen patients and their attendants. When the Government took charge of the canal construction there were eleven persons with leprosy huddled together in a building on the outskirts of the City of Panama, where they were nominally under the care of the Government of Panama, and several other lepers were scattered throughout the zone.

Smallpox in Rome.—Owing to ill-advised attempts to conceal the presence of a few cases of smallpox in Rome in order not to keep away tourists, exaggerated fears as to the severity of the outbreak have become prevalent and the city is in a state of great alarm. For a time the supply of vaccine was exhausted, and many people made preparations to leave the city.

Scarlet Fever at Newington.—A small epidemic of this disease is reported from the Home for Incurables at Newington, Conn., and a number of the patients have been removed to the Hartford Hospital.

Yellow Fever in the West Indies.—Mexican ports are enforcing a thirteen days' quarantine against Havana and a strict quarantine is also in force in Jamaica. Barbadoes and Trinidad are now said to be entirely free from yellow fever.

Milk Supplies and Infectious Diseases.—Surgeon-General Walter Wyman of the Public Health Service has submitted to the Secretary of the Treasury a "Report on Milk in its Relation to Public

Health," which, among other matter, contains the details of five hundred epidemics of typhoid fever, scarlet fever, and diphtheria definitely traced to the milk supplies of the affected districts. Of this number three hundred and seventeen were typhoid fever, one hundred and twenty-five scarlet fever, fifty-one diphtheria, and seven pseudo-diphtheria epidemics.

Atomic Weight of Radium.—At a recent meeting of the Royal Society in London Dr. Thorpe, the director of the government laboratory, made the announcement that as the result of his experiments it appeared that the atomic weight of radium was about 227, taking hydrogen as the standard.

Prizes of the International Tuberculosis Congress.—The central committee of the congress announces the offer of prizes in eleven classes of subjects connected with the prevention of tuberculosis. One of the prizes is $1,500, five are of $1,000 each, and the others consist of smaller sums of money and medals. The chairman of the committee on prizes is Dr. Charles J. Hatfield, 258 S. 18th street, Philadelphia, Pa.

Philadelphia College of Physicians.—The contract for the new building of the College of Physicians, of Philadelphia, to be erected at Twenty-second and Ludlow streets, has been awarded and work is to start promptly. The estimated cost of the structure is $300,000, and it will be a two-story fireproof building 110 by 150 feet, containing a lecture hall, library, museum, portrait gallery and laboratory.

Death at One Hundred and One Years.—Mrs. Richard B. Cummings of this city, who died last week at the age of 101 years, is survived by six children, of whom the oldest is a son of seventy years; twenty-three grandchildren, and three great-grandchildren.

Antivivisection in Europe.—Even Paris has become infected with the antivivisection movement and on March 5 a largely attended public meeting was held under the direction of the International Antivivisection Union to protest against alleged brutalities of vivisection, and to demand restrictive legislation. The speakers included prominent members of antivivisection organizations in France, England, Germany, Holland and Belgium.

Dr. Jacobi's Address on Nihilism and Drugs.—Our attention has been called to a very evident error in the report of this address in our issue of February 1, page 199. It is there stated that one-half grain of atropine may be given to a child in enuresis without producing symptoms of poisoning; this should have read, one-half grain of extract of belladonna.

A New Laryngological Journal.—A new bimonthly devoted to laryngology and allied provinces is to appear with the title of *Zeitschrift für Laryngologie, Rhinologie, und ihre Grenzgebiete*, under the editorship of Dr. Felix Blumenfeld, Taunusstrasse, 4, Wiesbaden, Germany. The list of collaborators is very large and comprises the names of many of the most prominent workers in these specialties.

Association of American Medical Colleges.—The next annual meeting of this association will be held at the Hotel Euclid, Cleveland, Ohio, March 16 and 17, 1908. All those interested in medical education are cordially invited to attend and participate in the discussions. It is desired that the attendance include not only medical educators, but educators in general, members of State medical examining boards, and representatives of allied associations which discuss educational problems. The *President* of the association is Professor H. B. Ward, Lincoln, Neb., and the *Secretary-Treasurer*, Dr. Fred C. Zapffe, 1764 Lexington street, Chicago.

Long Island Society of Anesthetists.—At its spring meeting this society will consider the subject of modern European methods of anesthesia. The principal paper will be read by Dr. Mary Rupert of Philadelphia. The profession generally is cordially invited to attend.

St. John's Hospital, Long Island City.—The new wing of this hospital, erected at a cost of $250,000, was dedicated by Vicar-General McNamara on March 6 in the presence of many spectators. The building measures 60 by 125 feet, is six stories in height and is to accommodate 200 patients.

Medical Society of the Missouri Valley.—The coming meeting of this society will be held in Lincoln, Neb., March 19 and 20, at the invitation of the Lancaster County Medical Society. Dr. W. F. Milroy of Omaha is president of the society and the secretary is Dr. Chas. Wood Fassett of St. Joseph, Mo.

Queen's University.—On January 14 the new medical laboratories building of Queen's University, Kingston, Ont., was formally opened. The laboratories are for the departments of biology, histology, pathology, physiology, and bacteriology.

Dr. William H. Taylor was tendered a dinner at the Queen City Club, Cincinnati, on the evening of March 2 in honor of the fiftieth anniversary of his graduation in medicine. Later in the evening he addressed the Academy of Medicine on "Fifty Years' Practice of Medicine in Cincinnati." At Dr. Taylor's right and left at the dinner table were Drs. Byron Stanton and B. P. Good, with whom Dr. Taylor had practised for fifty years in Cincinnati.

St. Louis Medical Society.—A Section on Urology of this society was organized on February 18, with the following officers: *Chairman*, Bransford Louis; *Vice-Chairman*, E. A. Scharff; *Secretary-Treasurer*, H. N. Lyons; *Editor*, O. L. Suggett.

Obituary Notes.—Dr. Oliver John Davis Hughes of New Rochelle died suddenly in his office on March 5 at the age of fifty-three years. He was born in Buenos Ayres, received his preliminary education in England, and was graduated from the Long Island College Hospital in 1875. Dr. Hughes was an assistant surgeon in the Franco-Prussian War, then became a surgeon in the United States Marine Corps, and with the rank of lieutenant-colonel was sent by this Government on special service to Vera Cruz, City of Mexico, Japan and Cuba. After his return from this tour he accepted the post of consul-general at Coburg, which he held from 1897 to 1904. He was the recipient of many foreign decorations and other distinctions.

Dr. Richard Douglas of Nashville, Tenn., died on February 21 at the age of forty-eight years. He was graduated from Jefferson Medical College in 1882 and had held numerous teaching and official positions, including the professorship of gynecology and abdominal surgery in Vanderbilt University, the presidency of the Southern Surgical and Gynecological Society, and the presidency of the Nashville Academy of Medicine. He was the author of a volume on abdominal surgery entitled Surgical Diseases of the Abdomen.

Obituary.

DANIEL BENNETT ST. JOHN ROOSA, M.D., LL.D.

NEW YORK.

Dr. D. B. St. John Roosa died suddenly at his home in this city on March 6 in the seventieth year of his age. Dr. Roosa was born in Bethel, N. Y., of colonial ancestry, all his great-grandfathers having been officers in the Continental army. He received his early education in Bethel and at academies in Monticello, N. Y., and Honesdale, Pa., entering Yale University in 1856. Ill health compelled him soon to leave the university, and after studying for a time with a private tutor he began his medical studies in 1857 in the Medical College of the University of New York, from which he was graduated in 1860. He served as interne in New York Hospital and then enlisted as assistant surgeon to the Fifth New York Volunteers, later also serving as surgeon of the Twelfth Regiment, N. G. S. N. Y. At the close of the war he began practice in this city. Until 1882 he was professor of diseases of the eye and ear in the University of the City of New York, and from 1875 to 1880 held a similar chair in the University of Vermont. It was largely as the result of his initiative that the New York Post-graduate Medical School and Hospital was founded twenty-six years ago, and he was the institution's first and only president, as well as its professor of diseases of the eye and ear.

Dr. Roosa's teaching and official positions were almost too numerous to mention. He was president of the New York State Medical Society in 1879, of the International Otological Society in 1876, of the American Otological Society, and honorary vice-president of the International Ophthalmological Society in 1894. He was president of the New York Academy of Medicine in 1893-94, and one of the surgeons and founders of the Manhattan Eye and Ear Hospital. He was a member of the Union League and Century Clubs; of the Holland Society, of which he was president from 1896 to 1897, and of the Society of the Sons of the Revolution. He received the honorary degree of M.A. from Yale in 1872, and that of LL.D. from the University of Vermont in 1880.

Dr. Roosa's contributions to medical literature were numerous and highly esteemed, among his best known books being a translation of "Troltsch on the Eye" from the German; in collaboration with Dr. C. E. Hackley and Dr. Charles Stedman Bull, a translation of "Stellwag on the Eye"; "Vest Pocket Medical Lexicon," "Treatise on the Ear," "The Old Hospital and Other Papers," "Clinical Manual of the Diseases of the Eye," and "A Doctor's Suggestions on the Necessity of Wearing Glasses."

In 1904 a largely attended dinner in Dr. Roosa's honor was given in this city by representative medical teachers from all over the country to commemorate the twenty-first anniversary of the Post-graduate Hospital and he was presented with a loving cup as a tribute to his services in the cause of post-graduate instruction. Dr. Roosa was an eminent figure in all phases of medical activity in this city and State and was particularly prominent in securing proper legislation on matters relative to the profession. In his death medical science has lost an exalted representative and the practitioner a sturdy and farseeing champion.

THE EIGHTH HARVEY SOCIETY LECTURE.

The eighth of the present series of lectures given by the Harvey Society was delivered on Saturday, March 7, at the Academy of Medicine. The speaker was Professor Ross G. Harrison, of Yale University, and the topic, "Embryonic Transplantation and the Development of the Nervous System."

The speaker said he would attempt to show how the experimental method helped us in the study of embryological problems. In embryology this had given us a great deal of valuable information. The embryo was a very delicate mechanism, and our methods in comparison were very crude. Furthermore, the embryos of the higher organisms were so well protected in the body, that they were scarcely accessible to study. It had been necessary, therefore, to go to the lower forms. Certain animals, such as the frog and fish, lent themselves readily to experimental study. It had been found, also, that the embryos of these forms were in many ways so closely related to those of man that we could transfer the generalizations from them to man. There were two general methods of studying this subject experimentally. In the first, whole embryos could be subjected to changed environments, *e.g.* as regards temperature, illumination, nutrition, etc. In the second the immediate environment of a developing part was altered, *e.g.* by removal, or transplation. One of the most important discoveries along the second line of procedure was made in 1894 by Born of Breslau. This investigator showed that when pieces of frog embryo were cut apart they could often be made to heal together again. This discovery led him to take parts of different embryos and by causing them to grow together, to produce all kinds of monsters.

The speaker here showed lantern slides to demonstrate what Born and his successors had done. Two tadpoles joined together by their heads; part of one tadpole transplanted into the entire body of another, etc. Born had also shown that it was possible thus to join individuals of different species, *e.g. Rana esculata* and *Bombinator igneus*. Professor Harrison also showed the picture of a frog he had constructed by planting two different kinds of tadpoles together. The different coloring persisted in the fully developed frog and showed where the two had joined. The reason these experiments were successful was because in the frog the wounds tended to heal so readily. There was the further advantage that at the time when the experiment was done there was no circulation, and each cell was quite capable of independent life. At this early period of life, therefore, one could make any kind of physiological impossibility. Later in life this was impossible, for the transplanted tissues had to have certain relations with the environment; the cells could no longer live independently.

By growing the head end of one kind of frog embryo on the tail end of another kind it had been found that it was possible to trace the development of certain cutaneous sense organs. These appeared in the form of a row of dark spots, and developed from the head end. From there they spread over to the transplanted tail end. There was also a shift of skin from the head end to the tail end, though this was not so marked. In certain experiments it was necessary to remove the entire spinal cord from certain frog embryos. In order to keep such embryos alive, the speaker had

simply grafted such an embryo on a normal one. In this way the normal embryo acted as a kind of nurse for the helpless one.

The speaker next described the technique of these transplantation operations. Born's original method was very crude, for he had dealt with larger pieces. It was necessary to remember that the organisms were very small in the embryo stage, about three millimeters in length. Warren Lewis of Baltimore had introduced a refined technique, and this he had been able to do owing to the introduction of the binocular microscope of Zeiss. This afforded an erect image with sufficient magnification, so that one could transplant pieces such as the Gasserian ganglion, or the ear, or the eye. As a result of such experiments it had been found that the crystalline lens of the eye could develop out of any part of embryonic skin, provided that this was brought in contact with the optic cup.

Experiments of this kind, the speaker said, must be made to solve definite problems. He would therefore ask attention to certain problems in the development of the nervous system. Among these might be mentioned the origin of nerve fibers, which was still very obscure. There were also such problems as what the nerve fiber was in terms of the cell theory; and whether the nerve path was laid down from the beginning in the life of the embryo, or whether it was gradually developed. Mere study of the normal embryos had failed to solve these problems. The speaker then exhibited a picture showing the very early nervous system. Where the anterior nerve roots were to be there were bundles of spindle-shaped cells, and these were regarded by one school of embryologists as being the parent of the nerve fibers. Next was shown a picture illustrating the interpretation of the school of His. There were large cells in the cord sending out long processes into the region of the anterior nerve roots. Professor Harrison also showed a preparation made by Ramón y Cajal which showed conditions apparently in accordance with His's interpretation. None of the pictures, however, sufficed absolutely to decide the question. The speaker had felt that if he could eliminate each of these two elements in turn, the spindle cells and the large ganglion cells, he would be able to decide their respective rôles. The spindle cells originated in the neural crest (ganglionic crest), and this was accordingly removed in the embryo of *Rana esculata*. In order to prevent any possible regeneration, two such embryos were united back to back. This pair of embryos could swim fairly well; hence the motor nerves were evidently intact. Section showed that this was true. Careful study showed that the nerves were complete except for their sensory fibers and for the covering of spindle-shaped cells. The spindle cells were therefore unnecessary for the development of the nerve fiber from the anterior horn.

Study of the posterior nerve roots was more difficult. Cutting off the neural crest was out of the question because this also destroyed the posterior ganglion cells. Study of rare cases of maldevelopment in the embryo of the salamander had, however, shown that the posterior nerves are also developed from prolongations from ganglion cells.

The speaker then took up the question as to whether the nerve paths were present from the outset, or were developed gradually. He discussed Hensen's theory that the fibers developed from protoplasmic bridges. All cells were connected by such bridges; those that functionated persisted, while the others died out. The theory was very attractive and had been adopted by many physiologists and embryologists. According to the other doctrine, the fibers were merely outgrowths from the ganglion cells, and there was nothing to mark out the path of the nerve fiber. Professor Harrison had sought to study the question experimentally. It could be seen the two theories differed mainly in the importance they attached to the ganglion cells. The speaker said that he had been able to demonstrate that there were no protoplasmic bridges in the development of the funicular fibers of the cord. These grew down from the medulla even though the entire spinal cord had been removed. The fibers then grew down into the mass of loose connective tissue developing after the removal of the cord. When, on the other hand, the ganglion cells were removed, no fibers were developed. It had been shown, however, that a forelimb could be transplanted into the lumbosacral region of another embryo. After a time it would be found that all the proper nerves had developed, but from the lumbosacral cord instead of from the brachial plexus. This had been put forward as an argument for the theory of protoplasmic bridges. The same author had transplanted nerveless limbs, *i.e.* limbs from embryos whose ganglions had been destroyed, and claimed that no nerves developed on transplantation. The speaker said he had repeated the experiments and had had no trouble in getting the nerves to develop under these circumstances. Summing up all the evidence he believed that in the growth of the nerves there were two factors: the energy of growth present in the ganglion cell, and the guiding stimuli in the peripheral tissues.

So far as the relation of his work to the neuron doctrine was concerned, the speaker said that the embryological basis of this doctrine was more firmly established than ever before. He did not wish to go further than this.

The next lecture of this series will be held on Saturday, April 18. The speaker will be Professor A. E. Taylor of the University of California, and the subject "The Rôle of Reversed Ferment Reactions in Metabolism." Professor Schäfer's lecture has been postponed to May 9 from April 11, the date previously announced.

Correspondence.

A SUCCESSFUL MEDICAL PAPER AND ITS PROPER DISCUSSION

To the Editor of The Medical Record:

Sir:—The paper of Dr. Kerr before the Medical Society of the County of Kings on "The Construction of a Successful Medical Paper and Its Proper Discussion" raises the question, Are our medical societies so organized as to secure successful medical papers and their proper discussion? It is a matter of common knowledge that comparatively few medical men attend the sessions of the societies to which they belong, many alleging that they prefer to read the paper rather than to listen to the reading by its author. This want of interest in the papers and discussions of our societies is largely due to the mode of procedure. The papers have had no supervision or revision and usually contain a large amount of ancient history, statistics, or irrelevant matter; the reading is of the most monotonous kind; and the discussion consists of random remarks by members, on the floor, who have given the subject no previous thought. The result has been comparatively small attendance, uninterested audiences, and little or no useful information communicated. In the early history of the Academy of Medicine the attendance became so limited that there was some apprehension that it might fail of realizing the object of its founders, viz.,

to create a scientific medical organization, like the Academy of Medicine of Paris, which would attract the entire profession by the high order of its papers and discussions. The method of attracting members to its sessions finally adopted was the announcement on each card that "a collation will be served *after* adjournment." This appeal to the social instincts of the members had the desired effect and greatly increased the attendance, but it is doubtful if it increased the interest of members in the scientific part of the session.

That the members of the Academy can be attracted to its scientific sessions by a higher motive than its collation offers was demonstrated many years ago. At the period to which I refer a current topic of discussion in the profession was, *Can puerperal fever occur without a lesion?* The leading disputants were Professor Fordyce Barker, in the affirmative, and Prof. Alonzo Clark, in the negative. Being the editor of a medical periodical at that time, and desirous of securing interesting material for publication, I requested the president of the Academy, Dr. James Anderson, to allow me to organize a discussion of that subject. He consented, Professors Barker and Clark promised to open the discussion, and I readily secured other speakers in the affirmative and negative and arranged the order of speaking alternately. For the first time in the history of the Academy the house was crowded and the most intense interest was manifested throughout the entire session. A second session was held to complete the program and at this meeting members attended early in order to secure seats. The discussion was published in full and was largely republished in foreign journals, where the same question was under review, with many complimentary remarks on the success of the New York Academy of Medicine in organizing a discussion of such scientific value. At Dr. Anderson's request I arranged another discussion on a question relating to "Bright's disease," then one of the most current topics of medical interest, and with the same result of crowded meetings during three sessions.

These incidents are very suggestive of the possibility of so organizing the Academy's program as to secure for every session a "successful medical paper and a proper discussion," which will attract a large attendance of the profession. The Academy has, indeed, only to utilize its present organization for that purpose to make it a model in the production of papers and discussions of world-wide value and interest. To this end I submit the following suggestions:

1. Refer all papers to their respective sections for critical examination; the section should report on each paper so referred, whether its subject matter requires that the paper should be read in detail or be formulated as a question—affirmative and negative—for a formal discussion.

2. No business should be transacted at the scientific sessions, but it should be provided for at meetings called by the president. The scientific sessions should have no quorum, and should be conducted strictly according to the order on a postal card issued to each member. The card should state the exact time of reading a paper and of each speaker in a discussion, in order that members may know when to attend to hear the paper or any part of the discussion.

3. The section reporting a subject for discussion should organize it on the basis of a question and should arrange the disputants so that they speak alternately in the affirmative and negative. Each speaker should address the audience from the platform and he should not exceed the time fixed on the card except by unanimous consent. A vote on the result of the discussion should be taken when ordered by a majority of the members present. The chairman of the section which organized the discussion should preside during the session.

The advantages of this scheme of organizing and conducting the scientific sessions of the Academy would soon become apparent. The sections would assume the duties for which they were originally created, viz., as committees they would examine critically all papers presented to the Academy and select those that should be read in full for the information and instruction which they contain, and those that contain only a debatable subject that may be formulated as a question for discussion, affirmatively and negatively. Subjected to such an examination, few papers would be read in detail in the Academy, the subject matter of the larger number being much more intelligently presented in the form of a well-arranged discussion. To the younger members of the profession the Academy would be a school where they would learn and practice the art of public discussion. The senior members of the Academy—practitioners, teachers, scientists—would here meet in friendly rivalry, and with the convincing force of the living voice, gesture, and personality enforce their arguments upon a receptive audience. But the greatest advantage of the change would come to the Academy which would become the recognized forum where the great and vital questions in the medical sciences, which are constantly agitating the profession, are logically discussed and judicially determined.

STEPHEN SMITH, M.D.
300 CENTRAL PARK WEST.

CORRECTION OF UTERINE DISPLACEMENTS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the very able treatment of the subject of uterine displacements, by Dr. Frank H. Hancock, in the MEDICAL RECORD for March 7, I find a statement which needs some shortening of its ligaments. "Dr. Morris of New York, finding a retrodisplacement without complications, sends the patient to an eye specialist, and if refractive errors are found has them corrected *and dismisses the patient*" (Italics mine). "O that mine enemy might write a book!" Dr. Hancock has written, and it occurs to me that perhaps others who seem to be inimical to some of my ideas might write in the same way. The patient is dismissed provided that her uterus remains in place after the leak of energy from eyestrain has been calked. This same patient may be sent to a neurologist, to a dentist, to a laryngologist, to a physical culture institute, or to my hospital service for operation. She will not be dismissed until I can satisfy my own curiosity about the cause for her condition, and she will not be operated upon until I have exhausted rational lines for observation.

Many years ago I was taught by masters of approved methods of tinkering, in cases of uncomplicated uterine flexions and versions. After awhile I added an "h" to tinkering, and found myself able to stand aloft upon the uterus, and to wave my arms in freedom. Previously my case had been a confinement case. If there was any specialist who needed to have the long forceps applied to himself twenty-five years ago it was the gynecologist of that day. Very many flexions and versions of the uterus are symptomatic. An anteflexion in the spring may be a retroflexion in the fall. A retroversion following some great grief may correct itself without the help of the doctor. A retroversion following a fall may frequently enough be corrected by the knee-chest position and the vaginal air cushion. There are flexions and versions which seem to be uncomplicated but which require some very nice surgical work. That is why the practice of the profession is superior to the practice of an idea. Dr. Hancock, and no doubt many others, would have me practice an idea.

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OUR LONDON LETTER.

(From Our Special Correspondent.)

OUT-PATIENTS—HOSPITAL FOR INSANE—VITAL STATISTICS—EMPYEMA—EXCISION OF THE SCAPULA—AURAL GROWTHS—MILK SUPPLY—DANGER OF X-RAYS—THE "TIMES" ON QUACKERY—OBITUARY.

LONDON, February 21, 1908.

YESTERDAY the important announcement was made that the Prince of Wales, on the suggestion of the Committee of King Edward's Hospital Fund, has decided to appoint a committee to inquire into the system prevailing in the London voluntary hospitals with regard to the admission of out-patients. But in view of the fact that some portion of the subject of inquiry would probably fall within the subjects to be reported upon by the Royal Commission on the Poor Laws, the committee will not be appointed until that commission has reported.

Dr. Hy. Maudsley has this week addressed a letter to the London County Council in which he offers to contribute £30,000 toward the cost of establishing a hospital for mental diseases, if the Council will carry out his scheme. The main object, he says, would be (1) the early treatment of cases of acute mental disorder, with the view, so far as possible, to prevent the necessity of sending them to the county asylums; (2) to promote exact scientific research into the causes and pathology of insanity, with the hope that much may yet be done for its prevention and successful treatment; and (3) to serve as an educational institution in which medical students might obtain good clinical instruction. No one perhaps could know better than Dr. Maudsley what is the real need for such an institution, and he enters somewhat more fully in his letter on the points above stated. It appears that the distinguished alienist had mentioned

the scheme to the chairman of the Board last December and no doubt he had long before then cogitated it, for at that interview he had suggested that the hospital should be for 100 patients suffering from recent and mostly acute insanity; that some 60 or 75 should be of the poor class, for whom their parishes would pay, as is now the case with those sent to county asylums. The remainder would pay a sum sufficient to prevent them being any cost to the ratepayers. Dr. Maudsley believes such a hospital, in vital touch with the hospitals and University of London, would do much to break down the isolation from general medical knowledge and research in which he thinks the study and treatment of insanity remains and in the end might save to the rates some of the prolonged expense of chronic and incurable insanity. The thanks of the Council were voted to Dr. Maudsley for his munificent offer, which was referred to the Asylums Committee for their consideration and report.

The Registrar-General's return for the last quarter of 1907 has just appeared and shows that the births registered in that period (in England and Wales) equaled a rate of 24.8 per 1,000 of the population. This is 2.5 below the average, and far the lowest fourth quarter rate on record. The death rate was 14.7 per 1,000. This is 1.7 lower than the average, and, like the birth rate, the lowest fourth quarter rate. The infantile mortality was 136 against an average of 142.

In this quarterly return a brief summary is given of the results for the whole year, which, with the exception of the birth rate, seem satisfactory. This rate was only 26.3, being 2.1 below the average, and the lowest recorded. The death rate was 15.0, being 1.7 below normal, and also the lowest recorded. Infantile mortality fell to 118 per 1,000 births, being 14 below that of 1906, and 27 below the ten years' average, and also the lowest ever registered. The natural increase of population, due to excess of births over deaths, was only 393,315, as against 409,456, the average of the quinquennium preceding. The check to the increase thus amounts to more than 16,000, assuming the population to have been stationary. These facts may be compared with those contained in the Annual Report for the year (1906) last completed, which has also appeared within the last few days, and furnishes many facts which may be compared with the later statements for the briefer period. Some modifications were introduced in these reports with the new century, but not such as to render comparison with earlier ones impossible. There is still a tendency toward expansion of the data provided in these monumental volumes of vital statistics. This is particularly noticeable in the international data, which now include facts as to general mortality and the fatality of epidemics, cancer, and tuberculosis. Infantile mortality in the colonies and abroad also deserves attention in comparison with that at home. It has often been stated that while our adult mortality has long been falling, that of the infantile age has remained unchanged. But this is no longer the case, for the Registrar-General is able to state that since the beginning of the new century there has been a decrease amounting to 11 per cent. of the rate in the previous decennium. The act passed in the last session of Parliament on the notification of births may perhaps be as successful as its promoters hope in further diminishing infantile mortality. A warning note, however, is sounded as to the possible fallacy for a too hasty deduction from recent statistics, inasmuch as we have been enjoying a series of cool and moist summers; such weather, in fact, as is believed to check the rise in infant mortality, which usually takes place in the third quarter of the year. Another subject illustrated in this report is the fall in the birth rate, which has steadily progressed of late years until it amounted to 20 per cent. on the total number of women at child-bearing ages. Reckoning on the rates of births to wives of such ages, the decrease has reached 25 per cent. The legitimate births in 1906 were less by 30,000 than they would have been had the ratio of 1876-80 been maintained. It seems obvious, as Sir W. Dunbar remarks, that much of the decrease is due to deliberate restriction of child-bearing.

Mr. A. E. Morison has committed to the Edinburgh Medical-Chirurgical a careful paper on "Empyema," founded on 100 consecutive cases. After considering the physics of pleural effusions and the diagnosis, he went on to say that the prognosis in empyema is good, his mortality having been only 3 per cent. Natural cure might take place by absorption or by spontaneous evacuation into adjacent organs, or through the chest wall, when the accumulation was large, but subsequent operation might become necessary. Surgical treatment from the first was therefore best, and, in his experience, treated with proper care, empyema was hardly serious. His three deaths were due to bronchitis, marasmus and cerebrospinal meningitis, respectively. The perfect recovery of the others was most satisfactory. Aspiration was only of service when dyspnœa was extreme or some complication contraindicated operation. The site of preference for incision was the sixth interspace, just in front of the posterior axillary line. He made a vertical incision through the skin and a horizontal one through the muscles along the upper border of the seventh rib. Then he introduced sinus forceps and dilated the wound by withdrawing them open. A rubber tube one-quarter inch in diameter and two inches long was passed and prevented from slipping in by a safety pin in the free end. When the discharge became small the tube was cut in half, dressing with sublimate wool. Mr. Morison laid down the following conclusions: (1) Pleuropneumonia is the most frequent cause of empyema; (2) empyema rarely follows pleurisy with effusion; (3) in adults it is more likely to be secondary to serious lung disease than in children; (4) the diagnosis is not always easy; (5) the exploring needle should be used in all doubtful cases and in more than one situation; (6) there is no danger in using the needle with proper care; (7) the immediate prognosis in complicated empyema, treated by incision and drainage, is good; (8) the remote prognosis is excellent, no deformity following and no sequelæ resulting; (9) careful asepsis must be carried out; (10) resection of the rib is needful in some neglected cases, but generally is meddlesome surgery.

At the Clinical Section of the Royal Society of Medicine, on Friday last, Mr. R. P. Rowlands showed a man of thirty-five, from whom the whole of the body of the left scapula was excised fifteen months ago for enchondroma. He was able to save the coracoid process, with its muscles and ligaments, the glenoid cavity with the capsular ligament and the acromion process, with the attachments of the deltoid and trapezius. Both the functions and the deformity in this case were evidently less than after complete excision of the scapula. The man had been able to work as a painter's laborer from two months after the operation. It was thought that preservation of the processes of the glenoid cavity was practicable and preferable to complete excision for inflammatory conditions and for benign growths, possibly also for some malignant growths.

There were some very interesting cases in the Otological Section. Let me cite a couple. Mr. Whitehead read notes of one which started with aural polypus, recurring on removal. The mastoid operation was done when the growth was found to extend deeply into the cochlea and petrous portion and forward, involving the Eustachian orifice. Hemorrhage, profuse but arrested at length by pressure. Eight weeks afterward the cavity was dry and covered with epithelium. No recurrence since (twelve months). The growth appeared to be atypical carcinoma, and was referred to the growths committee for further examination.

Dr. Barry Ball showed a case of pulsating growth in the left external auditory meatus in a man of seventy-three, who consulted Dr. McBride ten years ago. There was then a small growth in the meatus, which has increased steadily with an occasional hemorrhage. It now protrudes, and there is distinct, expansile pulsation in it, which is communicated to the auricle and pre-auricular regions. It seems to be an endothelioma. The question of tying the external carotid was discussed, but the general opinion seemed to be against, considering the patient's age and the duration of the growth.

Our milk supply is the subject of a disquieting report by Dr. Collingwood, Medical Officer of Health for the City. In continuation of previous inquiries, twenty-four samples were taken in November on arrival from three districts, and submitted to Dr. Klein. Of these, thirteen were fairly clean, two tuberculous, and nine dirty. Thus 8.3 per cent. were capable of producing tuberculosis, and of the remainder 37.5 per cent. were dirty. Dr. Collingwood remarks that although the unclean percentage on this occasion is higher, the tuberculous percentage shows slight variation from that in previous examinations. Traced to their origin, one of the tuberculous samples was from a farm in which the premises were in a satisfactory condition, but one of the cows, on inspection, was found to be tuberculous, and slaughtered. The other was from a herd in which three were suspected, found to react, and removed. It appears that no precautions are taken by the farmers at the source, nor by the dealers on arrival in London, and yet, as this report shows, there is no difficulty in dealing with the milk

at the source by the local authorities. The central authority need not waste time or money on inspecting farms. Dr. Collingridge's work shows that it is only necessary for each local authority to determine the condition of the milk, and, when satisfactory, furnish a report to the board of the district and also to the Board of Agriculture—the latter to take action if the former neglects to do so. The dirty state of samples is due to such causes as unlocked and unsealed churns and the system of mixing at the railway stations adopted by dealers. It is said, too, that the churns are often returned unsealed and unwashed to the country, where the farmers, in their turn, neglect to purify them. These are certainly duties which should be rigidly enforced on great companies as well as on the smaller dealers. The subject was before the House of Commons last night, when Mr. Burns stated he hoped to bring in a bill shortly to control the milk supply, and he also gave information about a recent increase in the importation of milk, cream, etc., from abroad.

Dr. Hall Edwards, of Birmingham, has lost an arm under circumstances calling for deep sympathy. He was an early worker with *x*-rays, and went to South Africa as a specialist with the Imperial Yeomanry. He has since been continuing the work, and has suffered much from the effects of the rays on his left hand. As the arm was becoming affected, it has been amputated.

On Saturday, the *Times* had a leader chiding "certain publications" for the unwarrantable statements of quacks in their "advertisement sheets." Saul, among the prophets, sneer some, as they point to the advertisement sheet of the *Times*, where quackery daily makes promises impossible of fulfillment and "false to the knowledge of those who make them."

Dr. Fancourt Barnes died yesterday, aged fifty-nine. He graduated at Aberdeen, M.B., 1875, M.D., 1878. He served as Physician to the Royal Maternity Charity and British Lying-in Hospital, Obstetric Physician to the Great Northern Central Hospital, and other institutions. He was editor of the *Gynecological Journal*, and at one time sub-editor of the *British Medical Journal*. He wrote numerous articles on obstetrics and gynecology for journals and papers for the societies. In 1893 he recorded fifty consecutive abdominal sections. He was the translator of Martin's "Atlas of Obstetrics and Gynecology," and joint author with Robert Barnes of the "System of Obstetric Medicine and Surgery." He also published a German-English Medical Dictionary. He was a corresponding member of several societies devoted to his specialty, including that of Boston, U. S. A.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 27, 1908.

Treatment of Trophic Nerve Lesions: A Study Based on a Case of Mal Perforans; of Ischemic Paralysis and Erythromelalgia.—W. C. Quinby advances the following conclusions: (1) That the so-called trophic nerve lesions of the skin, bones, and joints are due to a break in what we have called, for convenience, the neurovascular mechanism of the part involved. (2) That this break may be situated centrally, or on the neural side, or on the vascular side. (3) Hence rational treatment of such conditions will be directed toward modification of (*a*) the blood supply, or (*b*) the nerve function of the part. (4) For modification of the blood supply we have active and passive hyperemia increasing it, and positive pressure by bandaging, pneumatic cabinet, or the immersion in mercury decreasing it. (5) For modification of the nerve function we have nerve stretching, neurolysis, and nerve disassociation and electricity. (6) Nerve stretching is probably to be condemned, similar results being obtainable by the simpler passive hyperemia.

Pulmonary Embolus Following Operative Interference.—C. G. Cumston refers to a doubtful case of pulmonary embolus following an exploratory laparotomy which revealed papillary ovarian cysts. No autopsy was held and diagnosis was not positive. More recently, however, he has operated on a young woman for ovarian cyst in which an autopsy revealed pulmonary embolism. The attack came on without a moment's warning, although there were certain favorable conditions in the case for thrombus formation. Death came on the twentieth day after operation, the patient having been sitting up daily for over a week. The writer goes on to discuss the question of pulmonary thrombus, setting forth the various theories extant. Various causative factors are slowing of the circulation, changes in the density of the blood as well as in its anatomic elements, cardiac lesions, increased resistance in the peripheral circulation, which occurs in pregnancy and pelvic neoplasms, etc. In many cases it is impossible definitely to determine the cause. In mild cases the breaking off of the thrombus and the lodgment of the embolus are attended only by slight dyspnea and possibly a little vertigo and the patient recovers. The other extreme is the type in which the patient develops intense dyspnea, grows cyanotic and unconscious and dies in a very few minutes. We know of nothing to prevent the accident and can really do nothing for it.

New York Medical Journal, February 29, 1908.

The After-Care of the Insane.—F. Petersen reminds us that the circumstances surrounding the insane differ from those associated with other forms of illness. Insanity is a protracted malady and convalescence and cure are matters of months or even years after admission to hospitals. When the poor and friendless insane are finally discharged, they come almost as strangers into the community and are often wrongly regarded, if their history is known, with some degree of suspicion or even apprehension. These conditions have a bad effect upon the patient himself and tend to cause a recurrence of his malady. The author briefly reviews the efforts which have been made for establishing in this country after-care societies for this class of patients and heartily advocates its further extension. The rather unusual needs of the insane as compared with the needs of other convalescents, has led of late to some extension of the functions of an after-care society, so that the qualification "after-care" does not fully represent the present conception of such an organization. An organization of the kind desired is one made up of hospital physicians, local practitioners, lawyers, clergymen, business men, and their wives, and as they become familiar with all matters pertaining to the insane through their relation to the immediate objects of after-care, will diffuse ideas of prophylaxis through the community and educate the people in this important department of public health. Not only will preventable causes thus be more generally recognized and more strongly combated, but the public will become more alive to the need of early treatment and take advantage of the opportunities now afforded for medical advice in mental disorders at outdoor departments of city clinics and country asylums.

The Gastrointestinal Symptoms of Middle Ear Suppuration.—L. Fischer says that in examining cases of gastrointestinal disease, one should never overlook the possibility of there being the initial stage of scarlet fever or middle-ear trouble. He notes that the ear may easily become infected through the Eustachian tube by material which in the act of vomiting becomes lodged in the nasopharynx. The gastrointestinal symptoms due to the toxemia from a pneumococcus or streptococcus infection of the middle-ear through the nose and nasopharynx appear as follows: In the breast-fed case, the child becomes ill suddenly, has vomiting, diarrhea, greenish stools, fever, rapid pulse and breathing, hot skin, erythematous or urticarial rashes, apathy, meteorism, flatness and flatulence, congested throat and acetone odor on the breath. The glands are not involved. In the bottle-fed case the symptoms are of the same general variety but of a more severe type. They may be ushered in by convulsions. Evidences of a true enterocolitis quickly appear. Indican is present in the urine, evidencing a disturbance of metabolism due to putrefactive absorption. When intestinal digestion is impaired in spite of eliminative treatment and careful dieting it proves that the seat of the trouble is located elsewhere. Blood-counts may suggest suppuration, especially if the polynuclear percentage is very high. In a normal infant during the act of crying or screaming the drum membrane appears pink or rose colored. It is advisable, therefore, to examine the ear gently and quickly while the infant is asleep to prevent its waking and crying.

The Present Status of the Etiology of Syphilis.—R. C. Rosenberger reviews the literature of the *Spirochæta pallida* with relation to its biology and etiology. Nothing new is presented but the paper is a valuable summary and represents an exhaustive search through recent publications. The various subheadings are morphology, occurrence in specific lesions, and cultivation experiments. The author's observations have convinced him that *S. pallida* is the probable cause of syphilis. In congenital cases though it has been found most constantly, it is not always generally distributed in all the organs and tissues. It may be in only one or two organs, the liver and spleen, kidney or skin, and then only in certain areas of any of these structures. The author says that anyone who has had histological training should not mistake the parasite when stained by the Levaditi method, for any tissue fibers in the different organs, while in spreads from lesions or organs it most certainly takes a practised eye to distin-

guish between delicate shreds of tissue and spirocheta, especially when stained by the anilin dyes or any of the stains for blood. Another point must also be borne in mind, and this is the certain disappearance or diminution in the number of parasites, when local or general treatment is resorted to. The examination should be made as early as possible, and Rosenberger believes that the best stains to use for spreads from lesions or organs are Giemsa's azure eosin and the blood stain of either Wright or Leishman.

Orthopedic Therapy During the Early Stages of Acute Anterior Poliomyelitis.—J. J. Nutt reminds us that the disabilities in this disease are due to the paralysis and the deformities. The latter result from unopposed muscular action, from asymmetry in development, and from weight bearing in an abnormal position while the sustaining tissues have their motor and trophic centers paralyzed. The treatment, therefore, before the chronic stage, should be directed toward: (1) Keeping the parts in as healthy a condition as possible; (2) the preservation of the normal range of motion in all the joints; and (3) preventing stretching and elongation of paralyzed and weakened tissues. For the relief of (1) we may use massage, electricity, heat, and hydrotherapy. For (2) passive movements should be carried out daily from the beginning of the treatment. Muscle shortening begins within a very few weeks. Normal movements may be impossible without the use of force as early as six weeks after the outset of the disease. For (3) we have various muscle-relaxing apparatus. Care must be taken not to overstretch the muscle. Illustrative clinical histories are given. Prolonged rest in bed does not appeal to the author as the wisest course to follow.

Journal of the American Medical Association, February 29, 1908.

The Endogenous Uric Acid in Pathological Conditions.—R. E. Peck and F. W. Thompson report a series of experiments undertaken to solve the problems of the variation from normal in the output of urinary uric acid in pathological conditions other than gout, and what is the best method for increasing the output when it is below normal. Thirty-one patients were examined; of these 17 (54.8 per cent.) showed the urinary uric acid to be below 0.250 gram in twenty-four hours, 22 patients showed marked nervous symptoms (melancholy, dizziness, blurrings of vision, pains referred to different parts of the body, etc.), and in 14 of these (63.6 per cent.) the condition was diagnosed as neurasthenia. Of these 14, only 4 showed the urinary uric acid over 0.250 gram; 5 patients had rheumatic symptoms, and 2 were normal. In every case a purin-free diet was ordered for at least two days prior to the collection of the first sample and continued throughout the observation. Folin's methods were used for the determination of uric acid and Kjeldahl's method for the total nitrogen. The treatment consisted in the use of drugs, diet, and electric light baths. In two patients, experiments were undertaken to determine the relative effects of hot-air and electric-light baths. The hot-air baths were followed by a remarkable and unexpected drop in the uric acid output, unexplainable by increased perspiration, as it continued on days when no baths were given. The conclusion drawn was that this kind of bath inhibits the formation or increases the destruction of uric acid and might be of use in conditions where abnormally high amounts of this substance were present. The electric-light bath did not have any effect when a normal amount of uric acid was being excreted, but taken when there is an abnormally low output this treatment increases considerably the quantity eliminated, if not always to a normal amount. The results are tabulated and the authors' conclusions stated in substance as follows: 1. A certain proportion of patients showing nervous and other symptoms are suffering from disturbances of metabolism of such a nature as to lead to an abnormally low output of endogenous urinary purins. 2. Just what these metabolic abnormalities are we cannot at present say, because of ignorance of the exact physiological processes concerned in the formation of the endogenous moiety, but that they are, in a measure at least, responsible for some of the symptoms, is shown by the relief of these same symptoms on the increase of the elimination of the urinary purins. 3. The best method of bringing about this result is not by trying to dissolve the uric acid, as has been our endeavor in the past, but to increase the activity of the metabolic processes. This latter end is best attained by exposing the naked body to the direct rays of incandescent electric lights.

The Choice of a Vasodilator.—H. W. Cook calls attention to the advantages of sodium nitrite over nitroglycerin and amyl nitrite as regards stability and permanence and certainty of effect. Its action usually is manifest in from three to five minutes when given by the mouth, and in about two minutes when given hypodermically, and is maintained from one to two and a half hours. Both of the other drugs, while quicker in action, are less reliable and less lasting in their effects. A great recommendation of sodium nitrite is the almost entire absence of general effects when given in proper doses; the throbbing, dizziness, flushing, etc., often so annoying with amyl nitrite and nitroglycerin, are slight or absent, and Cook has never observed the headaches so common with the continued use of nitroglycerin, to follow that of sodium nitrite. He has found it most convenient to give it in triturates of one-half and one grain each. They may be used either by the mouth or hypodermically. He reviews the indications for vasodilatation in conditions of low and high arterial tension, insisting on the necessity for the use of the sphygmomanometer in the treatment of every case of cardiac, renal, or arterial disease. Any attempt, he says, to regulate arterial tension without any knowledge of its degree or action under treatment, is working in the dark. One-half grain of sodium nitrite is a safe initial dose in an untried case, and a three-hour interval between doses. The adjustment of dose and interval must be regulated by the sphygmomanometer. His conclusions are summarized substantially as follows: 1. Sodium nitrite is the best vasodilator; it has the most enduring effects; is most stable and dependable; gives rise to the fewest unpleasant symptoms. 2. Vasodilatation may be indicated with low or normal tension, *i.e.* all uncontrollable hemorrhage, either during operative manipulation, typhoid ulceration, gastric ulcer, pulmonary hemorrhage, other internal hemorrhages uncontrollable by surgical methods, aneurysm or thrombus. 3. High tension is abnormal and either accompanies organic disease or else presages its onset; in either case it demands treatment—first, by general hygienic measures; second, when necessary, by venesection or vasodilatation with drugs—preferably sodium nitrite.

The Operative Treatment of Epilepsy.—M. Woods advocates more frequent resort to surgery for the cure of epilepsy, basing his recommendation on the theory that the disorder is an apyretic paroxysmal neurosis, and that the strong impression made on its neurotic victims by surgical procedures will often have a directly curative effect. He reports from his own case records three instances of apparently lasting arrest of the attacks after surgical operations and traumatisms involving surgery, and refers also to the frequently observed fact of the temporary arrest of the paroxysms after almost any kind of an operation. One of his cases is that of a woman, aged 42, who had been an epileptic for twenty years, who burned her hand on a red-hot grate in an attack, the hand requiring amputation. She continued free from the disease till her death, eight years later. He refers to other similar cures reported by various authors, and holds that, altogether, they justify a claim for more frequent resort to surgery in this disease.

Cardiac Arrest as a Cause of Epilepsy.—Following out a suggestion of Dr. A. E. Russell of London that cerebral anemia might be a common condition produced by all the underlying causes of the epileptic seizure, and that arrest of the heart's action may in some cases be the immediate cause of the anemia, for which he produced some evidence, J. F. Munson undertook to secure a series of graphic records of the pulse of epileptics just prior to their attacks. The difficulties of this, taking into consideration the fact that the exact time of no seizure could be foretold, are obvious, but he succeeded in obtaining records in ten cases, which are reported, by means of an air transmission whereby the pulsations in a constricted limb were recorded on blackened paper on a drum for a period of many hours, the patient lying in bed or bolstered up by pillows in a convenient position. While there was no time-recording apparatus attached, he is satisfied, from several months' experience with the kymograph, that its motion was sufficiently regular for the purpose of his study. The patients were taken at random, except two or three selected on account of heart lesions. They can, he says, be accepted as representing the average of epileptics. In only one case was there a very slight slowing observed, in all the others there was an acceleration of the pulse preceding the attack and lasting through the onset stage to the moment of the first recorded convulsion. The acceleration was never great, from eight to nine, or from twelve to fifteen or seventeen beats. In all cases the pulse was entirely regular. For this group of cases, Munson says, one can conclude definitely: 1. Cardiac arrest does not occur. 2. Except for slight acceleration, and in one case slight slowing, the heart does not take part in the convulsion. While there is no doubt as to the accuracy of these conclusions for the cases observed, he does not pretend to say that they apply to all epilepsies. It is doubtful, he thinks,

however, whether cardiac arrest will be found in cortical epilepsies uncomplicated by heart lesions.

Uninfected vs. Disinfected Hands.—According to J. H. Carstens, the only remaining practical problem in aseptic surgery is that of how to make the hands sterile. While this has been accomplished to a considerable extent, we still get cultures from so-called sterilized hands and the only way in which we can obtain an approximately good result is by never getting hands or fingers where there is liable to be infectious material. We can probably never accomplish this perfectly, but we can do a good deal if we try. His technique is given as follows: If he has to operate for an ordinary ovarian tumor or a fibroid tumor, or do an "interval" appendectomy or a gallstone operation, he operates with bare hands. If on opening the abdomen he finds suddenly something he did not expect—a quiescent pus tube, complicating the ovarian or fibroid tumor, or if he finds that the appendix has ruptured and is walled in and lying in a puddle of pus; or if he finds he is dealing with tuberculous peritonitis or a malignant growth—he stops at once, turns around to a basin containing gloves and puts them on, which takes about a minute. He then proceeds with the operation with the gloved hand. In case of previously diagnosticated infection, or in intestinal surgery, or whenever there is any doubt, he uses gloves from the first. If we always use rubber gloves we come to depend on them too much. Gloves tear and puncture during operations, especially if they are thin, and if thick they interfere with rapid work. If they tear, the infection of the hand is carried to the patient, or the patient's infection contaminates the hand. Carstens doubts also whether gloves can be always sterilized by boiling for a few minutes in water; certainly many spores are hard to kill. In his work, aside from operations, he follows the same rule, never examining an infected or puerperal uterus with the bare finger, but always with gloves. He never makes a vaginal, rectal, or any other kind of examination, never dresses a patient in whom there may be an abscess or fistula, or a case that requires drainage, without using rubber gloves. In this way he thinks he can keep his hands clean by absolute avoidance of infection. With this and the rapid work permitted by the ungloved hand, it seems to him that a surgeon can increase his success and reduce his death rate.

The Lancet, February 22, 1908.

Night Blindness.—J. H. Parsons reviews the principal features of retinitis pigmentosa. Routine examination shows that there is little disturbance of central vision. A view of the fundus in early stages in young patients shows a zone of retinal pigmentation in the neighborhood of the equator, spots shaped like bone corpuscles and aggregated along the perivascular sheaths of the retinal vessels. A ring scotoma, seldom complete, is also visible at this time. At a later stage the zone of pigmentation has extended both peripherally and centrally, and the field now shows uniform contraction, the peripheral area of vision having become abolished. The progress is usually very slow and central vision is seldom lost by the extension of the choroido-retinal disease to the macular area. Before this occurs a posterior cortical opacity appears in the lens, which, however, has much the same effect upon the visual acuity. This so-called idiopathic retinitis pigmentosa is a progressive form of chronic night blindness. It is an obscure disease in which heredity and the consanguinity of parents plays a considerable part. In reality the choriocapillaris of the choroid seems to be first attacked, the retinal degeneration being secondary. The outer layers of the retina are nourished by the choriocapillaris and in retinitis pigmentosa the inner layers show comparatively little change. These facts help us to a reasonable conjecture as to the exact causation of the night blindness. There is a chronic hereditary form of the disease which is stationary and shows no changes in the fundus. There are also acute cases. Syphilitic pigmentary retinitis represents in some respects an intermediary form between chronic night blindness and idiopathic retinitis pigmentosa. Malnutrition is an important factor in these intermediary cases. Still another form is that associated with jaundice in severe cases of which this visual disturbance is not uncommon. In some instances pigmentary changes of slight degree have been found in the retina and the condition has been dignified with the name ophthalmia hepatica; in most the ophthalmoscopic signs are negative. It is noteworthy in this connection to recall the fact that bile salts are a solvent of the visual purple, as was shown by Kühne. Night blindness is common in India among badly-nourished natives, especially during the periodic famines. It has been found that the symptom disappears when the patients are fed on liver, a fact difficult to correlate with the cases occurring with jaundice.

Pneumococcic Suppuration in Femoral Aneurysm.—H. H. Clutton and L. S. Dudgeon report a case of aneurysm of the femoral artery in a man of 78 years in which suppuration occurred from pneumococcic infection. He passed through a pneumonia of the influenza type and about a month later began to have a swelling in the course of the femoral vessels on the left side. In the course of a few weeks the swelling began to pulsate and finally presented all the signs of an aneurysm in Hunter's canal of the left side, with inflammatory exudation into the tissues around. It was decided that the mass was a sacculated aneurysm on the outer side of the femoral artery in Hunter's canal. Four months after the onset of the pneumonia, when the entire mass reached the apex of Scarpa's triangle and occupied the middle of the thigh, the femoral artery was ligated just above the swelling. The patient recovered well from the operation, but the mass continued to increase in size and gradually assumed the physical characteristics of an abscess. It was continuously incised and what was evidently old softened clot escaped in large amount, but no direct arterial communication with the cavity could be made out. Counter openings were made and the whole area thoroughly drained. The man made a good recovery. Examination of the clotted material which escaped showed pure cultures of the pneumococcus. There was no positive evidence to show the existence of an aneurysm before the pneumonia attack.

Three Cases of Poisoning by Carbonic Oxide; One Recovery.—The cases are reported by R. S. Pearson. The patients, women, retired for the night in a room heated by a stove and were found unconscious the next morning. Two of them, aged respectively 47 and 52 years, were dead. The third, aged 76, was alive and was saved, artificial respiration having been begun at once and continued for a long time. Her pupils were equal and of moderate size; she was practically pulseless and was breathing stertorously, the cheeks blowing with each expiration. Respiration was slow (about 12 to the minute), the lips and mucous membranes were bright, and the complexion was clear. Both wrists showed abrasions the result of the continued efforts at artificial respiration, and it was noted that the reddened skin around the wrists had a peculiarly bright hue. As there was no information to go upon, and as there was a suspicion that all three had partaken of the contents of a mysterious parcel left by a visitor, after injecting one-sixtieth of a grain of strychnine it was decided to wash out the stomach. This was done with warm water and afterwards with weak Condy's fluid till the washing was clear; the washings were first of a coffee-ground color. One and a half ounces of brandy were then given through the stomach-tube, and after injection of ether and the application of the interrupted current in the course of the phrenic nerve, after about three hours the pulse improved, the conjunctival reflex returned, and she responded to outside stimuli. Oxygen was sent for, but she recovered before it arrived. A specimen of blood submitted to the spectroscope revealed the absorption bands of CO hemoglobin.

British Medical Journal, February 22, 1908.

On the Incidence and Spread of Cancer.—G. L. Cheatle has collected 58 cases in which cancer began in the skin of the hand. All but one (a rodent ulcer) were squamous epithelioma. In all but two the growth began on the back of the hand. The points of incidence in these 54 cases are as follows: In 28 of them the disease began either exactly over or to one or the other side of the second metacarpal bone. In 16 of these 28 cases it began on the radial side of this bone. In 22 of the 54 cases the disease began about the middle of the shafts of the third and fourth metacarpal bones. In 4 out of the 54 cases the disease beban on the ulna side of the fifth metacarpal bone near the wrist. Out of the 56 cases 32 began on the right hand and 24 on the left. In 4 cases there were squamous epitheliomata of both hands (backs); in one of these patients there was in addition a rodent ulcer on the right temple. The majority of the cases are males. The author says that the clinical connection between external irritations and cancer is very noticeable. The incidence of cancer appears to him to be closely associated with those points at which nerves become cutaneous. Besides affecting the epithelium of the skin locally, external irritation also affects the posterior spinal root ganglion supplying that skin and its epithelium, so that changes in the skin which are observed when external irritation is applied to it may be partly, chiefly, or wholly due to impulses received or not received from the posterior spinal root ganglia.

Oral Filter to Be Worn During Operations.—G. E. Duncan gives an illustrated description of the filter, which is a simple one, consisting of a square of cheese cloth measuring 3 feet 1 inch along each border. This square is folded up like an ordinary handkerchief and is steril-

ized with the dressings. After the surgeon, his assistants, and others in the operating room have sterilized their hands and put on their operating coats they apply the muslin filter in this manner: Unfold the muslin from its handkerchief form until one fold remains, that is, the muslin is simply folded once, its area being halved. Grasp the folded edge with both hands and fling the muslin over the head, bring the center of the folded edge down to the center of the forehead just above the eyebrows, pass the folded edges behind both the ears, exposing the free ends down over the shoulders on to the front of the chest. Now strip (on both sides) the anterior free edge from the posterior free edge up to the level of the lobe of the ear. Now bring the posterior free edge across the face at the level of the bridge of the nose. Likewise the remaining posterior free edge across the nose, tucking the end in, about midway between the outer canthus of the eye and the external auditory canal. Now pull up the collar of the sterilized coat round the muslin. With very little practice and some small amount of dexterity it is possible to bring over the nose and mouth a doubled edge, making in all four folds of muslin through which the expired air may be filtered.

Deutsche medizinische Wochenschrift, January 23 and 30, and February 6, 1908.

A Bacteriological Property of Lecithin.—Bassenge says that emulsions of lecithin are to a pronounced degree lytic for typhoid bacilli. When brought into contact with a 1 per cent. water emulsion of this substance the bacilli immediately disintegrate. The organisms first shrivel and then break up into separate, highly refractive granules, as in Pfeiffer's experiment. In a 1-1,000 emulsion this result did not follow at once, and even at the expiration of thirty to sixty minutes, in addition to the shriveled and disintegrated bacilli well-preserved and motile organisms were present. A 1-10,000 emulsion manifested only traces of bacteriolytic power. Cultures made from these emulsions remained sterile at the strength of 1 per cent. and there was manifest inhibition in that of 1-1,000, while the 1-10,000 gave a result not appreciably different from the control. It was not found possible to render animals resistant to subsequent typhoid infection by injections of lecithin, but the substance was used to advantage in extracting the endotoxins for the purpose of making an immunizing serum. Cultures of the bacilli were flooded with lecithin emulsion, placed in the agitator, treated with chloroform, and the aqueous layer pipetted off. Guinea pigs treated with this toxin were not affected by infection twenty-four hours later, with several times the fatal dose of thyroid bacilli.

Intraperitoneal Rupture of the Bladder.—Nordmann says that the most important factor in improving the prognosis of this condition is that all patients with an abdominal contusion shall be brought to a hospital as soon as possible and that all manipulation, especially catheterization, shall be avoided. In the hospital a single catheterization may be performed, using all possible precautions against infection. A history of intoxication, particularly if abdominal trauma of any sort occurred while the patient was in this condition, is of significance. The earliest and most important symptom of intraperitoneal rupture of the bladder in addition to the ineffectual attempts to void urine, is the reflex abdominal rigidity. If the diagnosis of an intraperitoneal rupture has been made laparotomy should be performed as promptly as possible and the bladder rent be sutured. The abdominal cavity is best cleansed by means of irrigation with saline solution. If the suture of the bladder is successful, there is no suppurative peritonitis, and the intestines are not greatly distended, the abdominal incision may be completely closed. A gauze drain should never be placed in contact with the bladder wound, as this is a frequent cause of urinary fistula. If there is doubt as to whether the rupture is intra or extraperitoneal, it is advisable first to do a suprapubic cystotomy; if exploration of the bladder then shows that the tear is intraperitoneal a laparotomy may be performed.

Laryngeal Mirrors.—Leuwer says that, in spite of the advantages that Kirstein's method of direct laryngoscopy possesses, the fact that it is possible by its means to obtain a clear picture of the larynx in only about 25 per cent. of cases causes the old fashioned laryngeal mirror to remain the most effective instrument for the purpose. The difficulty which is inherent in this of becoming coated with moisture after a few moments of use, in spite of preliminary warming, has led to the suggestion of various expedients. It has not been found possible to produce a mirror of material which should not become coated with moisture on cooling. A number of solutions have been proposed for the purpose of covering the mirror with a film in which the moisture would be soluble and which would therefore prevent distortion of the image. Most of these, however, suffer from the disadvantage either of damaging the mirror or of being unpleasant to the taste and tending to induce gagging on the part of the patient. Another method of preventing the condensation of moisture on the surface of the mirror is to maintain its temperature longer than is the case with the ordinary instrument. The most satisfactory way of doing this is to use the mirror invented by Finkler, which is provided with a small flat chamber at the back of the mirror which can be filled with various heat retaining substances. Tests with several of these gave the following results. An ordinary mirror after a warming remained clear for one and a half minutes; Finkler's mirror empty, three and a half minutes, filled with water four and a half minutes, filled with sodium acetate six minutes, with powdered glass six and a quarter minutes, with a mixture of sodium acetate and powdered glass eight minutes, and with paraffin ten minutes. The author for over two years has used a mirror of this type filled with paraffin with great satisfaction, and states that its weight and size do not occasion inconvenience even in examining children.

The Detection of Blood in the Feces.—Citron discusses the reliability of the benzidin test and the technique of its application. He considers it advisable to make use of a larger portion of the stool than previous investigators have done and recommends triturating the entire defecation with acetic acid and taking 5 c.c. of this extract for the test. The extract is treated with 25 c.c. of ether, or preferably with carbon tetrachloride, which is more satisfactory on account of its noninflammable nature. The latter extract is evaporated to dryness in a porcelain dish, and the residue is then rinsed into a test tube with several cubic centimeters of glacial acetic acid. The reagent is prepared by adding a portion of powdered benzidin the size of a pea to several cubic centimeters of glacial acetic acid. This is added to the fluid to be tested, and the appearance of an intense green or blue color in a few seconds on the addition of several cubic centimeters of hydrogen peroxide indicates the presence of blood. Performed in this way, the reaction is far more delicate than the guaiac or aloin test, but it is necessary that the patients be placed on a diet completely free from meat for a period of two to four days before the stool is examined. Observations on a considerable number of patients suffering from various gastric disorders substantiated these views as to the reliability of the test. An interesting observation was the fact that in twelve cases of achylia a positive reaction was obtained seven times, a finding which leads the author to suggest that possibly the occult hemorrhages so demonstrated may have something to do with the anemia usually associated with this condition.

The Treatment of Puerperal Mastitis by Suction Apparatus.—Zangemeister, in discussing the treatment of this condition says that he considers it of great importance to stop nursing from both breasts immediately when the first signs of inflammation are noticed. The milk that accumulates is not removed from the breasts, for it is more logical to attempt to put the organ completely at rest as soon as possible. With the same end in view frequent doses of sulphate of magnesium are administered. It is equally important to secure mechanical rest for the gland by immobilization with bandages. Treated in this way only 19 per cent. of thirty-three cases went on to abscess formation, whereas in seventeen cases treated according to Bier's directions by means of suction, 64 per cent. suppurated. Apparently the suction tends to cause the process to progress more actively and it should not be resorted to during the earlier stages of the affection. When suppuration has already commenced the pus can be evacuated through smaller incisions if suction is used, but the method is not always effective and is less so the more recent the mastitis. The author believes it should be restricted to those cases of suppuration in which the inflammatory process is no longer extending. Even in favorable cases he does not think that the course of treatment is very much shortened by the suction method.

Pyocyanase Treatment of Diphtheria.—Muhsam describes observations made with this agent which is obtained from cultures of the *pyocyaneus pyocyanus* and consists of an enzyme which has the property of being lytic for diphtheria, cholera, typhoid, plague, and anthrax bacilli as well as for staphylococci, streptococci, and gonococci. Tubercle bacilli, however, probably on account of their fatty envelope, are resistant to the enzyme. The author found that *in vitro* the growth of diphtheria bacilli is inhibited and that even small amounts are sufficient to kill large numbers of the organism. In human therapeutics the application of the remedy by insufflation hastens the disappearance of the membrane and exerts a favorable effect on the general condition of the patients, who also experience much subjective relief. The exudate promptly disappears. Pyocyanase should be used only in connection with antitoxin, but the results of clinical tests so far justify further investigations with it.

Book Reviews.

Mosquito Life. The Habits and Life Cycles of the Known Mosquitos of the United States; Methods for Their Control, and Keys for Easy Identification of the Species in Their Various Stages; an Account Based on the Investigations of the Late James William Dupree, M.D., Surgeon-General of Louisiana, and Upon Original Observations by the Writer. By Evelyn Groesbeeck Mitchell, A.B., M.S. Illustrated. New York and London: G. P. Putnam's Sons, 1907.

This is a most readable book, as well as an instructive one, written in an easy colloquial style and dealing with a subject which unfortunately has a deep personal interest for everybody. But although the book is written in a popular style, the subject is treated in a thoroughly scientific way, and the work will be found serviceable by the specialist as well as by the lay seeker after information and the practical exterminator of the pests. The book is based largely on the notes of the late Dr. Dupree of Baton Rouge, with whom the author was associated for some time as entomological artist in the study of mosquitos, but it treats of all the species found in the United States—and their number is appallingly large—and not only those indigenous in that hotbed of mosquito life, the lower Mississippi Valley.

To the amateur who has the curiosity to make the personal acquaintance of the pests in his own locality the identification keys in Chapter XI. will be found indispensable: by means of them, with a little practice and experience, he will soon be able to determine to his satisfaction whether the creature whose life he has cut short by a well-directed slap is an *Ochlerotatus mitchellæ*, a *Grabhamia pygmæus*, an *Anopheles punctipennis*, or just a simple *Culex pipiens*. For the ordinary reader, however, the chapter of greatest interest will be that dealing with the means of destroying mosquitos or keeping them at a distance from the person. The public-spirited man who is working for the good of his neighbors as well as himself by ridding the locality of the insects, will also find assistance and direction here, but he will be discouraged to learn that, contrary to the popular belief, mosquitos can and do travel many miles from their birthplace and infest regions far removed from marshes and other breeeding places. They are also transported long distances by rail and steamer.

The genera best known by name are *Anopheles*, *Stegomyia*, and *Culex*, but it is interesting to learn that the celebrated Jersey mosquito, found from Long Island all down the eastern coast, being a salt-marsh breeder, is an *Ochlerotatus*, specifically *O. sollicitans*. Another species found in New Jersey, being a breeder in woodland rain-pools, is *O. trivittatus;* it is a fierce biter of the ankles. The Alaska mosquitos, which appear in countless swarms in the first mild days of spring, are, it seems, not an unmitigated evil, for the deer and other game are made so desperate by their stings that they rush to the rivers for relief and there fall a prey to the waiting and starving natives. But we cannot quote all the facts which the author of this entertaining book gives and can only refer the reader to the book itself, where he will find much that is curious and interesting regarding his mosquito tormentors.

A History of Nursing. The Evolution of Nursing Systems from the Earliest Times to the Foundation of the First English and American Training Schools for Nurses. By M. Adelaide Nutting, R.N., Superintendent of Nurses, Johns Hopkins Hospital; Principal of Johns Hopkins Training School for Nurses; President of the American Federation of Nurses; Member of the International Council of Nurses; and Lavinia L. Dock, R.N., Member of the Nurses' Settlement, New York; Secretary of the American Federation of Nurses and of the International Council of Nurses; Honorary Member of the Matrons' Council of Great Britain and Ireland, and of the German Nurses' Association. In two volumes. Illustrated. New York and London: G. P. Putnam's Sons, 1907.

The history of nursing may be divided into four periods: the pre-Christian era; the religious era, using the term in its technical sense as relating to the work of the monastic orders; the early secular period, and the scientific period, beginning with the establishment of training schools and the development of the strictly professional idea. The present volumes deal with the first three of these eras only, the history of the modern period being reserved for a future work.

In the section devoted to the pre-Christian period the authors review the history of the care of the sick in India, Ceylon, Egypt, Babylon, and Assyria, among the Jews, in Greece, and in Rome. In this period there was little or no distinction between the physician and the nurse, the same person not only caring for the sick, feeding them, and performing the many little offices contributing to their comfort, but also giving the appropriate remedies or conducting the sacrifices and the incantations designed to drive out the evil spirit which tormented them. With the advent of Christianity women began to take a leading part in the work of ministering to the sick and the wretched, a work which has been recognized ever since as one peculiarly their own. This work was begun by Roman matrons, early converts to Christianity, and was continued by the conventual orders. The conspicuous figures in the third, or secular period, are Fredericke Fliedner, the founder of the Kaiserwerth Deaconesses, and Florence Nightingale. There was also another less admirable type of professional nurse in this period, ignorant, careless, and dirty, yet often tender-hearted, devoted, and doing her best according to her lights—the Sairy Gamps. The beginnings only of the fourth period in the history of nursing, that of the training school, are touched upon in the final chapter of this interesting work.

The history of this branch of human activity is here presented in most readable and entertaining form. The work bears evidence of a vast amount of research and study of documents and records, the result of which has been the making of a book which both nurses and physicians will read with entertainment and profit. The illustrations are numerous and interesting, the typography and press work are excellent, and the book is one pleasing both to the eye and the mind. The authors deserve the thanks of their profession for this valuable contribution to the literature of nursing. The promised sequel, dealing with the history of training schools and of the scientific nursing of the present day, will be awaited with impatience.

Surgical Applied Anatomy. By Frederick Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Sergeant Surgeon-in-Ordinary to H. M. the King; Surgeon-in-Ordinary to H. R. H. the Prince of Wales; Consulting Surgeon to the London Hospital; Late Lecturer on Anatomy at the London Hospital. Fifth edition, revised by Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital; Examiner in Anatomy, Royal College of Surgeons, England, and University of Leeds; formerly Examiner in Universities of Aberdeen, Cambridge, etc. Illustrated with one hundred and seven figures, including forty-one in colors. Philadelphia: Lea Brothers and Company, 1907.

Although this book is intended mainly for students preparing for final examinations in surgery, it has a useful scope far beyond and should be read with profit by all who practise surgery. It makes the dry details of anatomy interesting. The surface anatomy is carefully covered, then the parts beneath, teaching much that is often neglected by medical men. Anatomy should be learned as concerned in actual dealings with disease.

Cancer of the Stomach. By A. W. Mayo Robson, D.Sc., F.R.C.S. New York: Wm. Wood & Company, 1907.

In this excellent little book Robson describes all the conditions met with in cancer of the stomach and the best way to manage them. He is an advocate of early radical operations, which is quite natural. He believes in a precancerous state and expresses himself as follows: "Probably, if we could only find it, every cancer, whether External or internal, follows on a pre-cancerous condition. Such as cancer of the gall-bladder on ulceration produced by gallstones, cancer of the stomach on chronic gastric ulcer, epithelioma of the penis on irritation under a phimosis, cancer of the bladder on papilloma or an ulcer due to calculi, and cancer of the rectum and colon on stercoral or other ulcers."

Robson cites a few of his own radical operations for cancer of the stomach with permanent cure. Whenever the excision of the growth is impossible he recommends a posterior gastroenterostomy. The mortality of this operation amounted in his hands to 3.4 per cent.—a great contrast to the death rate in those cases a few years ago. Robson takes a hopeful view with regard to the ultimate curability of cancer of the stomach. He says: "After a careful analysis of all the cases operated on I cannot help feeling that far too gloomy a view is taken of cancer of the stomach, for, if the disease be caught early, and a wide excision performed, care being taken to remove the lymphatic area of the stomach with the glands along the lesser curvature, results even better than those I have just mentioned will be obtained. Our great hope of success, I venture to state at the risk of being accused of reiteration, lies in early and complete removal." All the operations performed on the stomach are minutely described. The book will prove very profitable reading for physicians and surgeons.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

214th Regular Meeting, Held on February 7, 1908.

DR. CHARLES STEDMAN BULL, PRESIDENT PRO TEM.

Two Cases of Exophthalmic Goiter.—Dr. ANDREW J. McCOSH said that these two patients, upon whom he had recently operated for exophthalmic goiter, showed the marked improvement which very often, in fact, generally, followed the operative treatment of Graves's disease, and they also illustrated how rapidly the improvement occurred. The first patient shown was a woman, twenty-nine years old, a native of Russia, who was operated on December 26, 1907. She had suffered from the disease for three or four years, and all the symptoms were present in an aggravated form. In her case, however, the exophthalmos was less pronounced than were the nervous and cardiac symptoms. Her pulse ranged from 120 to 160 per minute. She had tried all kinds of treatment, including Roger's serum, and prior to the operation she had spent six months in the Presbyterian Hospital without showing any signs of improvement. Since the operation she had gained in flesh and strength, and the exophthalmos was disappearing very rapidly. The cardiac and nervous symptoms had also improved.

The second patient shown by Dr. McCosh was a young man who was operated on one month ago. In his case there had been an extreme degree of exophthalmos, so that the eyes appeared to be popping out of his head. His pulse ranged between 120 and 170 per minute. Various methods of treatment, including Roger's serum, had been tried without effect. About 80 per cent. of the thyroid gland was removed, and since the operation the patient had gained twelve pounds in weight, his exophthalmos was less marked, and his tachycardia was lessened.

Dr. McCosh said he had operated on twenty odd cases of exophthalmic goiter, and as his experience with this class of cases increased, the more he favored operative interference. If the cases came into the hands of the surgeon during the earlier stages of their disease, the operative mortality would be very low. Probably three cases out of every four were relieved by operation, and certainly one-half were cured. Of his twenty odd cases, four had remained perfectly well for periods ranging from four to five years. There was a noticeable improvement almost immediately after the shock of the operation had passed off, and this improvement was continuous in the majority of cases. The mortality of the operation at present ranged between six and ten per cent. Among the cases that he had operated on there had been but one death: this had occurred in a woman upon whom he operated for the first time eight years ago, taking out one-half of the gland. Her symptoms recurred after two years, and he again operated, taking out most of the rest of the gland, and the patient died of acute thyroidism a few days after the operation. In former years the operation was not sufficiently radical, not enough of the gland being removed. In his later operations, he aimed to take out about 75 per cent. of the gland. It was not always an easy matter to take out just as much as one wished to do, because the gland was usually adherent and very vascular. Both the extent of the adhesions and the vascularity were generally much greater in cases of exophthalmic goiter than was apt to be the case in ordinary hypertrophies of the thyroid gland.

Dr. LEWIS A. CONNER said that a common difficulty connected with the various methods of treating exophthalmic goiter was that the benefit that resulted from them was often only temporary, and he was under the impression that this same objection might be raised to the operative treatment.

Dr. McCOSH, in reply to a question, said he was unable to state how many permanent cures he had had. Many of his patients had been lost sight of. He knew of four, however, who had remained well for periods ranging from four to nine years. During the past three months he had operated on seven patients. In all of these the benefit derived from the operation was already very evident. With one exception, improvement in the three cardinal symptoms was pronounced. In one woman, however, the delusions of persecution etc., still persisted.

Dr. EDWARD G. JANEWAY said that of all disorders, exophthalmic goiter was apparently the one in which hospital treatment was particularly contra-indicated, because among hospital surroundings it was practically impossible to obtain consistent therapy in the care of those patients, and the excitement they were subjected to did not contribute to their welfare.

Some Observations of the Effects of Tobacco in Surgical Practice.—By Dr. C. BOLTON BANGS. (See page 421.)

Dr. GEORGE L. PEABODY said that, while everyone had probably seen instances where the sudden withdrawal of tobacco was followed by the advent of nervous symptoms, this had not been a very frequent occurrence in his experience. He regarded Dr. Bangs's observations as of great interest. It was scarcely feasible to let people who were very ill smoke in hospital wards, but, on the other hand, the period of convalescence from a surgical operation was clearly not the time to choose for interfering with any drug habit. In referring to the rapid effects of inhalations of tobacco smoke, Dr. Peabody said it was a well-known fact that morphine or any other substance in solution introduced into the air passages, and especially into the trachea, was rapidly absorbed by the blood. Absorption by that method was even quicker than by subcutaneous injection, and that this might account for the rapidity of effects produced by inhaling the smoke of a single cigarette.

Dr. A. ALEXANDER SMITH said that, from a medical standpoint, he was thoroughly convinced that there was a good deal in the suggestion made by Dr. Bangs in connection with the effect of the withdrawal of tobacco, and he considered it a good therapeutic measure in dealing with patients who had been addicted to the use of tobacco, to allow them to resume the habit in very early convalescence, thus not only adding to their comfort, but producing a very perceptible beneficial influence on the heart. The explanation of the latter was probably found in the influence of tobacco on the sympathetic nervous system.

Dr. JANEWAY called attention to the fact that tobacco increased the blood pressure, and in that way its beneficial effects might be explained in some cases. He knew of instances, however, in which no apparent effect had been produced by the sudden withdrawal of tobacco in persons who had been addicted to its excessive use for many years.

Dr. CHARLES STEDMAN BULL said he had noticed the depressing effect of the loss of tobacco on chronic smokers in operative cases. He recalled one case of senile cataract in a perfectly healthy man who had been a smoker all his life. After the extraction of the cataract it was noticed that the man was restless and suffered from more or less insomnia and pronounced disturbance of his digestion. Acting on the supposition that his symptoms were due to his confinement to bed, he was allowed to sit up in an easy chair on the third day. An inspection of the wound at this time showed that it was wide open, without any secretion or the slightest evidence of any inflammatory process. After eight days the wound was still open without any reason to account for it. It was then learned that he had always been a heavy smoker, and he was thereupon given permission to resume his pipe. That night he slept soundly for the first time since the operation, and on the following day the wound in the eye was found to be healed from end to end. Dr. Bull said he knew of several instances parallel to the above

Dr. Lewis A. Conner, in reply to a question as to whether nicotine was now ever used medicinally, said there was some doubt as to whether nicotine was the only or even the chief agent in producing the sedative effects of tobacco smoking. There were probably other factors, the influence of which was not yet thoroughly understood.

Dr. Bangs, in closing, said the main object of his paper was to call attention to some of the conditions following operation that were not explicable on strictly surgical grounds, and the result of his experience had led him to believe that they were in some instances due to the sudden withdrawal of tobacco in chronic smokers. In connection with this general subject he mentioned the fact that he had recently read an article in the Medical Record in which glycosuria was attributed to the use of tobacco.

Preliminary Report of a Case of Cerebrospinal Meningitis of Streptococcus Origin Apparently Cured by Subdural Injection of Anti-Streptococcus Serum.—By Dr. George L. Peabody. (See page 423.)

The Mackenzie Ink Polygraph.—Dr. Lewis A. Conner demonstrated this instrument.

NEW YORK PSYCHIATRICAL SOCIETY.

Stated Meeting, Held January 8, 1908.

August Hoch, M.D., President, in the Chair.

Psychogenesis in Dementia Præcox.—Dr. August Hoch of Bloomingdale Hospital, White Plains, read this paper. Building upon the work of Freud, Jung, Bleuler, and Adolf Meyer, he tried to show by an analysis of two cases, fully reported, how conflicts or longings, which had existed for a long time, gradually grew until they became dominant. By an analysis of the patient's life certain traits were demonstrated as well as certain external conditions which accounted for this gradual growth. It was shown how similar conditions existed in simple paranoiac states, but that in dementia præcox the situation was different for the reason that the mental trends represented by the conflicts or longings were of such a nature that there was a strong aversion on the part of the personality to allow them to become fully conscious. For that reason they were suppressed and only manifested themselves through substitutions or through the appearance in the minds of portions of the disturbing trends, or peculiar incomprehensible reactions. Such manifestations of undercurrents were then logically disconnected; the thoughts, delusions, hallucinations, and acts which thus arose had no conscious motivation; the natural harmony between effect and ideation was disturbed, etc. If this became fixed the mental mechanism no longer dovetailed with life and reality, the interest vanished, and a certain form of dementia developed. It was, of course, not claimed that this was the only explanation of the deterioration, but probably an important factor in some cases. In other words, it was shown in the two cases that the clinical picture was explained by the conflicts and the reactions to it, that the conflicts had existed long before and were of gradual growth, while the latter could be accounted for by the absence of sufficient balancing factors. Of interest is also the fact that one of the cases, which presented a very perplexing clinical picture, was, by careful psychoanalysis, reduced to a comparatively simple situation, and that it was possible to use this knowledge in the treatment with very gratifying results, the improvement being always so clearly related in time to the therapeutic talks that an accidental coincidence seemed hardly probable.

Dr. Adolph Meyer emphasized the necessity of studying the psychogenetic data. The records of Dr. Hoch, just as they were, spoke more convincingly than any comments. The aversion of most physicians came from their judging on the ground of poorly taken histories. The patients often preferred the method of ignoring the sore points; but these cases presented totally different figures concerning relapses than those who were able to enter squarely upon a psychoanalysis. The choice of a helper was often difficult. In one of Dr. Meyer's cases the mother had a very good grasp on the factors which led to the disorder, but now as little talent in correcting them as she had had in preventing the breakdown. Physicians were slow about seeing that many things they demanded from families and patients on the ground of "common sense" were really good illustrations of beginnings in the management of psychogenic factors. One of the most direct acknowledgments of the principle that had come to his notice lately was a statement of Dr. H. S. Noble of the Connecticut State Hospital at Middletown, in which he said: "The constant personal attention of a congenial, sensible companion can do more toward the restoration of curable forms of mental disease than any other agency with which we are at present acquainted."

Dr. William L. Russell of Poughkeepsie, N. Y., was confident that there must be considerable value in such analyses of cases as Dr. Hoch had been able to make—analyses which could hardly be hoped for except under the most favorable conditions—and while the method might not explain the nature of the disease, it certainly gave promise toward enabling one to point out preventive and therapeutic measures. Dr. Russell asked Dr. Hoch to explain his views as to how the "longings" operated in bringing about the final breakdown.

Dr. Smith Ely Jelliffe said he had had the pleasure a year ago of listening to Dr. Hoch's initial paper, with which he was in entire accord, and at that time he had expressed the belief that if one was able to appreciate the character of these conditions early enough, by methods so ably outlined by Dr. Hoch—methods in which there was not the slightest doubt that the right track was to be found—the results pointed out in the second case would follow. He was glad the therapeutic method so amply verified the hypothesis laid down by Dr. Hoch. He agreed with Dr. Meyer concerning the desirability of getting at the environment from an inside point of view. Many dementia paranoides cases were made so largely by the stupidity of the family. In this connection he mentioned a family which had come under his observation, in which there were six children, every one of whom exhibited the general trend of this type of cases. One particularly showed the paranoid character. This youngest child exhibited the exact equivalents of the second case of Dr. Hoch's paper. He had been unable to explain the genesis of the condition in these children until he met the mother, when, after four hours' talk with her, it became evident that her maladjustment to life, her strained interpretations of the situations which came up in the children's lives and in her own life, rendered her the most important factor in the genesis of the condition, and yet she was the most intelligent and best able of all those involved to rectify the maladjustment in the lives of the children. Regarding the general features of which Dr. Hoch had spoken, he believed there was no occasion for a discordant note.

Dr. Pearce Bailey asked Dr. Hoch whether the memory of the sexual trauma in the second case had been obliterated from the consciousness, and also what method he employed to elicit the history thereof. It was absurd, of course, for one who had not seen the cases to criticise the diagnosis, and yet the question might arise as to the second case not having been one of dementia præcox. It had many points in common with cases of a hysterical character with a history of sexual trauma. The sudden change for the better after a single explanatory talk was contrary to the ideas he had had of dementia præcox. If a cure could be effected so rapidly, it would seem that some of the accepted classifications would have to be materially

changed. Throughout the whole range of psychiatry, both in the actually insane and in the unstable, the importance of a single emotional event in the life of the individual was commanding more and more attention. A powerful emotion of a suggestive character might spur on to immediate action in the unstable. An emotional event also might make its deep impression on personality, lie dormant for years, and then spring forth again, giving a dominant note to a psychosis. He cited the case of a man who, when age and ill health came on, reverted to an incident which had made a deep impression on him as a boy, and which had been forgotten all through the years of health and prosperity. As the study of psychiatry proceeded, the speaker thought, the effect of emotional events upon different classes of individuals would possibly form a better method of classification than the cruder one of grouping by diseases. In conclusion, he asked Dr. Hoch if it were not easier to get at and benefit the disturbances resulting from emotional complexes if the patients were not fully aware of them.

Dr. Maurice C. Ashley of Middletown, N. Y., said that alienists were coming more and more to realize that each case of insanity is a law unto itself, demanding a most careful analysis if one's full duty was to be done by it. They must not be content when they obtained sufficient facts for a diagnosis, but they must go further; they must learn of every factor which had had to do with the mental and physical health of the individual in order that they might know whether or not any of these factors have had to do with the developing psychosis, and whether they could be eliminated. The tendency in the past had been to look only for sufficient facts for diagnosis and classification, rather than to study the individual in an endeavor to get at the bottom of *his* particular difficulties, as Dr. Hoch had done. The general practitioner and specialist who saw these cases before the psychosis had fully developed had an excellent opportunity to study and treat such patients successfully. When they came to the state hospitals the psychosis had usually advanced so far that it was much more difficult for the physician to get at the bottom of the psychosis and for the patient to get right with himself than it would have been at an earlier stage.

Dr. A. R. Diefendorf of Middletown, Conn., said the development of this new field in psychiatry had been aided by an appreciation of the fact that one's duty in a hospital must not be scattered over the whole multitude, but must be centered on the few who could derive benefit from one's labors. He cited the case of a girl who exhibited the same features presented by Dr. Hoch's second case. The true significance of the sexual trauma was brought to light by the sensations which the patient experienced while under the influence of gas for the extraction of two teeth. It was difficult to know just how to deal with these cases, just when to attack the ideas and just when to leave them alone, and to be sure that one would do good and not harm. Success depended somewhat upon the intuition of the operator. He had noted that it was difficult to make progress with men and boys, who did not seem to have the same experiences as women and girls. He cited the case of a young man with whom he felt sure there were hidden psychogenic influences, but he could not get at them. Nevertheless, intelligent companionship and life in the open for three months had seemed to effect a cure.

Dr. L. Pierce Clark said, in searching for the causative agent of his new eye syndrome in dementia præcox, he was impressed that the psychosis had principally a somatic cause. To determine this as well as the psychogenetic factors, he believed an extra-asylum study of the disorder was absolutely necessary. The burden of the solution of the problem rested with the physician in private practice. In order to run to earth these causative factors he had instituted a method of careful mental and physical analysis of all cases of neurasthenic habits in adolescents applying at the Nerve Department at the Vanderbilt Clinic. An analysis of the cases is made independent of the question whether the symptoms point directly to a præcox psychosis or not. The final outcome of a number of such cases would prove of great value, whether they deteriorated into the dementia præcox or not. He had been urged to do this, furthermore, as there seemed to be a pressing public need of a study and consideration of normal and pathological habits of adolescents. He hoped the future might produce specialists in adolescents, as Stanley Hall had also suggested.

Dr. G. H. Kirby had met few cases in which the analysis could be pushed to such completeness as Dr. Hoch had so skillfully carried it in the cases reported. The unraveling of the psychogenic elements entering into a case certainly threw an important light on the symptomatic picture and explained many reactions that would otherwise have to pass merely as peculiar, erratic, senseless, or not understandable—features that were usually referred to as characteristic for dementia præcox. A review of the cases exhibiting the dementia præcox form of reaction seems to show that the deteriorating cases had nearly always given warnings of rather grave constitutional anomalies, such as lack of natural instincts and perversion of normal interests or various defects in character and judgment. On the other hand, cases showing a dementia præcox-like outburst, but terminating in *recovery*, had, as a rule, shown none of the serious defects just mentioned. So, after all, one must be guided largely in the prognosis by the previous standard and efficiency of the individual.

Dr. James J. Putnam of Boston said that his own belief for a long time had been thoroughly in accord with the conclusions of Dr. Hoch, namely, that the environment of the patient and the reaction to the environment might be the controlling influences in a given case. He was glad to hear Dr. Hoch emphasize this point. The doubt raised by Dr. Bailey as to the diagnosis of the second case could only be solved by determining what dementia præcox was, and that was impossible. In Jung's book reference was made to "fixed mental reactions." This recalled the fact that von Basch and others had spoken of the tendency to arterial spasm as being the first thing which in some way leads to arteriosclerosis, a functional condition leading to a structural condition, but perhaps not always to an equally unfavorable structural condition. We would like to believe and might fairly hope that the best sorts of influences, applied sufficiently early, might change the whole trend of subsequent events. In the Massachusetts Hospital out-patient department several trained women were employed to do the very sort of thing Dr. Clark was having done at the Vanderbilt Clinic. It was their duty to learn as much as possible about the family and the home life of such patients. An effort was also being made to study the children of psychopathic families. If dementia præcox was to be arrested the attempt must be begun early and by aid outside the family.

Dr. Hoch, in closing the discussion, said that Dr. Bailey and Dr. Putnam had raised the question of the differential diagnosis between dementia præcox and hysteria. Of course the differential diagnosis was sometimes difficult, all the more since, as yet, the relationship of dementia præcox and hysteria were not understood. There were cases which began like hysteria and terminated like dementia præcox, and, on the other hand, he had under observation a case in which the disease began as a typical dementia præcox, with a long history of wholly uncorrelated delusions and hallucinations, followed by a catatonic stupor of about a year's duration, but a patient who now had lost practically all dementia præcox symptoms and manifested only something like an astasia-abasia. In regard to the transition from functional to organic changes,

there were certain analogies in general medicine. The speaker thought it was something of this sort to which Dr. Meyer referred in his paper on dementia præcox, when he said that misapplication of instincts and faulty habits were bound to undermine not only the functional mechanism, but the organ itself. Questions had been asked about the method of psychoanalysis. This varied according to circumstances. Dr. Hoch first thought that association experiments were necessary in each case, but this was evidently not so. Very often the symptoms of the disease, the delusions, hallucinations, or peculiar acts, or perhaps an accidental remark of the patient, gave a sufficient lead as to the direction in which it was necessary to probe. The matter was always tedious and had to be taken up again and again, and one sometimes found the way blocked entirely and had to leave the analysis for the time being. Sometimes, as suggested, the question arose whether one had a right to proceed with the analysis. He was inclined to think that the danger of talking about personal matters was, on the whole, overrated. Nevertheless, it was a matter which needed a good deal of consideration, and which the skill, tact, and experience of the observer had to decide in each case. Certainly it is often unnecessary to go into details of subjects which are unpleasant, if these details are not absolutely essential, no matter how much our desire for accuracy and completeness would tempt us to proceed.

THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENITOURINARY SURGERY.

Stated Meeting, Held December 18, 1907.

DR. FOLLEN CABOT, CHAIRMAN.

A Case of Surgical Kidney, with Specimen.—Dr. JAMES PEDERSEN reported this case. The patient was a spare man, 22 years old, single, who came under the speaker's observation July 30, 1907, with the following history: Since his tenth year he had had occasional attacks of scalding urine and pain in the penis, with pain in the region of the left kidney. The intervals between these attacks had been about one month; sometimes longer. The duration of the attacks had varied from a few days up to ten days. It was said that his urine always had a bad odor, even when fresh. Its sediment was described by the family as having been pinkish-brown and coarse. Exposure to cold and undue fatigue were mentioned as exciting causes of these occasional attacks. In the latter part of May, 1907, the patient developed a urethritis. He took capsules of his own prescribing, and the discharge ceased in a week. About a week later, namely on June 6, while surveying in good weather, he developed great frequency of urination, with tenesmus. That night he had coitus. The discharge reappeared the following morning; the frequency and tenesmus increased, and forty-eight hours later terminal bleeding was noticed. On the following day, June 9, considerable pain developed in the left kidney region. The next day he went to bed and remained there for three weeks, during which time the frequency, tenesmus, and kidney pain continued, and a milky urethral discharge was apparent off and on. Finding that he was not improving, he decided to return to work. After one week he was again compelled to take to his bed. On the morning of July 9 he was awakened with a sudden, very severe pain in the left kidney region, and he noticed that his urine was thick and extremely offensive. The kidney pain became continuous and the frequency and tenesmus increased. After he had been in bed one week the discharge ceased, but all the other symptoms remained unabated. Between July 8 and 30, when Dr. Pedersen first saw him, he had lost thirty-two pounds. He gave no history of chills, but had had profuse sweats, with undoubted rise of temperature. There was no personal family history of tuberculosis. There was no history of scarlet or typhoid fever or of gastrointestinal disturbances. The patient was markedly anemic and emaciated. The urine was loaded with pus of a dirty, grayish color and had a putrid odor. The left kidney was palpable and tender. After the patient had been carefully nursed for one week a rapid nephrotomy for drainage was performed. A large pus sac was found, from which a volume of extremely offensive pus was evacuated. The patient rallied satisfactorily from the operation and began at once to gain in health and strength. After about two weeks, however, the kidney tissue showed a persistent tendency to close, and the urine, which had been perfectly clear during those two weeks, again became charged with pus from the diseased kidney. All attempts to maintain drainage by way of the loin failed. Finally, on October 29, 1907, the patient being in fairly good condition, nephrectomy was performed. The shock was profound, but he responded to the active treatment employed and rallied within four hours. He was making a satisfactory recovery. The uranalysis prior to the nephrotomy was as follows: Color, amber; turbid, with a heavy gray precipitate; strongly acid; albumin present; no sugar nor indican; urea, 11 gr. per ounce; a small amount of mucus; a large amount of pus, forming almost the sole precipitate; no blood; no casts; large numbers of bacteria; no crystals; abundant amorphous deposit. The bacteriological examination of the heavy sediment showed short chains of streptococci, staphylococci, and a few diplococci. No gonococci; no tubercle bacilli. The report of the pathological examination by Dr. Sondern was as follows: "The capsule is not thickened, but is infiltrated with red blood cells and is separated from the cortex in places by considerable hemorrhage. There are large areas of hemorrhage in the cortex and medulla near the pelvis. The blood-vessels are congested. The glomeruli are congested and some of the capsules of Bowman contain blood. The cells in some of the convoluted tubules are swollen and almost occlude the lumen of the tube; in other tubules the epithelium is disintegrating. Section into the pelvis shows desquamation of epithelium. Beneath the epithelial line is a thick zone of round cells which is vascular and congested. Beneath the zone of round cells is a thick layer of dense fibrous tissue which contains many accumulations of inflammatory round cells. There is some superficial necrosis and hemorrhage in the pelvis. No tubercles found. Diagnosis: Chronic and acute parenchymatous nephritis; ulcerative and hemorrhagic pyelitis." The precise etiological factor in this case, Dr. Pedersen said, could not be determined. From the history, however, it was fair to assume that this patient had been carrying a chronic pyelitis, probably due to the colon bacillus, for ten years, and that from his posterior urethritis he developed an ascending infection which brought about the lesion that endangered his life.

Dr. MARTIN W. WARE suggested that the cystitis in this case might have been due to a descending process from the kidney.

Dr. PEDERSEN replied that the patient had had no symptoms of cystitis until after he had contracted urethritis and the posterior urethra had become involved. After that he developed this sudden attack of kidney pain. He therefore believed that the kidney abscess was the result of an ascending infection.

Dr. WARE called attention to the fact that in the specimen shown by Dr. Pedersen the lesion was in the cortex of the kidney rather than towards the pelvis. This seemed to indicate that the infection was hematogenous, because in the ascending variety the pelvis was more apt to be involved.

Dr. PEDERSEN said that possibly there was both a hematogenous and an ascending infection, though Dr. Sondern, in his pathological report, did not make any mention of infarcts.

Dr. FOLLEN CABOT said the fact that the man improved to

such an extent after removal of the kidney made it appear more like a descending than an ascending infection. In cases of ascending infection the bladder trouble was usually of long standing.

Dr. Victor Pedersen exhibited an irrigating sound and an ointment applicating sound for the deep urethra.

Dr. A. A. Berg, in discussing reflex anuria, to which Dr. Pedersen had referred, said he did not think there was such a thing. In the cases that had come under his observation, he could not recall a single instance in which the anuria was secondary to stone or traumatism affecting one kidney, and he was inclined to believe that the suppression of urine was the result of a septic condition induced by the operation, or, perhaps, as French explained it, the destruction of the cells of the injured kidney produced a similar or so-called cytotoxic action on the cells of the opposite kidney. The speaker said he thought it was about time that we arrived at some definite conclusion in regard to the presence or absence of the so-called renorenal reflex.

Dr. Robert H. Greene said there were certain instances where the anuria was apparently due to shock following operation. The condition was also not uncommon in hysterical women, and was apt to be associated with floating kidney.

Dr. Cabot asked Dr. Berg how he would account for the immediate anuria following operation. In one of his cases of attempted cystoscopy in which he even failed to see the bladder there was a resulting anuria lasting twelve hours. In that instance there was no suspicion of sepsis.

Dr. Berg raised the query whether an anuria immediately following cystoscopy, such as that referred to by Dr. Cabot, should be regarded as one of true anuria? Such a phenomenon was not infrequent after urethral catheterization; it was perhaps due to a temporary nervous shock, and the patients apparently did not suffer from it. The type of anuria he had reference to was that in which there was complete anuria after an injury or operation affecting one kidney, and the question arose whether we were to ascribe such anuria to a reflex origin or to a septic or cytotoxic effect.

Dr. Francis C. Edgerton said he had never made applications of ointment to the urethra, because he had always believed that such applications would simply cover up the disease. They surely did not mix with the urine, and, unless they were composed of remedies that dissolved very quickly, they would exert little beneficial effect. The speaker said that in cases such as those described by Dr. Pedersen, where the trouble was confined to the posterior urethra, he had had good results from the use of ichthyol in glycerin. He was inclined to believe that glycerin acted very much as did a tampon and exerted a hygroscopic effect, thus reducing the inflammation, while the ichthyol had a stimulating effect. Dr. Edgerton said that the irrigating sound shown by Dr. Pedersen would doubtless prove a very useful instrument in old stricture cases with urethral pockets left by the passage of an instrument or following a perineal section; in those cases he had often found it exceedingly difficult to introduce a rubber instrument.

Dr. James Pedersen said he agreed with the previous speaker that the irrigating sound would prove a very serviceable instrument, particularly as it accomplished a double purpose and thus saved instrumentation, which was an important point in dealing with the urethra. In regard to the second instrument shown, Dr. Pedersen said he had never used ointments in the urethra and had been rather opposed to that method of treatment. At the meeting of the American Genitourinary Association two years ago, Dr. Hugh Young showed a somewhat similar instrument, which met with an indifferent reception. Dr. Pedersen called attention to the fact that unless the ointments applied to the urethra would liquefy in fluid the temperature of the urine in the bladder, portions would be likely to pass backward into the bladder and form a nucleus for stone.

Dr. Robert H. Greene said that some years ago he made applications of ointments of various kinds to the urethra by means of the old-fashioned grooved sound, with indifferent success. The irrigating sound shown by Dr. Pedersen doubtless had its uses in certain cases. In cases such as those referred to by Dr. Edgerton, where superficial urethral pockets interfered with the passage of a soft catheter, the speaker said he had successfully employed the French instruments with the bulbous end.

Dr. Edgerton said the cases he had reference to were those in which the pockets had formed after stricture or prostatic abscess where the abscess had either ruptured or had been opened into the urethra. He recalled two such cases where he had found it absolutely impossible to obtain entry beyond the prostatic urethra until the finger had been inserted into the rectum and had raised the end of the catheter.

Dr. Victor C. Pedersen said the objections raised against the use of salves in the urethra did not hold good in all cases providing the base of the ointment was lanolin and glycerin, about 3 or 4 to 1. Of course he did not advocate their use in cases where germs in the shreds were still present, but salves should be tried in those desquamating conditions where fluid applications were unsatisfactory. The speaker said he did not favor the use of urethral bougies; these were too hard, and acted as foreign bodies in deep urethra. The use of ointments in the urethra in well selected cases, and after other well-known methods of treatment had failed, he was convinced had a definite though limited field of usefulness. The irrigating sound would be found useful in certain cases, usually post-operative ones, where it was impossible to introduce a soft instrument into the bladder. He said he had seen two cases of reflex anuria. In one case a sound had been passed and an effort was then made to pass a soft rubber catheter. The man returned on the following day and stated that he had had a chill and a rise of temperature and that he had passed no urine until very late the previous day. He was given quinine and urinary antiseptics and the anuria disappeared. The other case was that of a young man who had had his prostate removed for tuberculosis; after the operation, every time an instrument was passed through the urethra, even a soft catheter, he would have a rise of temperature to 104° or higher, with total suppression of urine, and a delirium almost amounting to mania. It was suggested that there was some trouble with one of his kidneys, and an *x*-ray picture showed a stone in the right kidney, which was subsequently removed.

Dr. Berg said he knew of one case where death had occurred twenty-four hours after the passage of a soft catheter through the urethra, the fatal result being due to a septic condition that immediately followed the urethral instrumentation. He had seen a temperature of 105° develop within three hours after a laparotomy, with septic peritonitis, and death within twenty-four hours.

Dr. James Pedersen said there was no question that these septic processes could occur with exceeding rapidity, the patient sometimes being overwhelmed by them and dying suddenly. He recalled the case of an old man who died within a few hours after being catheterized for urinary retention, and that of a young man who died eight hours after a simple internal urethrotomy. In both instances the patients were apparently overwhelmed by some form of sepsis. The speaker said he believed in the so-called reflex type of anuria following instrumentation of the urethra, and thought it could be classified as a species of traumatic shock which results in a total inhibition of the kidney function by way of the nervous system.

SECTION ON SURGERY.

Stated Meeting, Held January 10, 1908.

DR. CHARLES H. PECK IN THE CHAIR.

Four-Ounce Brain Tumor.—Dr. JOHN F. ERDMAN presented this case and specimen. This woman had one arm completely paralyzed from the shoulder down. There was no involvement of the lower extremities. Four or five days after the removal of the brain tumor she noticed a returning sensation, as if something burning, and was able to raise the arm from the side of her body. There was a rapid return of function in the upper extremity.

Vaginal Drainage of the Ureter After Nephrectomy.—Dr. A. ERNEST GALLANT presented a patient whom he saw December 29, 1905. She was then troubled by a cystic tumor lying on the left side of the abdominal cavity with its center opposite the umbilicus, movable up and down two or three inches and seeming to have arisen from the pelvis. An anterior exploration showed it to be retrocolonic, and made up of a dilated kidney and pelvis. On January 17, 1906, the pelvis of the kidney was opened and emptied of from 1,000 to 1,500 c.c. of urine. On exposing the ureteropelvic junction the obstruction was found to be due to an S-like bending of the ureter, bound down by dense adhesions completely shutting off the urinary flow. As soon as the bands were loosened a probe could be passed through the ureter to the bladder. Owing to the large size of the kidney no attempt was made to suture it, but gauze packing was placed under it and the urine flowed freely for several days until the packing was removed. Later the kidney seemed to drop, and the obstruction recurred on April 25, 1906, and then it was deemed advisable to remove the kidney, leaving part of its pelvis and the ureter. From that time until September 18, 1907, there was more or less discharge from the loin, evidently mixed with urine. A catheter was inserted into the ureter and easily passed to the cavity in the loin, and with this as a guide, stiffened by a metal probe, an incision was made through the vagina exposing the ureter. While endeavoring to draw down the ureter with mousetooth forceps before resection, the bladder was torn into and the finger was used to hook down the ureter, rendering resection quite easy. The ureter was cut off about an inch from the bladder, and the pelvic end was brought down into the vagina and sutured in such a way as to expose its lumen in the vaginal vault. Two sutures were inserted through the vaginal wall and the bladder end of the ureter closing it off. On September 30, 1907, the vesicovaginal fistula was closed by silk-worm sutures. Last week the lumbar sinus closed. A small papilla in the vagina marked the site of the ureteral implantation.

Kidney Cases Presenting Some Unusual Features.—Dr. A. A. BERG presented these patients.

Tuberculosis of Kidney.—The first case was that of a woman, 28 years old, who had suffered from renal tuberculosis for one year, the disease running its ordinary course of frequent and painful urination and cloudy urine. At some hospital in Brooklyn a suprapubic cystoscopy was performed, but evidently the findings were not appreciated. The suprapubic wound was drained and the bladder irrigated, but with no improvement. The fistula closed when the suprapubic drain was left out, a rather unusual thing. She was admitted to Mt. Sinai Hospital last autumn with a slightly discharging suprapubic gstula. She had all the ordinary signs of kidney tuberculosis as usually found. A cystoscopic examination showed large ulcerations of typical type. The urine contained large quantities of thin pus and tubercle bacilli, which at once cleared the diagnosis. Ureteral catheterization showed the urine from the left kidney to be clear, but containing albumin and casts. The question arose whether we were justified in removing the diseased kidney on account of the apparent disease of the other organ. The usual procedure was pursued in this case for determining the functional capacity of the left kidney, viz., estimating the amount of urine that kidney was excreting, its character, urea contents, etc., and from these data we made up our minds that the left kidney was secreting sufficient urine to warrant the removal of the diseased kidney. The method employed in this case was what Dr. Berg said he wished to call attention to. In cases where there was considerable perinephritis with dense adhesions, there was always a great deal of bleeding with tremendous shock to the patient and probably many cases had been lost from the extent of the procedure and the loss of blood it entailed. To avoid these risks it was suggested that, instead of doing the nephrectomy in the usual manner, to cut through the fibrous capsule and shell the kidney out of the latter. This took but five or ten minutes and there was practically no bleeding. A rubber ligature was passed around the pelvis of the kidney and its amputation performed. A subcapsular nephrectomy was the operation done.

Total Anuria from Obstruction of One Ureter.—The second case was that of a woman who came into the hospital last summer. For a number of years past she had complained of attacks of kidney colic on the right side. About one week before her last seizure she had a particularly severe attack of kidney colic, and again located upon the right side; it was not accompanied by hematuria. The pain increased for one week. Suddenly she noticed that she voided no urine and then she applied for medical treatment. In spite of the use of all the customary methods for stimulating the secretion of urine she passed none for seventy-two hours. There were no signs of uremia. She had some temperature. Her physical condition was good. She was immediately cystoscoped and the ureters catheterized. No obstruction was present in the ureters up to the kidney pelves, and no urine came from the kidneys through the ureteral catheter. The kidneys themselves could not be palpated; they were not enlarged. There was no tenderness on palpation. Upon exposing the kidney of the right side it was found to be lying in a transverse position, with its pelvis upward and the cortex downward, the ureter passing over its inner pole. The kidney was stony hard and there was some perinephritis. It was moderately enlarged and there was some congestion. It was easily restored to its normal, the up and down position. No calculi were present. Incision into the kidney in the usual fashion was made and a drainage tube was introduced into its pelvis. Immediately the urine commenced to flow from the tube in large quantities. The next day the patient passed urine through the bladder and secreted abundantly through the drainage tube. The post-operative course was somewhat complicated by a pyelitis and subsequent abscesses in the kidney. She made a gradual but uninterrupted recovery.

Unilateral Surgical Kidney Following Urethral Instrumentation.—The third patient he presented was a boy, 15 years old, who had had a spina bifida successfully operated on. He suffered from incontinence of urine and for this he applied to a city hospital for treatment. It was suspected there that he had stone in the bladder and an examination was made with the searcher under strict antiseptic precautions. Nevertheless in twenty-four hours he was seized with chills, a rapid and high rise in the temperature and marked prostration. Ten days later he was brought to Mt. Sinai Hospital. He then had high temperature, chills, was in a poor physical condition, and there was a large amount of pus in his urine. The right kidney was enlarged and tender. Incontinence was present. The meatus and urethra were too

small to permit of a cystoscopic examination, and they were compelled to content themselves with a palliative course of treatment and observation. The high temperature and chills continued, with marked pain and tenderness and enlargement of the right kidney. A few days after they decided to cut down upon it. The right kidney was found to be moderately enlarged and containing many miliary abscesses. The pelvis was much dilated and contained purulent urine. The pelvis of the kidney was drained, hoping that the abscesses of the kidney would yield to more conservative treatment than a nephrectomy was presumed to give. With a nephrotomy and drainage the boy improved. The temperature fell to 100°. Later the temperature rose to 104° and 105°, his physical condition became worse, and they had to resort to further operative interference. In order to determine the presence and condition of the left kidney, it was cut down upon, for the urethra was too small to permit of the introduction of a cystoscope. It was found to be of normal size but surrounded by a perinephritis. Acting upon the suggestion of Dr. Gerster, he introduced a trocar into the pelvis of the kidney, hoping that he might thus get a sufficient amount of urine for an examination. But in this case the trocar became plugged with blood and no urine was obtained. He could not understand why there should be so much of a perinephritis, but he supposed the condition of this kidney was the same as the other. He did a subcapsular nephrectomy, as in the above case. There was practically no shock and the boy rallied well. The temperature had been normal since, and he now was in good physical condition. Numerous abscesses were found to be present in the cortex of the kidney.

Nephrolithiasis in Horseshoe Kidney.—The fourth case was that of a man who gave the ordinary history of a nephrolithiasis. The *x*-ray showed a stone in the cortex of the right kidney. A cystoscopic examination was not done, reliance being placed on the *x*-ray findings, a very unwise procedure. The right kidney was cut down upon and an intense amount of perinephritis was noted. On separating the adhesions he found he was dealing with a horseshoe kidney fused at the lower pole. It was impossible to raise the kidney to the wound. Needling the kidney did not reveal the stone and inasmuch as it was impossible to deliver the kidney into the wound the search for the calculus was ineffectual. However, the patient subsequently passed a stone which, in all probability, the manipulation had started down into the pelvis.

Rupture of the Kidney.—The fifth case was that of a woman, whom the speaker showed to demonstrate the conservative course pursued in a case of the severe rupture of a kidney caused by being run over by an automobile. The kidney was torn in an oblique fashion from the upper junction of pelvis with cortex to its middle and lower third. A second rent was in a longitudinal direction along the inner border from the pelvis to the lower pole. The patient was seen four hours after the injury. The kidney was delivered into the wound and the rents repaired. An uninterrupted recovery took place.

Simple Cyst of the Kidney.—Dr. George E. Brewer presented a patient who was admitted to Roosevelt Hospital with symptoms of intermittent hydronephrosis, having experienced a number of attacks of acute pain in the right lumbar region, extending down along the course of the ureter to the groin. These attacks would be accompanied by swelling and more or less tenderness over the right kidney region. On examination the kidney was easily felt below the ribs, apparently occupying a vertical position with the patient on the back. What appeared to be the round extremity of the upper pole of the kidney could be felt through the anterior abdominal wall. On exposing the kidney by a lumbar incision it was found to be freely movable and lying in its normal position on the quadratus lumborum muscle, and what appeared to be the rounded upper pole proved to be a large translucent thin walled cyst, springing from the anterior surface of the organ, just above the sinus. This was readily enucleated, the raw surfaces drawn together by two catgut sutures, and the kidney anchored in its normal position. She made an uninterrupted recovery.

Double Seminal Vesiculectomy and Vasectomy.—Dr. Brewer presented a negro, 40 years old, who was admitted to Roosevelt Hospital suffering from an abscess of the scrotum, with distinct induration of the epididymis of both sides. On operation the abscess was found to be tuberculous in character, and due to the presence of an extensive tuberculous orchitis of the left side. On further examination it was found that the patient had extensive tuberculous disease of the other testicle, both vasa deferentia and both seminal vesicles. There was no evidence of involvement of the prostate. As the patient had given consent only for the removal of the diseased area in the scrotum, both testicles were removed with only a small area of each vas. The wound healed kindly and he was able to be discharged from the hospital at the end of two weeks. Before leaving he was told the extent of the disease and was advised to return at the end of two weeks for the complete removal of both genital tracts. At the second operation a transverse incision was made in the perineum and the tissues gradually dissected, until the seminal vesicles were exposed. These were much thickened, as well as were the surrounding tissues. With considerable difficulty each was separated from its bed and each vas freed as far upward as the ureter. An incision was then made over each inguinal ring, the canal freely exposed, and the free extremity of each was secured. These were separated from the surrounding tissues of the cord by blunt dissection and the intraabdominal portion liberated by a gradual sawing motion. The structures parted somewhere between the ureteral implantation into the bladder and the brim of the pelvis. Both testicles and vasa were then removed and the wound in the perineum was partly closed and packed with iodoform gauze. The inguinal wounds were completely closed and sterile dressing applied. Practically no reaction followed the operation, and with the exception of a sharp rise of temperature, which followed temporary retention of secretion in the perineal wound, the patient made an uninterrupted recovery. The inguinal wounds were now completely healed and only a small sinus remained in the perineum.

Acute Septic Infarcts of the Kidney.—Dr. Brewer presented a female, aged 26, who was admitted to Roosevelt Hospital November 1 last. Seventeen days before admission she suffered from acute pain in the right flank, radiating to the groin, associated with chills and high fever. The pain continued for several days; she had daily chills and she suffered continuously from fever and general prostration. During the period of her severest pain she would frequently vomit and at other times complain of nausea and anorexia. The physical examination was negative, except for marked tenderness in the costovertebral angle. Leucocytes were 14,000 and there was 70 per cent. polymorphonuclears. The urine contained a trace of albumin and many pus cells. The cystoscopic examination of the bladder gave negative results. The urine from the right kidney contained blood, pus, columnar epithelium, albumin, while the urine from the left contained a faint trace of albumin, very few leucocytes and epithelial cells, and very few red cells. On operation the kidney was somewhat enlarged, surrounded by an edematous fatty capsule, and showed numerous small infarcts and minute abscesses in the cortex. A portion of the kidney substance was removed for patho-

logical examination. The capsule was stripped from the organ and the wound was closed with a small cigarette drain. She made an uninterrupted recovery and had not suffered from renal symptoms since leaving the hospital, and was now in excellent health. The pathologist's report showed it to be multiple abscess in kidney substance.

Report on Renal and Ureteral Surgery, From an Analysis of One Hundred and Forty Operative Cases.—Dr. George E. Brewer read this paper. One of his reasons for selecting this subject was that in looking over his renal histories he found a larger proportion of mistakes in diagnosis recorded than in any other group of operative cases. Three years ago he made a careful analysis of all of his cases and read his report before the Section on Surgery. (See Medical Record, Vol. LXVII., No. 7, February 18, 1905.) Since that time he had had an opportunity of studying additional cases; a review of these and his previous cases he thought might prove of interest. Of the 140 cases there were 48 nephrectomies with two deaths, 48 nephrotomies and exploratory operations with nine deaths, 13 simple decapsulations with two deaths, nine emergency operations on traumatic cases with one death, 15 nephrorrhapies, and nine operations on the lower ureter without mortality. Of the 48 nephrectomies there were six of new growth, seven of tuberculosis, 18 of pyonephrosis, 17 of calculus, three of traumatic rupture, eight of acute septic infarcts, three of hydronephrosis, two cases of ureterovaginal fistula following hysterectomy, one case of pyelonephritis, one of severe hemorrhage following nephrotomy, and one case of necrosis of the organ from a twisted pedicle. Of the 48 nephrotomies and exploratory incisions there were three cases of new growths, six cases of pyonephrosis, 11 cases of calculus, two cases of tuberculosis, 14 cases of septic infarcts, four cases of intermittent hydronephrosis, two cases of pyelonephritis, two cases of polycystic kidney, one case of large cortical abscess, and in five instances the exploratory incision revealed no lesion. While decapsulation was frequently practised in acute septic and other conditions, in connection with other operative procedures, in 13 instances it was the only operation. Of the 13 simple decapsulations, in five patients the double operation was performed for chronic nephritis, in one instance it was performed for a long-standing renal neuralgia of unknown origin, and in two others it was undertaken for the relief of subacute septic infarcts. The 16 nephrorrhaphies were all for the relief of movable kidney. Of the nine operations on traumatic cases, seven revealed evidences of injury to the organ varying from slight capsular rupture to a complete crushing. In two instances a rupture of one or more of the larger branches of the renal vein was present. Of the nine operations on the lower portion of the ureter, in four arrested calculi were found, in two the ureter was kinked by an inflammatory mass, in one there was adherent calcified appendix epiploica of the sigmoid giving rise to an *x*-ray shadow, while in two the ureter was found to be normal. In his first report of 84 cases 12 or 14.2 per cent. proved fatal, while in his last series of 56 cases only 2 or 3.7 per cent. died as a result of operation. Twelve cases of new growth were encountered in this series. Of these three were carcinoma, two hypernephroma, one adenoma, two of solitary cyst, three of polycystic kidney, and in one no accurate diagnosis could be made, although the history suggested a rapidly growing hypernephroma. The group of calculus cases proved an interesting series. In his former report, being impressed with the number of errors in their diagnosis of stone, he made a careful analysis of 36 cases; in 21 cases, or 59 per cent. only, did the operation confirm their diagnosis. And in only 52.6 per cent. of their recent cases of suspected calculus did the operation prove the diagnosis correct. The number of cases which in their onset, symptoms, and subsequent history led them to believe stone to be present in the kidney or ureter were 57. Of these in 32 instances stone was found at operation, in 19 no stone was found, but some other definite lesion which furnished a reasonable cause for the existence of the symptoms, while in six no lesion was found. Dr. Brewer then considered the subjective symptom pain, the objective symptoms, as frequency and painful micturition, vomiting, fever, localized tenderness, and the presence of renal tumor, the results of urinary analysis with reference to hematuria and pyuria, the results of *x*-ray examination, and the results of cystoscopy and ureteral catheterization. From a careful review of these symptoms he said he felt justified in stating that there was no single symptom nor sign, nor any group of symptoms or signs that was absolutely pathognomonic of renal or ureteral calculus, unless the calculus lay in the lower ureter and could be seen or touched by a metal bougie or catheter. The most important factors to be considered in making a diagnosis were pain, tenderness, hematuria, the results of radiography, cystoscopy, and ureteral catheterization. While pain and tenderness were present in practically 100 per cent. of their cases, it should not be forgotten that they were also present in a large percentage of the cases in which no stone was found. Hematuria was present in 45 per cent. of their stone cases, but it was also present in 41 per cent. of the cases without stone. Including all the cases examined, the *x*-ray gave positive evidence of the presence or absence of stone in 79 per cent. of their cases. On five occasions he had observed calculous disease in both kidneys. Of the seven cases of intermittent hydronephrosis, in all there were nonfebrile attacks of violent renal neuralgia. In all the kidney was distinctly palpable. In four instances at operation the renal pelvis was found to be enlarged and relaxed; in three it appeared normal. In four cases in which an enlarged and relaxed pelvis was found at operation only one was cured by the primary operation, and that was an extensive plastic procedure which greatly reduced the size of the pelvis. The other three required secondary nephrectomy. Of the three cases in which no enlargement of the pelvis was noted all were apparently relieved by anchoring the kidney in place. A single case of complete gangrene of the kidney was observed. With regard to acute hematogenous infections in which the lesion was limited to one kidney, there were three important facts regarding the behavior of this form of infection not generally recognized by the profession. The first was that these lesions were often unilateral, the second was that in the severest type of the infection the toxemia was so overwhelming that death occurred before the characteristic renal symptoms were developed, and the third was that these cases in their early symptomatology varied greatly, the clinical picture often suggesting an acute grippe, lobar pneumonia, appendicitis, or cholecystitis. With regard to the treatment the cases should be divided into three distinct groups: 1. The severest type in which nephrectomy was necessary to save life. 2. A milder type, which was often relieved by decapsulation, the opening and draining of the cortical foci. 3. The mildest type, in which no surgical treatment was necessary. The one pathognomonic sign present in all cases was a marked unilateral costovertebral tenderness. In conclusion he briefly recorded his experience in the surgery of the lower ureter.

Demonstration of Instruments.—Dr. Bransford Lewis of St. Louis gave a demonstration of cystoscopes and other instruments.

Dr. Eugene Fuller said that many times in hysterical women one obtained a history of pain somewhere in the abdomen, with perhaps a slight mobility of the kidney, usually the right. He made it a rule never to operate upon these patients unless they gave urinary symptoms. What was said in regard to decapsulation was interesting.

If one took an old afebrile patient with contracted kidneys it seemed to him little could be done by decapsulation, whereas in acute cases much could be done.

Dr. Howard Lilienthal referred to the case of a man who was suddenly taken ill with what seemed to be a grippe pneumonia. Dr. Lilienthal saw him two or three weeks after. There had been numerous consultants and the diagnoses varied. He believed there was intra-abdominal sepsis of some sort and advised immediate operation. An incision was made over the appendix and he found it to be anatomically diseased but not acutely affected. Another incision was made over the gall-bladder, but nothing was found there to account for the trouble. Feeling around he found the right kidney hard as a stone. He turned the patient on the side, upon the flank, and there was disclosed a right kidney covered by a fatty capsule, the hardest he ever saw, of coagulated fat. A nephrectomy was performed and the patient was now almost well. With regard to nephropexy, if a movable kidney was due to trauma, anchoring the kidney at once would relieve the symptoms. It was his practice, whenever a case of supposed chronic appendicitis was brought to the hospital, to have the urine carefully centrifuged for blood cells; if found, he advised the *x*-ray examination. He referred to "crossed pain," *i.e.* pain on one side and the stone on the other; he had seen several such cases. In cases of hydronephrosis he called attention to the fact that the urine would be extremely poor in urinary salts, and the diagnosis could be made by that alone.

Dr. John B. Walker said that he was not in favor of packing gauze in the kidney, but around it, to control hemorrhage.

Dr. Charles H. Peck said he had seen four cases of unilateral septic infarcts during the past year and a half, one being of a moderately severe type. He took it for a case of appendicitis and did a laparotomy. He found a kidney as hard as the one described by Dr. Lilienthal. This patient made a good recovery. The other three cases were all of moderately severe types and while the findings were perfectly positive the renal symptoms subsided without operation.

Dr. Brewer said he had looked for cases of "crossed pain," but had never found such a case. It should be borne in mind that hyperemia from the presence of calculi which gave acute colic was always dangerous. Although it was his practice to go through the cortex of a kidney to extract a stone, he confessed that it might be well to go through the pelvis, in spite of the fact that suturing the pelvis was likely to break down and give leakage. With regard to the control of hemorrhage, he made it a rule when he opened the cortex to simply place a small needle well within the pelvis; he then took a pair of dressing forceps, introduced the points alongside the needle, opened the forceps widely and then placed in his finger. In this way the bleeding was much less. He said he had packed a number of cases, but he never removed the packing before the tenth day. By that time the urine and secretions were so abundant that hemorrhage rarely followed. The possibility of hemorrhage in these cases should always be borne in mind and guarded against. With regard to septic infarcts, he believed the diagnosis could now be made; any case severe enough to warrant operation differed from the symptoms of appendicitis. He never saw an uncomplicated case of the latter with a temperature of 104°. The rise, too, was gradual. In cases of sudden abdominal pain, with rigidity and tenderness over the gall-bladder, with a temperature of 104°, he always thought of the possibility of a septic infarct.

Abscess of Frontal Lobe.—Dr. Fielding L. Taylor reported this case. The patient, 27 years old, was struck with a brick above the right eye in May, 1906, four months before Dr. Taylor saw him. He was not rendered unconscious by the blow and returned to his work the day following. One month later there was considerable inflammation about the wound, which had healed. At the hospital a superficial abscess was opened and several small pieces of brick and some spiculi of bone were removed. He suffered from intense headaches at times, most marked over the occiput. His intellect was sluggish and he could not sleep. His headaches continued, and vomiting was present until September 12, 1906, when he was seen and brought to a sanatorium in this city. He was much emaciated and yawned every few minutes, being very apathetic. The pupils were moderately dilated and reacted well. Vision was diminished. A bilateral optic neuritis was found, more marked on the left. There was slight paresis of the left side of the face without ptosis. The tongue was but partially protruded and deviated slightly to the left. There was distinct weakness of grip in the left hand. Babinsky's sign was not present. The patellar reflexes were absent on both sides. There was incontinence of urine and feces and persistent vomiting. The pulse was 72, respirations 16 and rectal temperature 98° F. During the night the pulse fell to 53. At operation on the day following two ounces of pus were evacuated from a cavity about two inches below the surface in the frontal lobe. The wound was drained with a piece of rubber tubing. A hernia cerebri developed about the size of a hen's egg, but this sloughed off, after which the wound closed. He returned to his home October 17, apparently well, except that he was nearly blind in his left eye and saw poorly with the other. Dr. Taylor heard from him several times during the last year and he stated that he was well, except that his sight was not improving. He made arrangements to come down and be presented before the Surgical Section on November 1, 1907, and was in excellent spirits when he heard from him the latter part of October. He learned that he had died on October 23. He probably had developed a secondary abscess, by the evacuation of which his life might have been saved.

Three Cases of Unilateral Hemorrhagic Nephritis.—Dr. Joseph Wiener reported these cases.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Nevada State Board of Medical Examiners.

Carson City, November 4-5, 1907.

ANATOMY.

1-3. Give function of hyoid bone. From what bones and by what ligaments is it suspended?
4. Which rib is considered the most typical?
5. Bound the astragalus.
6. Name the muscle on the dorsum of the foot.
7. Describe the axillary artery in its origin and termination.
8. How is the inferior vena cava formed, and where does it terminate?
9. Give special names by which the twelve pairs of nerves are generally known.

PHYSIOLOGY.

1. What is the function of the sixth (abducens) nerve?
2. Describe a complete physiological revolution of the heart.
3. Describe the action of the kidneys, and give the normal constituents of urine.
4. Describe the process of segmentation of the ovum.
5. Name the secretions of the alimentary canal, and give the functions of each.
6. What are the functions of the spinal cord?
7. What are amyloid foods? Proteid foods? Give an example of each.
8. What experiments have been made to prove the glycogenic function of the liver?
9. What are the functions of the brain membranes?
10. Describe the phenomena of (a) asphyxia, (b) syncope, (c) sleep.

MATERIA MEDICA AND THERAPEUTICS.

1. What is a decoction; an infusion; a mixture; an emulsion?

2. Give the therapeutic uses of purgatives.
3. Name remedies having a special action upon the kidneys, with indication for and against their use.
4. Name remedies having a special action on heart with indication for and against use.
5. Give the uses of alcohol.
6. Name the various preparations of opium, with dose of each.
7. Indicate condition in which potassium iodide would be useful.
8. What is the dose of veratrum viride? Under what condition can larger dose be used?
9. Indicate the various uses of quinine.
10. Indicate the various uses of iron.

CHEMISTRY AND TOXICOLOGY.

1. Give the physical and chemical qualities of calomel; corrosive sublimate.
2. With what preparations of mercury should the iodides never be combined?
3. Write three prescriptions in which a chemical change takes place.
4. Define difference between mixture and chemical combination.
5. With what are the following drugs incompatible: Iron, mercury, the alkaloids?
6. Name a vegetable poison. Give symptoms of and treatment for poisoning by same.
7. Name a mineral poison. Give symptoms of and treatment for poisoning by same.
8. Describe a case of carbolic acid poisoning. Give treatment for same.
9. What symptoms would indicate over-absorption of carbolic acid from a surgical dressing?
10. Name antidotes for opium, belladonna, digitalis, arsenic, and hemlock.

PATHOLOGY.

1. Give the pathology of acute anterior poliomyelitis.
2. Give the pathology of a chancre of the prepuce.
3. Give the causes of edema.
4. What are the indications of an inflammation?
5. What is thrombosis? How formed?
6. Give the pathology of chronic diffuse nephritis.
7. Give the macroscopical appearance of the lung in the various stages of pneumonia.
8. Give the pathology of cystic ovary.
9. What pathological changes occur during a case of scarlet fever of ordinary severity?
10. Give the pathology of croupous colitis.

BACTERIOLOGY AND HYGIENE.

1. Name and describe the microorganism that produces the plague. Where is it chiefly found?
2. What is a pure culture? How made?
3. How would you diagnose malaria from typhoid fever by the microscope?
4. What is Koch's law?
5. What measures would you take to prevent the spread of tuberculosis?
6. What causes yellow fever? How would you prevent its spread?
7. Suppose a new-born baby were found dead, what would you do to find out whether it was a case of murder or not?
8. Mention four mineral disinfectants, three organic, and three gaseous.
9. What in your opinion should be done in regards to the "social evil" by the municipality or State?
10. Describe the *Bacillus anthracis*.

MEDICINE AND THERAPEUTICS.

1. Give symptoms and parts affected in rachitis.
2. Give stages in pneumonia and treatment of a case from beginning.
3. Where are the lesions in arthritis deformans, and give symptoms?
4. Give causes, symptoms, and pathological anatomy of diabetes mellitus.
5. Give causes, symptoms, and treatment of hemophilia.
6. Make a fever chart of a typical case of typhoid.
7. Give differential diagnoses of gastric catarrh, gastric ulcer, and gastric cancer, and give treatment for gastric ulcer.
8. What are the symptoms of the atrophic form of cirrhosis of the liver?
9. Give symptoms and treatment of pneumothorax.
10. Give differential diagnosis of pericarditis with effusion, and dilatation of heart, and treatment of the pericarditis.

SURGERY.

1. Name the causes of intestinal obstruction.
2. What are the chief surgical diseases of the groin?
3. How are wounds classified?
4. What agents are employed for the production of local anesthesia?
5. What are the causes of secondary hemorrhage?
6. What structures are divided in the operation for strangulated femoral hernia?
7. How are amputations classified in regard to time of operating? What period is most favorable for operation?
8. Describe the operation for ligature of the subclavian artery at its second part.
9. Give symptoms and treatment of section of the median nerve.
10. How would you diagnose and reduce a backward dislocation of the forearm?

GENITOURINARY DISEASES.

1. Give differential diagnoses of simple and specific urethritis.
2. Make a classification of the syphilodermata.
3. Give your treatment of tertiary stage of syphilis.
4. Give different treatments for organic stricture, and give details of each.
5. What is your treatment for hydrocele? Give differential diagnosis.
6. Describe a syphilitic cornea.
7. What are symptoms, causes, and treatment of herpes progenitalis?
8. Give complications of a posterior urethritis.
9. Describe Hutchinson teeth, and what is the cause.
10. What are the symptoms of cowperitis?

OBSTETRICS.

1-2. Give etiology and symptoms of what is generally denominated kidney of pregnancy.
3. What varieties of mellituria may be observed in pregnant women?
4. What organ is most at fault for autointoxication in pregnancy?
5. In what proportion do compound presentations occur in labor?
6. Diagnose a prior pregnancy.
7. Can the sex of the fetus *in utero* be determined?
8. Give etiology and diagnosis of uterine inertia.
9. Give your technique in podalic version.
10. Give absolute indications for cesarean section.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

NEVADA STATE BOARD OF MEDICAL EXAMINERS.

Carson City, November 4-5, 1907.

ANATOMY.

1-3. The function of the hyoid bone is to support the tongue and to afford attachment to several muscles.
It is suspended from the styloid processes of the temporal bones by the stylohyoid ligaments.
4. The seventh rib is considered the most typical.
5. The astragalus is bounded: Above by the tibia, below by the os calcis, internally by the internal malleolus of the tibia, externally by the external malleolus of the fibula, in front by the scaphoid or navicular.
6. The muscle on the dorsum of the foot is the extensor brevis digitorum.
7. The axillary artery begins at the outer border of the first rib, and ends at the lower border of the tendon of the Teres major muscle; it is continuous with the subclavian artery above, and with the brachial artery below.
8. The inferior vena cava is formed by the junction of the two common iliac veins; it terminates in the lower and back part of the right auricle of the heart.
9. The special names by which the twelve pairs of nerves are generally known are: 1. Olfactory. 2. Optic. 3. Motor oculi. 4. Trochlear or pathetic. 5. Trifacial. 6. Abducens. 7. Facial. 8. Auditory. 9. Glossopharyngeal. 10. Pneumogastric or Vagus. 11. Spinal accessory. 12. Hypoglossal.

PHYSIOLOGY.

1. The sixth (abducens) nerve is the motor nerve to the external rectus muscle of the eye.
3. The normal constituents of the urine are: Water, urea, uric acid, urates, hippuric acid, kreatinin, xanthin, hypoxanthin; sulphates, chlorides, and phosphates of sodium and potassium; phosphates of magnesium and calcium; nitrogen and carbon dioxide.
5. The secretions of the alimentary canal are: Saliva, gastric juice, pancreatic juice, bile, and succus entericus.
The functions of the saliva are: (1) To moisten the mouth, (2) to assist in the solution of the soluble portions

of the food, and thus (3) to administer to the sense of taste, (4) to lubricate the bolus of food, and thus (5) to facilitate the acts of mastication and deglutition, and (6) to change starches into dextrin and sugar.

The functions of the gastric juice are: (1) To change proteids into proteoses and peptones, and (2) to curdle the casein of milk.

The functions of the pancreatic juice are: (1) To change proteids into proteoses and peptones, and afterwards decompose them into leucin and tyrosin; (2) to convert starch into maltose; (3) to emulsify and saponify fats; and (4) to cause milk to curdle.

The functions of the bile are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

The functions of the succus entericus are: The secretion of enterokinase, secretin, and erepsin, which assist the pancreatic juice in digestion.

6. *The functions of the spinal cord* are: (1) The conduction of nerve impulses; (2) reflex action; (3) coordination; it also contains special centers which preside over definite functions.

7. *Amyloid foods* are foods containing amyloses or starches. They contain no nitrogen, but are made up of carbon, oxygen, and hydrogen; the hydrogen and oxygen are in the proper proportions to form water. *Example*: Potatoes.

Proteid foods are foods containing proteids. They contain nitrogen, and have a composition similar to that of albumin; other elements contained in them are carbon, hydrogen, oxygen, and sometimes sulphur. *Example*: Meat.

8. *Experiments to prove the glycogenic function of the liver* were made by Claude Bernard. "He fed a dog for seven days with food containing a large quantity of sugar and starch; and, as might be expected, found sugar in both the portal and hepatic blood. But when the dog was fed with meat only, sugar was still found in the blood of the hepatic veins. Repeated experiments gave invariably the same result. No excess of sugar was found in the portal vein under a meat diet, if care was taken to prevent reflux of blood from the hepatic venous system. Bernard found sugar also in the substance of the liver. It thus seemed certain that the liver formed sugar even when, from the absence of saccharine and amyloid matters in the food, none could be brought directly to it from the stomach or intestines. He subsequently found that a liver removed from the body, and from which all sugar had been completely washed away by injecting a stream of water through its blood-vessels, contained sugar in abundance after the lapse of a few hours. This post-mortem production of sugar was a fact which could only be explained on the supposition that the liver contained a substance readily convertible into sugar." (Kirkes' *Physiology.*)

9. *The function of the dura* is protection: Of the *arachnoid*, lymph supply; of the *pia*, blood supply and nutrition.

MATERIA MEDICA AND THERAPEUTICS.

1. *A decoction* is a liquid preparation made by boiling a vegetable substance with water.

An infusion is a liquid preparation made by heating a vegetable substance with hot or cold water; it is not boiled, though boiling water may be used.

A mixture is a liquid preparation, containing one or more insoluble substances in suspension.

An emulsion is a liquid fat in a state of fine and permanent subdivision and suspension in a watery fluid.

2. *The therapeutic uses of purgatives* are: (1) In cases of habitual constipation; (2) to reduce the general blood pressure, for example, in cerebral hemorrhage; (3) to remove the irritant in cases of diarrhea; (4) to aid intestinal antiseptics; (5) to remove toxic products; (6) to remove fluid from the body in various dropsical conditions.

5. "Though decidedly injurious in health, in disease alcohol is a most valuable remedy in appropriate cases. In *vomiting* of yellow fever, seasickness, etc., iced champagne is useful. *Atonic indigestion* of nervous and depressed subjects, cautiously. *Phthisis,* it does good if it promotes digestion and assimilation; otherwise it is very injurious. *Cholera infantum, diarrhea, etc.,* Cognac brandy in full doses. *Cardiac failure,* brandy in small doses repeated as fast as oxidized. *Chloroform anesthesia,* ʒ j-ij of whiskey beforehand, to sustain the heart, and prolong the chloroform narcosis. *Poisoning* by cardiac depressants and snake venom, alcohol freely, to sustain the heart. In *snake poisoning* it is given *ad libitum*. *Diphtheria,* whiskey or brandy in small doses frequently from the commencement, and dilute alcohol sprayed into the throat, is very efficient treatment. *Adynamic fevers,* small doses frequently are often of great value. *Gonorrhea,* Niemeyer is said to have done a lucrative business by treating this affection with injections of tannic acid in port wine. *Insomnia* from cerebral anemia may be prevented by small doses of some alcoholic stimulant at bedtime. *Wounds,* no better dressing than strong alcohol, to prevent putrefaction and protect the surface by coating it with a coagulum of its own albumin. *Bed sores* if threatening, alcohol locally, to harden the tissue. *Cold* from exposure, may be prevented by a moderate dose of alcohol, to restore the balance of the circulation and prevent internal congestion, by relaxing the vessels of the periphery." (Potter's *Materia Medica.*)

6. Pulvis opii, gr. j; extractum opii, gr. ss; pulvis ipecacuanhæ et opii, gr. vij ss; acetum opii, ♏viij; tinctura opii, ♏viij; tinctura opii camphorata, ʒij; tinctura opii deodorata, ♏viij; tinctura ipecacuanhæ et opii, ♏viij; vinum opii, ♏viij.

7. Potassium iodide would be useful in the following conditions: Tertiary syphilis, chronic rheumatism, pleurisy, arteriosclerosis, asthma, mercurial poisoning, chronic inflammations, aneurysms.

8. The dose of veratrum viride is gr. ij; of the tincture, ♏xv. A larger dose can be used in puerperal eclampsia.

CHEMISTRY AND TOXICOLOGY.

1. *Calomel* is a heavy, white powder; amorphous; tasteless and odorless; it is insoluble in cold water and in alcohol, and very slightly soluble in boiling water; when exposed to the light it becomes discolored (first yellow, then gray) and partially decomposed; it sublimes without fusing; it is incompatible with the mineral acids, with the alkaline chlorides, bromides, and iodides.

Corrosive Sublimate is heavy, white and crystalline; it has a strong, acrid, styptic taste and is soluble in water, in alcohol and in ether; it is decomposed by exposure to light.

3. Three prescriptions in which a chemical change takes place:

℞. Tincturæ ferri chloridi, ♏xxx.
Syrupi simplicis, ʒss.
Tincturæ cinchonæ compositæ, q.s. ad ʒjj.
Misce.; et Signa: One teaspoonful three times a day.

℞. Liquoris ferri et ammonii acetatis, ʒj.
Acidi phosphorici diluti, ʒss.
Syrupi aurantii, q.s. ad ʒiij.
Misce.; et Signa: One teaspoonful three times a day.

℞. Potassii iodidi, ʒiv.
Spiritis ætheris nitrosi, ʒss.
Syrupi simplicis, ʒj.
Aquæ, q.s. ad ʒiij.
Misce. et Signa: One teaspoonful three times a day.

4. *A mixture* is the product obtained by uniting into a more or less homogeneous whole two or more substances, whether elements or compounds. There is no chemical union, and the amounts of the component parts are not definite.

A compound is a substance made up of two or more elements, chemically united with each other in definite proportions.

5. *Iron is incompatible with:* Acids, acid salts, tannic and gallic acids, vegetable astringents, alkalies and their carbonates.

Mercury is incompatible:—The chlorides are incompatible with nearly everything.

Alkaloids are incompatible with: Alkalies, alkaline carbonates, iodine, picric and tannic acids.

6. *A vegetable poison*: Aconite.

"*The symptoms of poisoning by aconite* usually manifest themselves within a few minutes; sometimes are delayed for an hour. There is numbness and tingling, first of the mouth and fauces, later becoming general. There is a sense of dryness and of constriction in the throat. Persistent vomiting usually occurs, but is absent in some cases. There is diminished sensibility, with numbness, great muscular feebleness, giddiness, loss of speech, irregularity and failure of the heart's action. Death may result from shock if a large dose of the alkaloid be taken, but more usually it is by syncope.

"The *treatment* should be directed to the removal of the unabsorbed poison by the stomach tube, and washing out of the stomach with infusion of tea holding powdered charcoal in suspension. Stimulants should be freely administered." (Witthaus' *Essentials of Chemistry.*)

7. *A mineral poison:* Lead.

The symptoms of poisoning by lead are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great pros-

tration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions, and tetanic spasms."

The *treatment* consists in removing the cause and administering the antidote, "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic or by the use of the stomach tube." (Wittbaus' *Essentials of Chemistry.*)

8. *Symptoms in carbolic acid poisoning*: Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark.

Treatment: Emetics, white of egg, stimulants. Alcohol is said to be antidotal.

9. The following symptoms indicate over-absorption of carbolic acid from a surgical dressing: The urine becomes of a smoky or greenish or black color, and is apt to contain albumin; the temperature becomes subnormal, the respirations and pulse feeble; this is followed by muscular weakness and vertigo.

10. The *antidotes for opium* are: Potassium permanganate, or tannic acid, strychnine, and caffeine. *For belladonna:* Morphine or tannin. *For digitalis:* Tannic acid and amyl nitrite. *For arsenic*: Freshly prepared solution of ferric hydroxide. *For hemlock:* Tannic acid.

PATHOLOGY.

3. *The causes of edema:* "Six factors enter into the production of edema, usually more than one acting at a time, viz., positive pressure in the vessels (in proportion as it rises), permeability of the vessel wall, osmosis from excess of salts outside the vessel as seen in the action of a saline laxative, selective action of the endothelium, variations in the blood plasma, and obstructed onflow in the lymph channels." (Thayer's *Pathology.*)

BACTERIOLOGY AND HYGIENE.

1. The microorganism that produces the plague is the *Bacillus pestis.*

It is non-motile, with rounded ends, is about 1½ mikrons in length and a little more than half a mikron in breadth; it stains readily with all the anilin dyes, not by Gram's method; it has no spores, and is not encapsulated.

It is chiefly found in the bubo, spleen, liver, and blood of those suffering from the plague.

2. A *pure culture* is one that contains only one kind of microorganism.

To make a pure culture: "All that is necessary is to inoculate the liquefied gelatin with the mixture of bacteria, and after thorough agitation so as to separate each cell from its neighbor, to pour the liquid on to the surface of a sterile plate. The gelatin now solidifies and imprisons, as it were, the separated cells. Each of these now multiplies and reproduces its kind; eventually, in the course of a day or two, a small growth, perhaps of the size of a small pinhead, appears. This is called a colony, and since it is derived from a single cell it constitutes a pure culture. Such is the principle of the dilution method for obtaining pure cultures. The isolation once accomplished, all that is necessary is to transplant the colony to sterile culture media so as to keep up the growth." (*Reference Handbook of the Medical Sciences.*)

3. In *malaria,* the malarial protozoa would be found, and the Widal test would be negative. The *Bacillus typhosus* of Eberth would not be found.

In *typhoid* the Widal reaction should be positive; there would be no malarial protozoa present. The *Bacillus typhosus* of Eberth might be found in the feces and urine.

4. Koch's law in regard to the bacterial cause of disease is: (1) The microorganism must be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood or secretions of the inoculated animal.

5. "The preventive measures which may be taken to reduce tuberculosis may be summarized as follows: (1) The compulsory notification of phthisis. (2) The removal of those conditions of domicile and of occupation which are known to promote the incidence of the disease, including the regulation of certain dusty trades. (3) The diffusion of knowledge (by medical men, leaflets, etc.) regarding the nature and modes of spread of the disease, and the precautions which should be taken in order to prevent its extension. (4) The testing of sputum and other suspected discharges, and of milk, meat, etc., supposed to be tuberculous—reports to be furnished free of charge. (5) Local authorities to undertake, without charge, the disinfection of houses recently occupied by phthisical persons. (6) The establishment of sanatoria and isolation accommodation for the cure of phthisical patients, and the isolation of those who are a distinct source of danger to fellow lodgers or workers. (7) The enforcement of measures against spitting in public conveyances and in places of public resort. (8) The efficient sanitary supervision of dairy farms, dairies, and milkshops. The periodical veterinary inspection and testing (by tuberculin) of milch cows, and the slaughter of tuberculous animals. The prohibition of the sale of milk of cows affected with tuberculosis. (9) The proper inspection of meat in public abattoirs, and the adoption of due precautions for the control of imported meat and milk." (Parkes' *Practical Hygiene.*)

6. Yellow fever is caused by a specific organism not yet isolated. The *Bacillus icteroides* of Sanarelli is supposed by some to be the cause. Whatever the cause, it is conveyed by a mosquito, the *Stegomyia fasciata.*

The spread of yellow fever can be prevented by the use of screens and mosquito nets, by destroying the mosquitoes in the house by the use of burning sulphur or pyrethrum, by draining the swamps, by remaining indoors during the hours when the mosquitoes are most active.

8. *Four mineral disinfectants:* Bichloride of mercury, biniodide of mercury, nitrate of silver, and potassium permanganate.

Three organic disinfectants: Cresol, creolin, and carbolic acid.

Three gaseous disinfectants: Formaldehyde, sulphur dioxide, and chlorine.

10. The *Bacillus anthracis* is a large, rod-shaped microorganism, with slightly thickened ends; it is from 5 to 20 mikrons in length, and a little more than one mikron in breadth; it has a tendency to form long threads; it is nonmotile and non-flagellated; it is erobic, and stains by all the alkaline aniline dyes and by Gram's method.

MEDICINE AND THERAPEUTICS.

7. *Chronic gastric catarrh* is generally caused by indiscretions in diet, or by mental worry, it may occur at any time of life, and is characterized by pain in the epigastric region, which generally comes on after eating; there is apt to be morning vomiting, the vomitus consisting of mucus with undigested particles of food; there is seldom hemorrhage; the stomach may be enlarged, and examination of the gastric contents shows free HCl diminished or absent, and the digestive ferments diminished.

Gastric ulcer is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents show an excess of free HCl.

Gastric cancer does not usually occur before forty years of age, is more common in males, pain is localized and constant, vomiting is copious and occurs some time after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; severe anemia and cachexia are also present.

Treatment of gastric ulcer: Rest and a light and easily digested diet are absolutely essential. Rectal feeding may be necessary for a time. Sodium bicarbonate, bismuth subnitrate, silver nitrate and opium are the most frequently used drugs. In case of perforation, or when life is threatened by the frequent hemorrhages or when medical treatment is ineffective, a surgical operation should be considered.

10.

PERICARDITIS WITH EFFUSION.	DILATATION OF HEART.
Area of dullness is pear-shaped and the enlargement is chiefly upward.	Area of dullness is not pear-shaped, and the enlargement is chiefly downward.
Dullness may extend to left of apex-beat.	Dullness does not extend to left of apex-beat.
Generally rapid development.	Usually slow development.
Apex beat is feeble or lost.	Apex-beat is generally apparent, and may be powerful.
The heart sounds are not clearly heard.	The heart sounds are generally clearly heard.

Treatment of pericarditis with effusion. Application of small blisters, and the administration of salines and diuretics are indicated. Rest is advisable, also a milk diet. Paracentesis percardii may be necessary.

SURGERY.

1. *The causes of intestinal obstruction* are: Strangulation through apertures, or by means of bands and contracting adhesions; impaction of foreign bodies or feces; the presence of tumors; volvulus or intussusception; intestinal paralysis; disease in the intestinal walls ultimately narrowing the lumen.

2. The chief *surgical diseases of the groin* are: Hernia (inguinal, femoral, and obturator), aneurysms, tumors, abscesses (psoas, glandular, and from hip disease), cysts, ulcers, sinuses, enlarged glands, undescended testicle, prolapsed ovary.

3. *Wounds are classified,* as:

I. Contused and open wounds.

II. Open wounds may be: Incised, lacerated, contused, punctured, gunshot, or poisoned; also penetrating and perforating.

III. Aseptic and septic.

4. *Agents employed for the production of local anesthesia:* Cocain, eucain, stovain, Schleich's solution, ethyl chloride, ether, rhigolene, ice and salt.

5. *The causes of secondary hemorrhage* are: Septic infection, slipping of a ligature, or some other defect of ligation, hemophilia, increased blood pressure due to disease or to reaction from shock, diseased condition of the blood-vessels.

6. *Structures divided in the operation for strangulated femoral hernia* are: Skin, superficial fascia, cribriform fascia, crural sheath, septum crurale, subserous areolar tissue, and peritoneum.

7. Amputations are classified in regard to time of operating, as follows:

(1) Primary, which is performed soon after the accident, as soon as the patient reacts from shock and before there is any fever.

(2) Secondary, which is undertaken some time after the injury, when suppuration or bone or joint disease have supervened.

(3) Intermediate, which is performed during the existence of the fever, but before suppuration or bone or joint disease have appeared.

GENITOURINARY DISEASES.

1. In *simple urethritis* the symptoms are neither so severe nor prolonged as in the gonorrheal variety, pus is not always present, and the gonococcus is never present in the discharge.

In *gonorrheal urethritis* the symptoms are more severe, last longer, and gonococci are always present in the discharge.

2. The following is Cornil's *classification of the syphilodermata:*

1. Erythematous syphilides (roseola).	Diffused; Macular; Papular.
2. Papular syphilides.	Small papules (papular or papulo-granular syphilide); Miliary syphilide; Conical, lichen-like syphilide; Large papules (patches of papulo-lenticular syphilide); Papulo-tuberculous; Papulo-squamous.
3. Vesicular syphilides.	Varicelliform; Eczemiform; Herpetiform.
4. Pustular syphilides.	Acneiform; Impetiginous; Ecthymatous (sometimes superficial and precocious, sometimes late and ulcerated)—ulcerous ecthyma.
5. Bulbous syphilides.	Pemphigus; Rupia.
6. Gummous and tubercular syphilides.	

6 and 9. "The *cornea,* when participating in syphilitic changes, is usually recognized in the victim of inherited disease. There is found, first, slight pericorneal vascularization, in the diffuse form, with one or several centrally situated or marginal opalescent points showing in the cornea. These increase till the whole or a great part of the cornea is involved, producing thus a characteristic opacity limited to the field of the keratitis. With the keratitis of inherited syphilis are often seen the alterations in the color, size, and shape of the permanent incisor teeth, first described by Mr. Jonathan Hutchinson, who regards the permanent upper central incisors as the test-teeth. These are usually vertically and transversely shortened and thinned, with a crescentic notch at the free border, its convexity regarding the root of the tooth. This notching, most conspicuous in childhood, becomes partially obliterated by attrition in later life. The teeth are also often convergent, occasionally separated; in other cases "pegged," and again discolored in shades of a dull brown.

"The punctate form of keratitis is seen both in acquired and in late inherited syphilis. Intracorneal puncta, the size of a pinhead, are then visible, careful observation of which reveals the lack of luster or grayish shade of color of corneal opacities in general." (*Reference Handbook of the Medical Sciences.*)

8. *The complications of a posterior urethritis* may be: Prostatitis, cystitis, pyelitis, epididymitis, inflammation of the vas deferens and of the seminal vesicles, periurethritis, bubo, inflammation of Cowper's glands, peritonitis, gonorrheal rheumatism, gonorrheal conjunctivitis.

10. *The symptoms of Cowperitis* are: Pain, swelling, and a feeling of heaviness and tension in the perineum, all of which are made worse by walking; a small, sensitive tumor can be felt, and there will be considerable constitutional disturbance, such as chill, fever, and malaise; suppuration generally occurs, and dysuria is often present.

OBSTETRICS.

1. *Kidney of pregnancy. Etiology:* Renal insufficiency; renal anemia (due to the pressure of the enlarged gravid uterus on the renal vessels, or to tonic contraction of the renal arteries, which, in turn, is caused by the presence in the blood of toxic matter from the fetal circulation).

Symptoms: Albuminuria (with casts), headaches, vertigo, dullness, lumbar pain, full pulse with increased arterial tension, edema of face and extremities, constipation, tinnitus aurium, nausea, vomiting, and eclampsia.

3. The varieties of mellituria observed in pregnant women are: (1) A physiological glycosuria, and (2) a pathological glycosuria, or true diabetes mellitus.

4. The organ most at fault for the autointoxication of pregnancy is probably the liver, though some observers consider the kidney as chiefly responsible for the condition.

5. Compound presentations occur about once in every 250 cases.

6. The following table (from Dorland) will indicate the diagnosis of a prior pregnancy:

PRIMIPARA.	MULTIPARA.
The fourchet is present.	The fourchet is missing.
The perineum is tense and deep.	The perineum is relaxed and probably torn.
The labia are in apposition.	The vulva is frequently patulous.
The vagina possesses tonicity, and is rough and rugous, with a granular feel.	The vagina is relaxed and smooth.
The cervix is long, soft, and conical; the os is undilated.	The cervix is large, cylindric, short, not so soft, and probably lacerated; the os is patulous.
The abdomen is full, rounded, tense, and resisting to the touch.	The abdominal walls are relaxed and non-resisting to the touch; the skin is loose and wrinkled.
Dark, purplish-red striæ appear late in pregnancy.	The striæ may be both white and livid, the former being present from the beginning of pregnancy.
The breasts are full, firm, and sensitive to pressure.	The breasts are flabby pendulous, and non-sensitive to pressure.
The nipples are usually small and undeveloped or even inverted.	The nipples are large and well developed.
Striæ are absent upon the breast.	Striæ are frequently to be found.

7. The sex of the fetus *in utero* cannot be determined. It can be *guessed at;* a fetal heart beat over 140 is supposed to indicate a girl, below 120 a boy.

10. The *absolute indications for cesarean section* are: Extreme pelvic contraction or deformity in which delivery by forceps or version or symphyseotomy is impossible, and in which craniotomy is either impossible or would be more dangerous to the mother; the presence of extreme atresia of the vagina; rupture of the uterus; sudden maternal death.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	April	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April	7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	14
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	April	14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April	13
Georgia	E. R. Anthony, Griffin	Atlanta	May	—
Idaho	J. L. Conant, Jr., Genessee	Boise	April	7
Illinois	J. A. Egan, Springfield	Chicago	April	15
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	March	—
Kansas	T. E. Raines, Concordia	Topeka	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm. J. Maybury, Saco	Portland	March	17
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	May	4
Montana*	Wm. C. Riddell, Helena	Helena	April	7
Nebraska	E. J. C. Sward, Oakland	Lincoln	May	—
Nevada	S. L. Lee, Carson City	Carson City	May	4
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April	13
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	21
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	March	17
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg	June	—
Rhode Island	G. T. Swartz, Providence	Providence	April	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May	5
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Sat Lake City	April	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	Apr	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S.B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Utah reciprocates at present with Colorado, Georgia, Illinois, Indiana, Iowa, Kansas, Maine, Michigan, Minnesota, Missouri, South Carolina, and Wisconsin.

Louisiana.—The State Board will require proof of identification of all applicants for license who are not personally known to some member of the Board.

Iowa reciprocates, under certain conditions, with the following States: Colorado, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, North Carolina, North Dakota, Ohio, South Carolina, Utah, Virginia, West Virginia, Wisconsin, and Wyoming.

Sprees in the Psychoses and Dementia.—Maurice Ducoste discusses the different sorts of sprees indulged in by different types of mental patients, which he defines as acts of vagabondage without motive. He gives us a résumé of the forms found in various types of mental disease: 1. Alcoholism. Attacks of instability with necessity for movement, and second, attacks in which all memory of the acts performed is absent. 2. Intermittent mania. Maniacal attacks, in which consciousness is preserved, well considered, and recognized by the patient as without motive. 3. Moral insanity. Frequently repeated attacks, conscious, remembered fully, and characterized by a desire to escape their results. 4. Mental debility. Conscience and memory intact, well conducted, but foolish. 5. General paralysis. Early attacks may or may not be absurd, conscience and memory preserved; later in the disease, evidently absurd actions, conscience and memory absent or vague; patient may walk until exhausted without eating or sleeping. 6. Senile dementia. Conscience and memory gone; patient loses himself and cannot get home. 7. Dementia præcox. Attacks of instability, of impulsion, of intellectual failure, and of profound dementia.—*Archives de Neurologie.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 7, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	426	200
Diphtheria	379	48
Measles	1465	26
Scarlet Fever	901	56
Smallpox	1	—
Varicella	215	—
Typhoid Fever	26	7
Whooping Cough	9	1
Cerebrospinal Meningitis	10	12
Malarial Fever	—	—
Totals	3432	350

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending March 6, 1908:

		CASES.	DEATHS.
SMALLPOX—UNITED STATES			
Arizona, Bisbee	Jan. 26–Feb. 10.	5	..
California, Los Angeles	Feb. 1–15.	16	..
District of Columbia, Washington	Feb. 8–22.	26	..
Illinois, Chicago	Feb. 8–15.	5	..
Danville	Feb. 16–23.	1	..
Springfield	Feb. 13–20.	12	..
Indiana, Elkhart	Feb. 15–22.	5	..
Indianapolis	Feb. 9–23.	4	..
La Fayette	Feb. 10–24.	2	..
Muncie	Feb. 8–22.	2	..
Kansas, Kansas City	Feb. 15–22.	12	..
Topeka	Feb. 8–15.	1	..
Wichita	Feb. 8–15.	7	..
Kentucky, Covington	Feb. 8–15.	2	..
Georgetown	Feb. 21.	5	..
Lexington	Feb. 8–22.	2	..
Louisiana, New Orleans	Feb. 8–22.	22	19 imp't'd
Maryland, Baltimore	Feb. 15–22.	2	..
Massachusetts, Melrose	Feb. 8–15.	3	..
Michigan, Saginaw	Feb. 8–15.	6	..
Minnesota, Winona	Feb. 8–22.	3	..
Missouri, Kansas City	Jan. 24–Feb. 14.	25	2
Montana, Butte	Feb. 4–18.	3	..
North Carolina, Charlotte	Feb. 8–15.	3	..
North Dakota, Fessenden	Feb. 22.	3	..
Ohio, Cincinnati	Feb. 14–21.	14	..
Dayton	Feb. 8–15.	1	..
Pennsylvania, Merian	Jan. 20.	1	..
Pittsburg	Feb. 8–15.	1	..
Tennessee, Knoxville	Feb. 15–22.	4	..
Memphis	Dec. 21–Feb. 8.	10	..
Nashville	Feb. 15–22.	5	..
Virginia, King Williams County	Feb. 18.	2	..
Richmond	Feb. 8–15.	5	..
Washington, Spokane	Feb. 8–15.	16	..
Tacoma	Feb. 8–15.	1	..
Wisconsin, La Crosse	Feb. 8–22.	15	..
SMALLPOX—FOREIGN			
Brazil, Bahia	Dec. 28–Feb. 1.	113	1
Para	Jan. 13–Feb. 1.	8	3
Rio de Janeiro	Jan. 19–26.	24	14
Canada, Winnipeg	Feb. 1–15.	6	..
Cape Colony, East London	Jan. 11–18.	1	1
China, Hongkong	Dec. 4–11.	14	12
Shanghai	Jan. 12–19.	2	14
Egypt, Cairo	Jan. 21–28.	1	..
Suez	Dec. 31–Jan. 14.	3	..
France, Brest	Jan. 25–Feb. 8.	3	1
Paris	Jan. 25–Feb. 8.	21	1
Great Britain, Edinburgh	Feb. 1–8.	1	..
Leith	Dec. 25–Feb. 8.	6	3
India, Bombay	Jan. 14–28.	..	23
Calcutta	Dec. 28–Jan. 11.	..	11
Madras	Jan. 18–24.	..	3
Italy, General	Jan. 31–Feb. 6.	57	..
Japan, Kobe	Jan. 18–Feb. 1.	1,792	603
Nagasaki	Jan. 19–26.	2	..
Osaka	Jan. 25–Feb. 1.	204	134
Yokyo	Feb. 4.	..	Present
Yokahama	Jan. 25–Feb. 4.	46	10
Manchuria, Dalny	Jan. 18–25.	3	..
Mexico, Aguascalientes	Feb. 2–16.	..	4
Monterey	Feb. 9–16.	..	1
Russia, Moscow	Jan. 18–Feb. 1.	76	24
Warsaw	Nov. 16–Dec. 14.	..	75
Spain, Denia	Jan. 25–Feb. 8.	12	1
Valencia	Feb. 2–9.	18	2
Turkey, Constantinople	Jan. 27–Feb. 9.	..	9
YELLOW FEVER.			
Brazil, Manaos	Jan. 18–Feb. 1.	..	6
Para	Jan. 25–Feb. 8.	51	30
Ecuador, Huigra	Feb. 4–11.	..	4
Venezuela, Ciudad Bolivar	Jan. 1–31.	..	Present
CHOLERA—INSULAR			
Philippine Islands, Manila	Jan. 4–11.	45	35
Mariquina	Jan. 4–11.	45	43
CHOLERA—FOREIGN.			
India, Bombay	Jan. 14–21.	..	1
Calcutta	Dec. 28–Jan. 11.	..	86
Rangoon	Jan. 11–18.	..	4

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Original Articles.

A STUDY OF 400 CASES OF EPITHELIOMA, IN PRIVATE PRACTICE, WITH REMARKS ON TREATMENT AND RESULTS.*

BY L. DUNCAN BULKLEY, A.M., M.D.,

AND

HENRY H. JANEWAY, M.D.,

NEW YORK.

CARCINOMA of the skin exhibits many phases and presents many problems in regard to treatment.

As to its *etiology* we have all to agree that we know but little. We can observe the epithelial degeneration and perverted growth, and note the many local irritating causes which appear to have an etiological significance, but as to the real reason why in most people these irritations will pass off more or less quickly, while in others they will result in a continued misbehavior of the epithelial cells, we are yet in the dark. There has been no lack of earnest and faithful microscopic studies of the diseased parts, and at one time and another there have been rumors and statements in regard to the finding of a cause in some particular microorganism; but competent observers have differed widely concerning the interpretation of what was seen, and it may be stated that thus far no universally accepted etiological element has been proven.

The *diagnosis* of epithelioma is, as a rule, fairly easy to those well acquainted with its manifestations, although one constantly sees cases in which the disease has not been recognized. In a certain number of instances syphilitic lesions have been mistaken for epithelioma, and so they have been cauterized and even excised: and the latter has often been diagnosed as lupus and treated accordingly. In many instances errors occur in the way of not recognizing the epithelial character of the disease, especially in its early stages, and in either neglecting it entirely, or stimulating the mal-growth by unwise superficial cauterizations. In this way trifling lesions are incited to take on malignant action, and often are not properly attended to until they have become almost or wholly beyond remedy. This is especially true in regard to those on the lip and in the buccal cavity; and the many sad instances of advanced epithelioma in these locations which one meets with, which are hopeless or where only the most terrible and destructive surgical procedures can give any hope of relief, and that too often only for a season, are sad to contemplate.

The *prognosis* of epithelioma, therefore, depends very largely upon the wisdom which has been applied to it from the inception of the degenerative process, although in certain rather rare cases the disease appears to be malignant from the beginning, and all attempts to check the progress of the malady seem fruitless. In many instances, however, lesions which are the beginning of epithelioma will yield and disappear entirely with proper, mild, continuous protective and alterative treatment, while in the various stages correct measures will check and remove the difficulty much more effectively than is commonly imagined, as will appear later. There is, therefore, no need for great alarm always, when epithelioma is diagnosed, although there is need of receiving and properly carrying out exactly the best remedial measures before the disease, which always begins as a local process, has gained too great a headway and the lymphatics are invaded. The choice and application of these measures will be considered later, with the results obtained.

The cases which are to be analyzed have occurred in the private practice of one of the writers, and date back some of them over thirty-five years. In all this analysis it is to be remembered that the notes of cases, recorded at the time of each visit, were not made with any view to such a study as this, but only in the ordinary routine of office practice, in order to facilitate the study and treatment of each case. The cases of epithelioma number 417, and occur among a trifle over 15,000 cases of miscellaneous diseases of the skin; the disease thus appearing with a frequency of 2.78 per cent. in this class of practice. The ages and sex are seen in the following table:

TABLE I.

AGES AT WHICH DISEASE BEGAN.

Age	Male	Female	Total
Under 20 years	3	4	7
20 to 25 "	2	2	4
25 " 30 "	3	8	11
30 " 35 "	24	13	37
35 " 40 "	33	16	49
40 " 45 "	32	12	44
45 " 50 "	26	15	41
50 " 55 "	28	18	46
55 " 60 "	27	19	46
60 " 65 "	26	11	37
65 " 70 "	32	10	42
70 " 75 "	18	8	26
75 " 80 "	12	2	14
80 " 85 "	4	3	7
85 " 90 "	..	1	1
90 " 95 "	2	1	3
No age stated	2	..	2
	274	143	417

We observe that the disease appeared much more frequently in males than in females, 274 to 143, or almost two to one. The larger proportion in men is accounted for in part by the number of cases of cancer of the lip, and also on the face, due so often to the irritation of shaving.

A study of the ages is interesting. Carcinoma is known to be a malady largely of adult life, indeed the cutaneous forms of epithelioma are commonly thought to belong to advancing years. We were, therefore, somewhat surprised to observe the relative uniformity of its appearance at each quinquennium between 30 and 70, which is shown in this

*Read before the Medical Society of the State of New York, January 28, 1908.

table; the actually largest number, 49, first occurred between the ages of 35 and 40, and the next largest number, 46, between 50 and 55 and also between 55 and 60. The youngest of our patients was seen at 19 years of age, the oldest 92, when the disease on the nose yielded entirely to mild alterative applications. There were 6 patients in whom the epithelial disease began under 20 years of age. The disease is seen to vary somewhat in the sexes at different periods of life; in advancing years it is more common in males.

The *location* of epithelioma is also an interesting study, and Table II exhibits this in the order of relative frequency.

TABLE II.

Location of Epithelioma.

Location.	*Male*	*Female*	*Total*
Multiple	20	6	26
Nose	77	51	128
Cheek	66	28	94
Lower lip	32	..	32
Forehead	6	13	19
Temple	8	8	16
Eyelid	8	7	15
Tongue	11	2	13
Ear	11	2	13
Neck	7	1	8
Breast	..	8	8
Upper lip	2	5	7
Genitals	3	3	6
Body	3	2	5
Gums	4	..	4
Inside cheek	4	..	4
Inside mouth	1	2	3
Chin	3	..	3
Tonsil	1	1	2
Scalp	..	2	2
Extremities	2	..	2
No location specified	5	2	7
	274	143	417

The most frequent site is seen to be on the nose, where there were 128 cases, 77 males and 51 females. The cheek comes next with 94 cases, 66 males and 28 females, the large proportion in males being due, as mentioned, partly to the irritation of shaving. Epithelioma of the lower lip appears next on the list, of which there were 32 cases, all in males; on the upper lip it occurred in 7 cases, 2 males and 5 females. The disease was observed in other locations with varying frequency, as seen in the table. On the breast were 8 cases, in females, all of the form known as Paget's disease.

Epithelioma has often been thought to appear only in a single patch, but there were 26 cases, 20 males and 6 females, in which there were multiple lesions. In one case, now in the New York Skin and Cancer Hospital, a man aged 40 has epitheliomatous degeneration appearing in about a dozen places about the head; the largest is an ulcerated patch about three inches in diameter behind the right ear, and also one an inch in diameter beneath the left eye.

The *duration* of epithelioma also presents an instructive study. In Table III. is seen the length of time the disease had lasted before the patient came under observation and treatment.

TABLE III.

Duration Before Observation.

Duration unspecified	35
6 months and under	47
6 " to 1 year	19
1 year to 1½ years	22
1½ " " 2 "	7
2 years " 3 "	32
3 " " 4 "	41
4 " " 5 "	31
5 " " 6 "	27
6 years to 7 years	19
7 " " 8 "	16
8 " " 9 "	18
9 " " 10 "	18
10 " " 15 "	42
15 " " 20 "	43
	417

The data in regard to the duration of such a disease as epithelioma cannot, of course, be accepted as wholly accurate, as the table is made up of statements given off-hand, in the ordinary run of office practice; but it indicates to a fair degree the obstinacy of this affection. In some instances the epithelial degeneration had been going on for a longer time than stated, and the trouble was only noticed when some ulceration or crusting had taken place; in others the date had been placed at the time of some abrasion, which being badly handled, had refused to heal and later perhaps had been stimulated into unhealthy action by injudicious application of nitrate of silver.

We see, however, that in a certain number, 47, the trouble had lasted only six months or less, before coming under treatment, while in large numbers of cases it had existed from two to twenty years previous to observation. As will be mentioned later, in these early cases, before the epithelial misgrowth had penetrated into the deeper structures, the tendency to disease was often checked and the tissue restored to a normal condition by relatively mild measures, very carefully and continuously employed; although some of these were radically removed with an arsenical paste, and latterly by the *x*-ray. It is, of course, most desirable that the disease should be definitely recognized and properly treated in this early stage; and the profession should learn to recognize it then and warn patients against neglect or injudicious treatment. But, on the other hand, it is surprising what most excellent results can be obtained in suitable cases by the *x*-rays, properly used, even when the disease has lasted very many years, as will be considered more fully when we come to treatment.

The duration of treatment is a matter which depends upon so many different factors that it is difficult to form any accurate judgment from statistics. It has to do, for instance, with the character, stage, and severity of the disease, the nature of the treatment, the faithfulness of the patient, etc., and it is quite impossible to present data in regard to all these. Table IV., however, exhibits some features of interest:

TABLE IV.

Duration of Treatment.

Cases untreated	45
Duration uncertain or still under treatment	138
Operative cases	38
Cases receiving local treatment, including *x*-ray—	
3 months and under	69
3 " to 6 months	43
6 " " 9 "	13
9 " " 12 "	19
12 " " 2 years	6
2 years and more	46
	417
Duration of *x*-ray cases (included in the above)—	
3 months and under	29
3 " to 6 months	12
6 " " 9 "	4
9 " " 12 "	2
12 " and over	6
	53

In quite a proportion, 138, it is impossible to learn the duration of the treatment, as patients

often left the city with only partial results observed, and owing to change of residence, very many of the letters sent have been returned. There were 38 operative cases, and 247 in which various other treatments were employed. In many operable cases it was quite impossible to secure consent, and only palliative measures were possible; although of late years, by means of proper *x*-ray treatment, combined with various local applications, results have been secured, in many of these cases, such as could never before have been supposed possible. In many of the milder cases a prolonged protective and alterative course of local treatment eventuated in perfect restoration of the part to health. In many of the more severe cases caustics, especially Marsden's arsenical paste, was employed with perfect and lasting results.

The form of variety of epithelioma is a very important feature, and as remarked before, has much to do with the success of the case. Among the cases here analyzed almost every possible form and degree of the disease were noted. In many cases the epithelial disturbance was in its incipient stage, and presented only the earliest departure of the epithelial cells from the normal; indeed, in some of them it would be difficult for an inexperienced eye to decide that the process was one which under adverse influences would develop into a serious epithelioma. In a very large share of the cases the disease was so far advanced that no one with experience could hesitate in regard to the diagnosis. In relatively few of the cases was the diagnosis established by biopsy, but in cases where the microscope was employed the diagnosis was thus confirmed.

(By Dr. Janeway.)—Concerning the varieties of epithelioma, two very distinct kinds of tumors present themselves for consideration. These may be most conveniently named according to Krompecker's classification, namely, (1) Epithelioma basocellare, and (2) Epithelioma spinocellare. These two names refer respectively to the layers of the skin from which the particular variety is supposed to originate.

Whether this assumption as to the explanation of the difference presented by these two kinds of tumors is correct or not, affects very little the fact that the groups which they name are totally different, both clinically and pathologically. The classification is a convenient one, and the term *basalzellen Krebses* is solidly implanted in literature. Pathologically epithelioma basocellare is composed of cells which are more or less fusiform in shape, small in size, and with relatively little protoplasm, but with well formed, generally ovoid nuclei; no epithelioma pearls are present and the cells invade the surrounding tissue in groups. In fact the cells show some approach to a cell of an endothelial type; and some observers have maintained that these tumors are really endotheliomata.

These tumors are, moreover, strikingly different from the ordinary forms of cancer. They represent the small, superficial, slow growths that appear upon the face, nose, ears, and upper lip, and are the tumors which belong essentially to dermatology. Their progress is very slow, and often they will show spontaneous healing; such a case has recently been reported by Dr. H. Jacobsthal.[1] They practically never form metastases. It is this apparent benignity that makes it justifiable to ever resort to any other local treatment than excision. They are peculiarly amenable to *x*-ray treatment, and on account of their slow progress no risk is run by the use of the *x*-ray in this class of growths; on the other hand, it cannot be incorrect to state that, when judiciously used in what may be termed fair cases, 100 per cent. of cures may be expected, and with far less deformity than after excision.

Of a very different character from this group, however, is *epithelioma spinocellulare*. The tumor here is composed of large cells, with a relatively great amount of protoplasm and well formed nuclei; the latter frequently show mitotic figures. The cells distinctly preserve the epithelial type, in form and characteristics, and intercellular union, in the form of prickle cells is present; epithelial pearls, due to the inherent tendency of the cells to preserve the normal life history of a spine cell, are a special feature of these tumors. Metastases are of frequent occurrence, and the growth of these tumors is rapid.

These epitheliomata occur with great regularity in portions of the body not invaded by epithelioma basocellare. They occur upon the mucous membrane of the lower lip, on the tongue, on mucocutaneous junctions, etc.

The most interesting question, of course, is what constitutes the real difference between these two groups of tumors? If, as Krompecker supposes, the epithelioma basocellare originates from the basal layers of the epidermis, one would be led to assume that, as these are the youngest cells, with an *a priori* more potential power of growth and reproductive force, it should produce a more malignant tumor than the more specialized and further evoluted squamous cells of the succeeding layers.

One might also ask, why do the basocellular epitheliomata remain, or appear, so strictly limited to one portion of the body? Why, if their origin is explained by the layer from which they are developed, should they not spring also from the basal cells of other portions of the economy? Certainly this is an interesting question and worthy of some consideration, why do these peculiar growths occur with such preponderating frequency upon a limited area of the body, the face? Certainly, regarding their etiology as distinct from other epitheliomata, the locality must be emphasized as having some important connection.

An explanation may be found in the limiting influence which a tissue more hardened by exposure might have upon a foreign body composed of a malignant new growth. The question of the natural resistance of the tissues themselves to tumor growth, apart from any cytolitic agent existing in the blood plasma, is an interesting one. Ribbert distinctly admits[2] that there is some part played in the production of carcinoma by the surrounding connective tissue, so that when once the epithelial cell, whether by fetal or by post-embryonal glandular formation, or also by dermic inflammatory changes, becomes freed from its normal habitat, the amount of resistance which the connective tissue presents to its independent growth is a factor in the development of a malignant tumor. Further than this, when the process has once started, the independence of the epithelial cells becomes more firmly established, and the resisting power of the surrounding mesoblastic tissue more and more impotent.

Coinciding with this is the established clinical fact that the earlier stages of a new growth are less lawless, less rapid in development, and more local than the later stages; all this shows that we must recognize in the restraining influence of the surrounding tissues a factor in the development or

failure to develop of a malignant new growth. Clinical experience also justifies us in carrying the point a step farther. May we not here recognize a precancerous stage, or perhaps, to express it better, a preliminary stage of cancer? Certainly we have repeatedly observed the healing by bland ointments of ulcers, even on the lower lip, which presented every characteristic of cancer and which either were really cancer, or a preliminary stage of the disease; one feels justified in making this statement because one sees other, exactly similar lesions which, when untreated or maltreated, develop into florid epitheliomata. In the stage of which we are speaking, however, the resistance of the external tissues, when aided by proper protective and alterative measures, is sufficient to enable it ultimately to present an efficient barrier to further epithelial invasion.

This explanation presented by Dr. Janeway seems to account for the very great difference which we continually observe in the behavior of different cases of epithelioma, and the confidence with which one can predict a perfect result in very many of those appearing about the face and head. This is true even when recurrences happen at longer or shorter intervals, for rarely do second manifestations resist any more than those first treated.

It also explains, in a measure, the quite different course of the epithelioma on the mucous mebrane of the lower lip and in the buccal activity. In their very early stages they will sometimes yield to mild and proper alterative applications, but they resent anything which stimulates the surface; and nitrate of silver has been answerable for the steady aggravation of many of them, until they have attained very serious proportions. It also guides us in regard to treatment.

The *treatment* of the cases under consideration has been most varied, for in epithelioma each case is a study, both at the beginning and constantly, until a perfect cicatrix results. Routine treatment of every lesion diagnosed as epithelioma, whether it be by excision, caustics, the *x*-ray, or other means, is to be deplored: and the results seen in many cases which had previously been in the hands of cancer, or *x*-ray quacks, demonstrated the evils consequent upon an ignorant and often vicious handling of the disease.

Excision has been advised in a certain proportion of the cases analyzed, notably those of the lip and mouth, but there are records of only 47 in which it was practised by various surgeons, although there were probably many more. In a good many of these the results, as learned recently, were successful; in a number there was recurrence, and in some instances death ultimately occurred from the disease. The results of surgical interference depend so much upon the stage or condition of the disease, and the completeness of the removal with adjoining glands, that little can be learned from these records. From experience, however, we are firmly convinced that the knife offers still the best, and, indeed, the only chance in a certain class of cases, and when excision is properly and radically done, good results may be looked for in a large proportion of suitable cases, even when far advanced. There were, however, quite a number of instances of enormous development of external cancer which were beyond the hope of operative relief; in some such patients in the New York Skin and Cancer Hospital there has seemed to be much benefit, in late years, from the *x*-ray.

In earlier years many of the cases here analyzed were treated with deeply acting caustics, and especially with the arsenical paste, as employed by Marsden, in the Middelsex Hospital, London. When rightly used, in proper cases, the results of this treatment are excellent, and the scar is all that could be desired; there were thus treated 28 cases, and perfect results known in over 60 per cent., many being lost sight of. This treatment is pretty painful and tedious in the separation of the resulting slough and subsequent healing; it has been little used of late, as the *x*-ray will generally reach just the forms of disease to which this is applicable.

Curettage is often a valuable means of removing the diseased tissue, and, when combined with other proper measures, of curing epithelioma. But to be successful, it must be very thorough, as the chances are very great that some portion of the disease will escape removal and will shortly reproduce new epitheliomatous elements. Hence the curette is rarely if ever trusted to alone, but is followed by the actual cautery or some penetrating caustic. We have had excellent results in many cases by a very thorough curetting, and filling the cavity with powdered pyrogallic acid, with a trifle of cotton packed on top; when the resulting crust fell, in a week or so, all was healed. There were 59 cases in which the curette was used.

The *x*-ray treatment represents the greatest advancement which has been made in the cure of many cases of epithelioma which previously were often most unsatisfactory, and although somewhat of a reaction has set in against the employment of this agent, no one who has carefully observed the results, when properly used, can possibly doubt the wonderful addition which it has made to our armamentarium. We speak advisedly in regard to the cure of epithelioma by this means, for Pusey[3] and others have demonstrated very many cases where the results of even severe cases have been perfect after the lapse of over three years.

The *x*-ray cases amount to 70, some of which are now under treatment, and as we have employed this method only about five years it is too early to draw valuable deduction from them. But no one who watches an epitheliomatous ulcer, which had previously remained and progressed for years, steadily melt away, heal, and finally leave only a very superficial, supple, and often hardly recognizable scar, under this method of treatment, can reasonably question the inestimable value of this agent. In many of these cases the disease was situated about the eye, in the sulcus of the nose, and in places where excision or other active treatment would have wrought havoc with the features, and where we have often seen recurrence after surgical removal.

This is not the occasion to dwell particularly on the technique and mode of using the *x*-ray, which is so often abused; the matter has been so fully considered by others that it is not necessary here. The study of its effects is still in its infancy, and every candid worker will agree that he knows but little as to its real *modus operandi*, and yet that he knows more of its actual effects, and how to secure them best, with each application made. It is, indeed a two-edged weapon, which may harm both patient and physician, but when rightly managed it need not harm either, and can wonderfully benefit the former.

Great claims have been made for radium in the treatment of certain forms of epithelioma. It was used for quite a while in our service at the New York Skin and Cancer Hospital, but we could not see that it produced as good results as the *x*-ray, and no satisfactory data can be given.

It would be useless to detail the many modifica-

tions of local treatment which have been employed in individual cases during the past 35 years, with varying success, for experience has gradually narrowed down the methods of treatment to the four mentioned, namely: 1, Complete and radical surgical removal in certain cases where this seems imperative; 2, very thorough and deep cauterization, preferably with Marsden's arsenical paste, used as he describes; 3, the curette, employed as previously explained; and 4, the *x*-ray. To these may be only added that in the earliest, superficial epithelial derangement, really the precancerous stage, the constant application of ointments, containing such substances as salicylic acid, pyrogallic acid, ichthyol, etc., will often succeed in restoring to health lesions which, if untreated or maltreated, will unquestionably result in active epithelioma.

In conclusion, therefore, we wish to emphasize the following points:

1. The most frequent form of cancer which the dermatologist is called on to treat is, both pathologically and clinically, quite a different growth in its relatively benign course, from the usual conception of cancer.

2. It occurs chiefly about the face, in places where radical operative measures are apt to produce serious deformities, which very materially add to the patient's discomfort.

3. While the experience of 35 years demonstrates that many cases can be permanently cured by caustic pastes, these are at times disappointing and may lead to an aggravation of the trouble.

4. The curette cannot be depended on alone, but requires additional destructive agents to the base left after operation.

5. By the proper use of the *x*-ray we have a safe, and, in cases that have not been grossly neglected or maltreated, a sure method of cure, with the least amount of deformity.

6. In cases where knowledge and experience shows that these lighter measures are not likely to avail in checking the course of the disease, recourse should certainly be made to complete surgical removal, as this has been shown to be permanently successful in a reasonable proportion of cases.

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ACUTE INVASION OF THE KIDNEYS BY THE BACILLUS COLI.*

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The pathology of derangements of the kidneys abounds with uncertainties and unsettled problems because of the many yet unknown factors in the physiology of these paradoxical organs. Thus, as the proper tissue of a secreting gland is constructed for elaborating its own specific secretion, it is natural to suppose that the more that tissue is destroyed the less would the gland secrete. But if three-fourths of both kidneys be experimentally excised, the remaining one-fourth will secrete much more urine, and a great deal more urea, than will the intact kidneys, and the animal will die from his normal renal secretion being so excessive. This fact well illustrates how little we know of the processes of bodily metabolism.

Likewise, the clinical accompaniments of the different diseases of the kidneys which we meet in practice are more contradictory in their significance than those of any other class of affections, except in Graves' disease. A typical case of parenchymatous nephritis ends in uremia, but so does a chronic interstitial nephritis. The antecedents of the first are abundant albuminuria and general anasarca; those of the other are virtually no albuminuria and no dropsy. An acute nephritis may end in suppression of urine and death from uremia. But the most complete suppression of all is by sudden obstruction of the ureters by renal calculi. Here the patient dies without either the symptoms or the accompaniments of uremia.

The subject being so extensive, I must now limit myself to only one condition of renal derangement—and that also will be found to be no exception to the rule—that the kidneys are fertile in surprises for the medical man. That condition is acute septic invasion of the kidneys by the *Bacillus coli*.

The commonest occasion of this condition, as might be expected, is in the course of typhoid fever. The state of the intestinal walls in this complaint affords many opportunities for the entrance of this organism into the general circulation. The rule, however, is for this complication to occur only in the later stages of the fever. Sometimes its advent then is marked by severe rigors, the occurrence of which in the course of typhoid fever should always raise suspicions of this invasion of the kidneys and lead to immediate examination of the urine for the presence of this bacillus. During the rigors the aspect of the patient is very serious, as if he were on the verge of fatal collapse. If the patient, however, is young, the prognosis is not necessarily bad; it is otherwise if advanced in years, particularly if fleshy and the rigors are of frequent occurrence. At other times, without rigors, the patient's general symptoms become very unfavorable. If he has not had delirium before, it now sets in. The temperature also becomes very irregular. Suspicion of the invasion of the kidneys by this bacillus should be at once aroused if the urine diminishes. All this was well illustrated in the case of a medical friend with typhoid fever whom I saw in consultation. In the fourth week of apparent beginning convalescence he suddenly became delirious, with a marked rise of temperature. The urine also was much decreased. I recommended his physician to have his urine examined for the *Bacillus coli;* they were found in myriads in his urine. Under specific treatment he at once improved, became rational, the temperature fell, and the bacilli disappeared from the urine. A week afterwards he had a relapse, with a reappearance of the bacilli, and under the same treatment again improved. Ten days afterward, when his temperature had become normal, he suddenly developed pulmonary edema, to which he succumbed in a few hours.

Another example, and wholly different in its antecedents, is when the invasion supervenes in a patient who has chronic interstitial nephritis. As often is the case in this condition, the patients may have been but little discommoded by their kidney disease and have attended steadily to business. Suddenly, and usually after some indiscretion of diet, they have an attack of gastroenteritis. The kidneys at once show a tendency towards suppression, and if the actual condition is not recognized, so as to be specifically treated, the patients soon succumb. I al-

*Paper read at the New York Urological Society, January 22, 1908.

ways dread an attack of so-called cholera morbus in elderly people, and recommend that the state of the kidneys should be immediately investigated.

At other times these patients are suddenly taken with serious cerebral symptoms, passing into coma, with hyperpyrexia. Such fever accompanied by oliguria is very significant, as a brief account of the following case will illustrate. I was called in consultation to see a lady whose physician told me that she had showed some symptoms of renal trouble for a good while, but after partaking of a too full and varied meal she complained of her head, high fever set in, and she soon passed into deep coma, with a temperature of 105°. I gave a favorable prognosis, and, by active treatment, in twenty-four hours the whole clinical picture changed, and in a week she was out of bed.

At other times this invasion occurs in patients who have had chronic ulcerative colitis, and, owing to its illustration of the specific nature of this condition, I would give the following example: I was called to see an old friend of mine, a physician in large practice, and who had often before called me in consultation, but now had been wholly delirious for six weeks. I was told that he was succumbing to a severe attack of acute parenchymatous nephritis, in corroboration of which statement I was shown copies of frequently repeated examinations of his urine by the chief of one of the best equipped laboratories which we have in this city. At the bottom of each page the diagnosis was written "severe acute parenchymatous nephritis, with much albumin, blood, and casts." On examining the patient I said that, whatever the laboratory diagnosis might be, he did not show a single clinical symptom of acute parenchymatous nephritis. As the patient had more than once consulted me previously for ulcerative colitis, I suspected that his was a case of septic invasion of the kidneys by the *Bacillus coli,* and therefore gave a very favorable prognosis. His physicians could hardly agree with me, but agreed to put him upon the treatment I recommended. The reasons for my diagnosis were, in the first place, that he had not a sign of edema, that his pulse was compressible, and, moreover, that delirium—certainly the long, active delirium he had shown—was rare in parenchymatous nephritis; and if I had suspected that that was the condition I would not have given such a favorable prognosis. Thirty-six hours after the treatment had been begun the comment written at the bottom of the report coming from the laboratory was, "astonishing improvement," "no albumin, no blood, and no casts!" On my first requesting that his urine should be examined for the *Bacillus coli* the report was that they were found in exceptional abundance. A little over a year afterwards my friend, this patient, called upon me, and said he had never felt better in his life and that he was busy at his profession for sixteen hours a day.

I once had a similar development occur in the case of a very severe and prolonged attack of influenza, also in the case of a well-known medical man. When we recall that in the first year of this epidemic (in 1890) in New York we had so many cases of fatal gastritis or of gastroenteritis occur in influenza, this infection doubtless occasionally allows of such an invasion. This patient, after a number of weeks of really prostrating developments of the infection, began rather suddenly to show cerebral symptoms, with diminished urine. I at once had his urine examined for the bacillus and it was found in great numbers. A short course of treatment entirely altered the symptoms for the better.

I do not know of any serious condition in which so much can be done if its nature is only recognized, nor, I may add, in which the event is so generally fatal if not specifically treated. In each case, however, the diagnosis can be certainly made only by the examination of the urine specially for the *Bacillus coli* and then finding them in great numbers. As the urine is an unfavorable medium for the growth of this organism, the inference is plain that they could not have entered the bladder except by way of the kidneys, because no accidental introduction of them by catheterization or otherwise could account for the immense numbers of these bacilli usually found in such cases. The clinical symptoms of this condition are unlike those of any other kidney derangement. I have not met with a single case of convulsions, but active delirium is common. There is no edema and the pulse is soft. Profound coma soon supervenes in all cases, with hyperpyrexia, and at autopsies the kidneys are then found riddled with discrete collections of the *Bacillus coli.* The specific treatment above alluded to I would briefly outline as follows:

First, a dose of calomel, 10 grains, and compound jalap powder, 40 grains. If the patient is so comatose that swallowing is impracticable, no time should be lost in resorting to the specific medication being administered per rectum, and which is 10 grains of urotropin and 10 grains of sodium benzoate in 4 ounces of water, given in urgent cases every two hours. When the symptoms improve, the doses may be administered by mouth every three or four hours. When it is otherwise allowable, the action of the mercurial purgative may be awaited before beginning with the urotropin. The urotropin is specific in its operation because it is an active poison to the *Bacillus coli,* and, as it is excreted by the kidneys, it promptly destroys this invading organism. Urotropin alone, however, often irritates the kidneys and urinary passages, with symptoms of strangury, but in my experience such an occurrence rarely happens if sodium benzoate is given with it. For the rest, the calomel purgative should be repeated every other night until the kidneys are secreting freely. Meanwhile great assistance will be furnished against the oliguria by frequent enteroclysis with hot normal saline solution at 120° F., or, if that is not sufficient, with hypodermoclysis.

In conclusion I would remark that for progress in medicine, clinical observation and laboratory research are analogous to our two legs in walking. Some of us seem to choose one of these two legs chiefly or alone to go by, and in justification they point out how halting the gait is when their favorite leg is not used. In one of the cases above reported I disagreed with the laboratory diagnosis because the clinical symptoms told a different story. But both my diagnosis of this serious kidney derangement and my line of treatment for it are based on a paper published ten years ago by our distinguished fellow-townsman, Dr. Simon Flexner, on septic invasion of the kidneys by the *Bacillus coli* in those cases of chronic interstitial nephritis which often terminate so unexpectedly with symptoms of acute nephritis, and which he showed to be due to recent, and not to chronic, affection of the kidneys by this organism.

On the other hand, I regard it almost certain that not a few cases of chronic kidney disease are primarily due to repeated slight infections proceeding from the intestinal tract. However that may be, no clinician should fail to watch that he is always keeping step with the research laboratory.

ARNETH'S METHOD IN THE CLINICAL STUDY OF PULMONARY TUBERCULOSIS.

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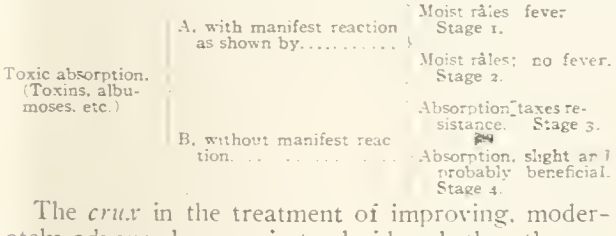
In his study of the relation of the neutrophilic leucocytes to infectious disease, Arneth assumes that these leucocytes enter the circulation with an undivided nucleus, and that the cells as they grow older are characterized progressively by an increasing number of nuclear subdivisions and by a fuller development of the granules. The condition of the neutrophiles in a given case is determined by a comparison of the percentages of cells with one, two, or more nuclear subdivisions with the normal percentages obtained by averaging the counts of a number of healthy individuals. If it is found that the neutrophiles consist of cells with single or few nuclei in a percentage relatively large as compared with the normal blood, he infers that the older cells have been destroyed in some way, probably as a result of contact with bacteria and bacterial toxins and their places supplied by young cells which have not yet completed their development. Increased activity in the production of leucocytes is a manifestation of the reaction of the organism to bacterial infection. In cases with good reaction, a leucocytosis is present. In less favorable cases the production of new leucocytes keeps pace with their destruction, and the leucocyte count is normal. When reaction fails, a leucopenia is present. The loss of the older neutrophiles furnishes an indication as to the amount of circulating bacteria and bacterial toxins.

This theory seems to throw much needed light upon the relations of leucocytosis to infection, but lack of space forbids any attempt at a discussion of the many interesting questions thus raised. The study which it is the object of this paper to report was purely clinical in its scope, undertaken with a view to determine whether Arneth's method might be of practical assistance in the treatment of pulmonary tuberculosis. For the details of the method, the reader is referred to the original monographs[1], [2], [3], of Arneth and to a paper by Arnold C. Klebs and H. Klebs, first read in the 1906 meeting of the National Association for the Study and Prevention of Tuberculosis, and published at a later time in the *American Journal of the Medical Sciences*.[4] For an understanding of the following it need only be stated that Arneth divides the neutrophiles into five classes according to the number of nuclear subdivisions, the fifth class comprising leucocytes which have five or more subdivisions. He further subdivides each class according to the shape of the nuclear fragments, distinguishing myelocytes, slightly indented and deeply indented nuclei in the first class, and classifying the fragments of the succeeding classes as circles (*runde Kerntheile* and loops (*Schlingen*). The classes being arranged from left to right in numerical order when tabulated, an increase in the percentage of cells with few nuclei is conveniently denominated the "drift to the left."

The subdivision of classes is practised by Arneth on the assumption that the nuclear subdivisions which are loop-shaped, that is, are longer than broad, are destined to subdivide still farther, whereas the approximately circular (spherical) subdivisions have completed their development. If therefore, there be found, for example, a preponderance of cells with two circles in Class Two, the count is not so favorable, other things being equal, as if the majority of the cells contained two loops. In our counts the shape of the nuclear fragments is always observed and recorded. It is doubtful, however, whether such distinctions are of practical importance, and they will be ignored in this paper.

Arneth uses Ehrlich's triacid stain. He gives the impression that he prefers a stain which does not stain the nucleus sharply in order that the threads connecting its subdivisions may not become visible. We prefer a sharp nuclear stain and count portions of the nuclei connected only by a thread as separate nuclei. After some experimentation we always use well-ripened Delafield's hematoxylin and a five-tenths per cent. alcoholic solution of eosin, staining first with eosin and washing before applying the hematoxylin. In properly stained specimens the protoplasm of transitional cells and large lymphocytes is grayish blue: that of the polymorphonuclears light pink. Comparative counts of the same blood stained by hematoxylin and eosin and by Hasting's stain give practically the same percentage of the transitional cells and a difference of four per cent. in the large lymphocytes. The advantage of the hematoxylin stain is that it does not stain the granules, which if well stained obscure the nucleus and render the counting of its division difficult: also, that if the nuclear threads are well stained they call attention to divisions of the nucleus which might otherwise be counted as one. The blood smears must be thin. It is our invariable practice to count two hundred cells.

In a case in which the patient has no fever and no moisture in the lungs, the important question to decide with reference to treatment is the amount of toxic absorption which still continues. Too often it is assumed that the absence of manifest signs of reaction as obtained by the thermometer and stethoscope is a proof of complete arrest of the morbid process. Yet all will admit that in a well-marked case of tuberculosis of the lungs tubercle is still present, toxic absorption is probably still active, and the normal temperature and improved pulmonary conditions mark but the first steps toward a permanent cure. The stages which must be passed through as the patient improves in such a case may be represented schematically as follows:


Toxic absorption. (Toxins, albumoses, etc.)
A, with manifest reaction as shown by.....
Moist râles fever Stage 1.
Moist râles; no fever. Stage 2.
B, without manifest reaction.
Absorption taxes resistance. Stage 3.
Absorption, slight and probably beneficial. Stage 4.

The *crux* in the treatment of improving, moderately advanced cases, is to decide whether the patient who has passed through Stages 1 and 2, has reached Stage 4, or is still in Stage 3. When the tuberculous lesion is large, the wise man gives the patient the benefit of the doubt and keeps him quiet. It is hard, however, to exact obedience indefinitely in the absence of any means of demonstrating the correctness of one's opinion, and some cases of disseminated tubercle are very deceptive in their simulation of health restored. An objective proof that toxic absorption is present in a degree which constitutes a tax upon the resistance of the afebrile patient is one of the great desiderata in the treatment of pulmonary tuberculosis. Arneth has, it appears to us, furnished the means of securing such proof in his method of studying the neutrophilic leucocytes.

Arneth has shown that the intravenous injection of nuclein, peptone, tuberculin, and tubercle bacilli causes a marked drift to the left in the healthy rabbit. Relatively large doses of tuberculin produced the same results at his hands in the tuberculous human subject. It seems certain, therefore, that bacterial toxins can influence the leucocytes. In acute infections the influence is so marked that there can be no reasonable doubt that it is due at least in large measure to the toxins of the disease. If, however, we apply the method to measure toxic absorption in the afebrile apparently convalescent patient, it may not be out of place to inquire upon what grounds we consider that the count of the leucocytes is a trustworthy indication of such absorption. Our confidence in the method is based upon the fact that in many observations we have met with no case in which the count was a "wild" count, at variance with the subsequent course of the disease or the otherwise ascertained data as to the patient's condition. It bears on the other hand no relation to the state of the general nutrition. Fat and to outward appearance healthy patients with large lesions give bad counts; thin and pale subjects without tuberculosis may give normal or even hypernormal counts. Exercise and the ingestion of various drugs affect to a slight extent the leucocyte-picture even in the healthy. The intravenous injection of nuclein, peptone, etc., above referred to, has a powerful but very transitory effect in the healthy animal. It may, therefore, be easily seen that the blood of patients who exercise irregularly and to relative excess may furnish counts which fluctuate widely because absorption varies. For trustworthy results it is necessary that patients lead well-regulated lives and that important complications, especially intercurrent infections, be carefully excluded. Arneth lays stress upon the relatively marked effect of pyogenic organisms upon the leucocytes and is inclined to ascribe the bad count in advanced cases of tuberculosis to infection by these bacteria (mixed infection), and to the draining away of leucocytes in purulent expectoration. We shall, however, cite two severe cases, one of them having a large cavity, in which the Arneth count is bad although expectoration has always been scanty and cultures of the sputum seem to exclude mixed infection. From the study of these cases as well as of the many afebrile cases in which also mixed infection is improbable, there seems to us sufficient evidence that the toxins of tubercle directly and strongly influence the leucocytes.

In advanced and active tuberculosis, the method of Arneth gives us, as a rule, no information which we do not already possess. The leucocyte counts fluctuate but are always abnormal. In cases admitted to this hospital, usually after a long railroad journey, immediate examination of leucocytes, in all but slight cases, gives unfavorable counts which are much improved as a rule after the patient has rested a week or more. Absence of improvement after such a period of rest is of very evil prognosis, but it by no means follows that the prognosis is necessarily good for patients who thus improve, the improvement in advanced cases being too often temporary.

In studying Arneth's tables one feels a sense of confusion from the large number of subdivisions. A portion of the difficulty is done away with by neglecting the distinction upon which Arneth insists as to the shape of the nuclear fragments in the various classes. It still, however, remains difficult to decide at a glance how a count is to be classified and the examination and comparison of a large number of counts is a tedious matter. An attempt has been made by us to obviate this objection by the use of an arbitrary index which is made by adding together the percentages of Class 1 and Class 2 and one-half the percentages of Class 3, thus, as it were, taking the number of neutrophiles which are to the left of a line drawn through the middle of the table. For a rough estimation the point of chief importance is the relative percentages of Class 2 and Class 3. For example, the count of a patient on admission was 17:57:23:2:1; index 85.5. Nine months later it was 6:23:50:21:0; index 54, the difference between indices being largely due to transposition of percentages of Class 2 and Class 3. In this method, therefore, Class 2 is fully represented while the number of Class 3 is given but half its value. Class 1, which generally contains a small percentage, is merged in Class 2 without materially affecting the result, and Class 4 and Class 5, the percentages of which are practically deducted in this method, are likewise not distinguished. For severe cases in which Class 1 has a high percentage the index gives relatively too favorable figures. The chief utility of the Arneth method is, however, considered to be found in the study of cases which are approaching a cure and in such cases this objection is of no practical importance. A manifest advantage in the use of an index is that it permits the construction of a curve. The index of Arneth's average count of normal individuals is 60.5; of our normal average, 67.

The number of cases observed by us is not sufficient to justify dogmatic statements. The study of the relations of the Arneth's index to the clinical course of pulmonary tuberculosis leads us to the following provisional conclusions:

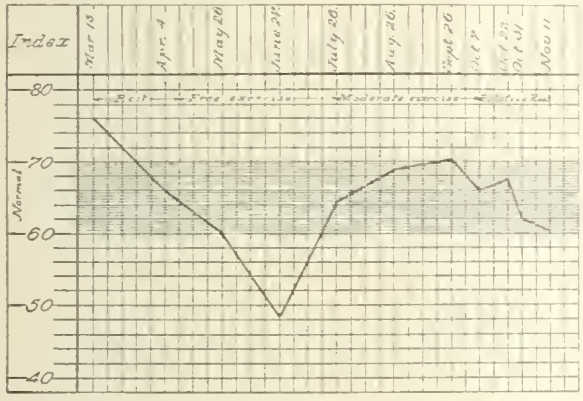
The index of the normal individual at work is between 60 and 70; with complete rest and abundant food, the index should fall below 60. A tuberculous patient can not, therefore, be considered as entirely free from manifest toxic absorption if his index remains above 60 when at rest. Practically, however, patients with an index between 60 and 70 may usually be allowed moderate exercise. If the index remains below 60, with moderate exercise, the case is very favorable. Some tuberculous cases work for years with an index above 70. Usually in such cases some activity persists or a small suppurating cavity is present. In general, however, an index of 70 or more is an indication for absolute or relative rest. Certainly no patient can be considered cured whose index is found to be usually above 70. Too favorable conclusions must not be drawn from an occasional fall in the Arneth index, nor must too great importance be ascribed to minor variations.

The following cases will serve as illustrations of the practical applications of the Arneth method:

Case I. The patient was admitted March 8, 1906, with tuberculous laryngitis. There was considerable inflammatory thickening of the left ventricular band and cord and a small swelling near the right arytenoid. No ulceration was visible. An apparently inactive lesion, presumably tuberculous, was found at the apex of the right lung. Tubercle bacilli present in sputum. Temperature, slightly raised. Arneth count, index 76. The presence of tubercle bacilli in connection with the somewhat unfavorable "blood-picture" raised the question whether some ulceration might not be present at a point invisible with the laryngoscope or whether the lung lesion was as inactive as it seemed. Such doubts were soon set at rest by the future course of

the case and the rapid improvement of the Arneth count was an important factor in determining the prognosis. Observations by the Arneth method having been taken at nearly regular intervals, the subjoined chart was made to show the curve of the indices, which were as follows: March 15, 1906, 76; April 24, 66; May 26, 60; June 27, 48.5; July 29, 64.5; August 26, 69; September 26, 76.5; October 7, 66; October 22, 67.5; October 31, 62; November 11, 60.5. During the first four months, the patient was taking but little exercise. The rapid fall reaching a hypernormal blood-picture in four months, showed pretty conclusively the absence of any considerable activity of the tuberculous process. After this result was reached, the patient began to ride and drive and the subsequent fluctuations, remaining close to normal, are about what might be expected in the healthy man under the same conditions as respects exercise.

The patient left the hospital on November 4, 1906, and plunged into active work in the East. He was seen in May, 1907, when on laryngoscopic examination the left cord was found to be apparently normal, except for a slight trace of hyperemia, and a depression near the right arytenoid marked the site of the former swelling. The patient has since remained well.



Case II. The patient, a large and stout man, after treatment for six months had gained so enormously in flesh and felt so well that he desired to go to duty. Some activity was, however, still found present in December, 1906, and the Arneth count was, December 2, 1906, 9:41:42:7:1. I. 71. In February, 1907, the disease seemed arrested. The Arneth count on February 5, 1907, was 6:29:50:15:0. I. 60. The patient was returned to duty, and has since, it is believed, remained well.

Case III. A soldier, admitted to this hospital, November 15, 1899, with a small tuberculous lesion of the upper lobe, right lung. Has been on duty as a clerk since March, 1900, and not under close medical supervision. An athletic man of vigorous physique, devoted to violent exercise. In 1905, the lesion in the right lung had healed, but a small active lesion was detected in the left upper lobe. His case is typical of the class of patients in apparently excellent health with always normal temperature in whose lungs small foci of tuberculous activity nevertheless persist indefinitely, it is believed, because they do not allow themselves sufficient rest. The neutrophile counts are too widely separated to be of much significance so far as the clinical course of the case is concerned, but it is interesting to note that even so small lesions in so vigorous a patient exert at times a perceptible influence upon the leucocytes. At present his disease appears to be quiescent.

Arneth counts:

October 16, 1905,	8	55	32	5	0	I. 79
February 5, 1906,	5	42	49	6	0	I. 69.5
March 7, 1907,	5	40	42	7	0	I. 72
December 13, 1907,	6	44	34	16	0	I. 67

Case IV. Patient, a robust man, was originally admitted in 1903 with a small tuberculous lesion of the upper lobe, right lung. Returned to his home in July, 1904, apparently cured. Not feeling well in the following spring, he started again for the West. Had a severe hemorrhage on the train and arrived at this hospital on a cot, May 6, 1905. Diagnosis, disseminated tubercles, upper, middle and upper part lower lobe, right lung. During treatment temperature was usually normal or subnormal. The patient was in good flesh and to outward appearance in good health. Lesions pursued a sluggish course.

Arneth counts:

November 10, 1905,	9	30	40	6	0	I. 71
January 10, 1906,	4	42	44	9	1	I. 68

The patient left this hospital, March 31, 1906, and engaged in business pursuits. At this time his lesions seemed inactive. He returned for a brief visit on August 24, 1906. On physical examination the condition of the lungs was found unchanged. Arneth count, August 28, 1906, 13:53:31:9:0. I 81.5. Notwithstanding the large lesions, the patient's condition during relative rest seemed to approach closely to the normal. This last count in which the rise of the index is probably due to the increased absorption of toxins from the exertion attendant upon travel, shows how unstable the condition of such a patient really is.

Case V. A negro soldier who had only doubtful indications of pulmonary tuberculosis and negative sputum during a treatment of six months, on February 18, 1907, had an Arneth count: 3:25:54:17:1. I. 55. He was returned to duty on April 23, 1907, but was readmitted on September 3, 1907, with an extensive tuberculous involvement of the lungs. On November 6, 1907, Arneth count was, 30:56:14:0:0. I. 93. Death occurred on December 24, 1907. In the lungs were found at the autopsy two small cavities with thick walls and deeply situated tubercles becoming fibrous, also an enormous number of recent tubercles. It seems altogether probable that the tuberculous disease was arrested at the time of the count of February 18, and that under the less favorable conditions of military service a reinfection from the old lesion or from without took place subsequently.

Case VI. In the following case the persistently unfavorable Arneth count predicted a more serious ending than was anticipated. The patient, a powerfully built and corpulent man, was first admitted to this hospital in 1899, and underwent several prolonged periods of treatment. He had well-marked tuberculous involvement of the upper lobe, left lung, and a lesser involvement of right upper lobe, besides tuberculosis of the prostate, spermatic cord, and epididymis. For the latter complications several surgical operations were performed at intervals.

In the spring of 1907 he sought infirmary treatment with complete rest in the hope of recovering more rapidly. At this time the lung lesions did not manifest much activity, the sinuses remaining from the operations on the spermatic cord were closed. Expectoration, rather profuse: purulent. Temperature, usually nearly normal. Nutrition, very good. The chief unfavorable signs were the persistent rapidity of the heart action and a slight bluish tinge in the ruddy color of the face. Asthmatic attacks occurred at night occasionally. There were

considerable fluctuations of the temperature during the summer. On November 3, 1907, the temperature shot up and two days later hemoptyses occurred. The hemorrhages were numerous and profuse for several days. The expectoration gradually assumed a prune-juice color, pulmonary edema developed, and the patient died on November 12. The autopsy showed a slightly dilated and markedly fatty heart. In the left upper lobe a large cavity with unusually thick and dense fibrous walls: tubercles in both lungs undergoing transformation into fibrous nodules; tubercles in the prostate, calcified; degeneration of kidneys and liver.

In short, the patient was becoming cured of his tuberculosis when he died of secondary degenerations and infections. In the light of the autopsy it seems probable that in this case the unfavorable counts are largely to be ascribed to secondary infection and to the chronic suppuration of the cavity with the consequent loss of leucocytes.

Arneth counts:

October	15, 1905,	12 : 54 : 28 : 6 : 0. I. 80
February	6, 1906,	11 : 62 : 27 : 0 : 0. I. 86.5
July	26, 1906,	14 : 52 : 30 : 4 : 0. I. 81
March	23, 1907,	9 : 52 : 33 : 6 : 0. I. 77.5
April	27, 1907,	16 : 66 : 18 : 0 : 0. I. 91
June	10, 1907,	10 : 61 : 23 : 6 : 0. I. 82.5
July	31, 1907,	29 : 58 : 11 : 2 : 0. I 92.5

That other causes than mixed infection and chronic suppuration can produce similar results is shown by the two following cases:

Case VII. The patient was admitted on June 3, 1905, with high fever, consolidation, and breaking down of the greater part of the right lung. He remained absolutely confined to his bed for more than two years. An enormous cavity developed with consequently marked displacement of the heart. His present condition is very good, activity of the tuberculous process having nearly disappeared, and the temperature having become almost normal. During his entire illness there has been no expectoration further than a drachm or two of thin mucopurulent fluid in the morning. In a recent bacteriological examination of the sputum it was washed six times in sterile water, the last water remaining sterile. On plating, each of two Petri dishes developed but one colony, of streptococcus and staphylococcus respectively.

Arneth counts:

August	24, 1906,	26 : 47 : 27 : 0. I. 86.5
November	1, 1906,	10 : 58 : 31 : 1. I. 84 5
December	21, 1906,	14 : 62 : 22 : 2. I. 87
February	3, 1907,	8 : 61 : 29 : 2. I. 83.5
March	8, 1907,	8 : 61 : 30 : 1. I. 84.
November	3, 1907,	4 : 42 : 49 : 5. I. 70.5

Case VIII. A female patient, had remained at work as a nurse without being conscious that she was seriously ill until extensive pulmonary tuberculosis had developed. Rather dense tuberculous lesions, both upper lobes, scattered lesions of left lower lobe. Widespread catarrh but to the present time no evidences of extensive consolidation or breaking down of the lung. Temperature nearly always normal. The general appearance, with rest, became that of health. Sputum loaded with tubercle bacilli. Cultures of the sputum after washing, were sterile. Arneth count, November 18, 1907: 22:59:16:3:0. I. 89.

The two preceding cases, in which mixed infection is almost certainly absent, are believed to prove that the toxins of tubercle directly affect the neutrophiles.

Case IX. A patient who had had pulmonary tuberculosis in 1900, after a winter in California during which he had had a constant cough with expectoration, and had been overworked, fearing a recurrence, presented himself for examination in March, 1907. Physical examination of the lungs showed no signs of activity. After a rest of several weeks, the Arneth count was 1:32:46:21:0; I. 56. He was advised to resume work less strenuously and has since remained well.

Case X. A soldier on duty as a clerk, a tall, thin young Irishman, coming up for examination for promotion, was subjected to a physical examination in the course of which there were found some doubtful indications of pulmonary disease. His color and the configuration of his chest tended to corroborate the probable diagnosis of pulmonary tuberculosis. The blood count by the Arneth method on February 7, 1907, gave 2:19:57:20:2; I. 49.5. In view of this excellent count, it was decided to pass him physically. His health has since been very good.

Case XI. A soldier sent here with the diagnosis of tuberculosis had been found to present evidences of pulmonary involvement, and had a cough with purulent expectoration. Tubercle bacilli were, however, never discovered and his general condition appeared to be excellent. On examination, areas of moist râles were found in the right upper and left lower lobes.

Arneth counts:

October	19, 1906,	2 : 24 : 50 : 22 : 2. I. 51
January	3, 1907,	1 : 18 : 56 : 22 : 3. I. 47

He was returned to duty, gained distinction as a ballplayer, and has remained for a year an exceptionally fine specimen of healthy manhood.

Case XII. The patient was admitted on July 24, 1906, much reduced in health with the diagnosis of pulmonary tuberculosis. The lungs, however, did not give evidence of disease further than a bronchitis. The history appeared to point to a precedent attack of fibrinous bronchitis.

Arneth counts:

July	30, 1906,	7 : 42 : 33 : 15 : 3. I. 65.5
March	29, 1907,	4 : 25 : 55 : 15 : 1. I. 56.5
November	4, 1907,	5 : 31 : 53 : 11 : 0. I. 62.5

The patient went to duty in about six months and has since been most active, both bodily and mentally. Except for a slight recurrence of fibrinous bronchitis, he has remained perfectly well.

Case XIII. A patient who had been treated for several years in sanatoria in various parts of the United States, after a residence of some months in the vicinity, was admitted to the hospital on December 15, 1906. At that time he complained of being too weak to walk. The pulse was accelerated and the digestion poor. Temperature usually normal. Nutrition very good. Physical examination showed an old lesion involving upper lobe and upper portion of lower lobe, left lung, with a small cavity in upper lobe, but no signs of activity. The question that presented itself was whether the weakness, digestive disturbances, and irritability of the heart might not be due to a masked recurrence of tuberculosis. Upon inquiry into the patient's habits it was learned that he had been advised to eat as much food as possible and that his wife had been systematically stuffing him. The unfavorable symptoms were ascribed to overfeeding, and the patient was treated accordingly. This view of the case was corroborated by the Arneth count:

December	21, 1906,	4 : 39 : 50 : 7 : 0. I. 68
March	29, 1907,	1 : 33 : 55 : 10 : 1. I. 61.8

The patient left the hospital on June 3, 1907, much improved, except for an attack of otitis media. His present condition is understood to be very good. Attention is invited to the improvement which took

place in the Arneth counts notwithstanding, or perhaps it would be more correct to say because of, a considerable reduction in the amount of food consumed.

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THE DIAGNOSIS AND TREATMENT OF EARLY ECTOPIC GESTATION.*

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The subject of ectopic gestation has grown so threadbare, through constant repetition in recent years, that it has required an effort of presumption on my part to sit down and prepare the present paper. Nor would I have done so had I not felt that we have not yet reached the limitations of our knowledge concerning it, particularly in regard to its diagnosis and treatment. For my own selfish reasons, in great measure, did I therefore grasp at this opportunity to arrange the material which has come my way in the course of the last dozen or more years, and, without attempting to give a statistical review, or a thorough report of all my cases, I have tried to make a careful analysis and study of the subject in hand. The present paper, therefore, being a purely personal study, I have abstained from consulting the literature of the subject, and I have confined myself entirely to the results of my own experience.

Early ectopic gestation, confined to the first weeks or months, shows different varieties and conditions on the operating table. Concisely stated, the actual pathological picture ranges between nothing apparently wrong with a Fallopian tube up to a fetus and placenta in the abdominal cavity. Some of the lesions are so minute that even the pathologist with the slides under the microscope can hardly make the diagnosis. Ordinarily a swollen or ruptured tube with more or less free blood in the peritoneal cavity represents the conditions present. An ectopic gestation may present simply an unruptured Fallopian tube containing an ovum or blood clot, and discovered accidentally on opening the abdomen. In the vast majority of cases, however, something has actually happened to disturb the ovum in its tubal bed—usually either a tubal abortion or a tubal rupture. In these cases, when the tubal contents have not been discharged into the peritoneal cavity, a hemorrhagic condition of the tubal interior will be seen, or a clot may be discovered adherent to the fimbriated end of the Fallopian tube, which may apparently otherwise show no gross lesions; or the embryo or fetus may be discovered among the clots and free blood of the peritoneal cavity. In these latter cases the fetus may continue to live and the case may go on to one of abdominal pregnancy. The same result may ensue after rupture between the folds of the broad ligament. A true example of ovarian pregnancy I have never as yet met. Pelvic hematocele is present in most cases of ectopic gestation.

For clinical purposes our knowledge of the microscopic and macroscopic appearances helps us little in making a diagnosis between tubal abortion and tubal rupture, although a probable diagnosis can at times be ventured. The signs of a large intraperitoneal hemorrhage are not sufficient, according to my experience, to determine the differentiation. Nor is it possible by any means at present at our disposal to tell positively before operation or autopsy whether the pregnancy is of the tubouterine, tuboovarian, isthmic or abdominal varieties. Nor do I know of any method by which we can safely say that a blood collection in the pelvis is either a pelvic hematocele or a pelvic hematoma, excepting that my operative experience teaches me that we seldom meet a pelvic hematoma—at least rarely—without the presence of blood in Douglas' cul-de-sac or in the peritoneal cavity at the same time. At some future day we may know these things, but for the present we are ignorant of these finer details in diagnosis.

In the attempt to make a diagnosis of ectopic gestation a careful previous history is desirable. The age of the patient, period of married life, nature of menses previous to and since marriage, the number of children or abortions, including their nature and postpartum ailments—all should be inquired into. The possibility of gonorrheal or puerperal infections, of endometric or adnexal disease should be sought for in such previous history. Previous operations—especially curettages—should be noted. In taking note of the present illness, the mode of onset—particularly if an attack of syncope is referred to—should be analyzed. Symptoms pointing to the possibility of an early pregnancy and an impending or an incomplete abortion are of peculiar value in the history of the case.

My own observations regarding these various data are as follows: While the average age at which ectopic gestation was noted was 30 years, it has been my experience to operate the youngest case at the age of 18 years and the oldest at 44. The period of married life extended over as short a period as three months, as a minimum, and twenty years, as a maximum. One out of every four women had never been pregnant, and one-third of the remainder had given birth to one child only. So that the element of sterility on which so much stress was laid by the earlier writers is not of absolute importance as a predisposing factor. Still it is of interest to note that in one-half of my cases the time elapsed since the last confinement, in those women who had borne children, was estimated at an average of four years. The range of this period of relative sterility extended between six months and twelve years. In the primary sterility cases I have operated women as recently as three and four months after marriage. While not able to give exact figures, an unusually large number of my cases gave evidence of previous uterine disease, and, in many of them, a distinct gonorrheal infection could be established. Ectopic gestation is frequently overlooked because a woman is nursing her last child. This was the case in five of my recent operations. While a history of skipped menses is to be sought for, it should be borne in mind that in 25 per

*Read at a meeting of the Harlem Medical Association, held on February 5, 1908.

cent. of the cases no such statement can be secured.

The most important subjective symptom seems to be the irregular uterine bleeding of which the patient complains. This symptom will be found predominating in nine out of every ten cases. I have never been able to convince myself that the chocolate-colored blood so frequently described is really pathognomonic. At times it was absent, or the blood was bright red, and, on the other hand, I have often seen such bleeding in cases of other pelvic disorders—particularly in cases of uterine mole. The bleeding may be slight or so profuse as to require vaginal packing. At times it is not even irregular.

Some histories indicate merely a condition of menorrhagia or prolongation of the last normal menstruation, to seven or eight or ten days. The usual condition, however, is one of spotting during a period of days, weeks, or even months.

With nearly equal frequency do the patients complain of pain in the abdomen. This will naturally vary in character and severity, according as it is due to the distention of a tube, its rupture, or the invasion and irritation of the peritoneum by escaping blood. The claim that this pain is characterized by shooting down a limb holds true in only a limited number of cases. Anyone who has had frequent opportunity to inspect the interior of the abdomen in ectopic gestation and note the kaleidoscopic variety of pictures present in the different cases will understand readily why the pain must be different in individual sets of cases. As a matter of fact, it may consist of a little backache, an epigastric heaviness, a sense of fullness on one side or the other of the abdomen; it may consist of vague, crampy, intermittent pains; or it may give rise to the most terribly sharp and cutting cramps, resulting in some of the most agonizing pictures of suffering which the physician is ever called on to witness. One woman told me to cut her open as quickly as possible, as one more attack of the pain she had gone through would certainly have killed her. When present on one or other side of the abdomen, pain gives us an important, but not infallible, clue as to the site of the ectopic gestation. In a number of my cases the ectopic pregnancy was on the side opposite to the side over which the pain was complained of. It is best to inquire as to the situation of pain as it occurred at the onset or very beginning of the ailment. The pouring out of blood with consequent irritation of the peritoneum may in the latter stages cause pain anywhere or everywhere within the abdomen.

The third important symptom, and one which occurred in three out of every four of my cases, was syncope. Some women never seem to acquire the habit of fainting, and such women either give no history of syncopal attacks or only refer to having suffered a faint sensation. In the majority of cases, however, the women do actually faint, and the symptom which may often direct your attention to the possibility of an ectopic gestation will at times be brought out by the circumstances that some neighbor or relative resuscitated the patient with alcohol or vinegar during a fainting attack.

The three cardinal symptoms—irregular uterine bleeding, cramps, or pelvic pains, and fainting spells—should direct the attention of the physician to the possibility of ectopic gestation, the diagnosis of which can then be substantiated or negatived by the physical examination. Uterine fibroids and incomplete abortion may also present these symptoms, but can usually be excluded because of the absence or insignificance of pain in the former and the profuseness of uterine hemorrhage in the latter. Other conditions which come up for exclusion will be considered later when referring to differential diagnosis.

Among the less frequent symptoms complained of are rectal and bladder symptoms. Thus one of my patients who called on me in my office hours, complained of difficulty in defecation, associated with girdling abdominal pains. A free evacuation of the bowels gave her entire relief of symptoms which had persisted during several weeks. The local examination, followed quickly by operation, revealed a moderately large collection of free blood in the peritoneal cavity, the result of a number of hemorrhages dependent on early ectopic gestation. Patients with pelvic hematocele often complain of pressure or pain in the rectum. Others refer to pain and difficulty in micturition.

One of my patients had to be catheterized a number of times by the family doctor. Vomiting may be due to the pregnant condition or may be a reflex from peritoneal iritation and due to free blood in the peritoneal cavity. Most patients complain of weakness, varying between a mild grade of debility and the most intense degree of physical prostration. After a spell of symptoms these patients at times feel so good that they refuse to submit to operation, and several women in my experience have insisted on returning to their homes, only to come down shortly afterwards in another attack. Thus, two of my patients, who left my service at Beth Israel and St. Mark's Hospitals, were, to my knowledge, subsequently operated upon at Mount Sinai Hospital, where my diagnosis was confirmed by the findings on the operating table.

The discharge of a decidual sac, as a diagnostic sign, is of great importance, especially if the microscopic examination has excluded the presence of chorionic villi. Unfortunately, in the majority of cases, it is either not expelled or it has been thrown away before being submitted to careful examination. In a recent experience with a physician's wife, who seemed to be unduly prostrated and who ran an afebrile course with a pulse varying between 100 and 120 per minute, the discharge of such a three-cornered sac from the uterus caused me considerable uneasiness until Dr. B. Sheitlis, after a hasty examination, assured me that he found chorionic villi.

The subjective symptoms and history of the case having suggested the possibility of an ectopic pregnancy, we proceed to note the objective findings before we make the diagnosis.

In the absence of associated septic peritonitis or of suppurating hematoceles, these patients seldom present a rise of temperature. While in conditions of shock after a large escape of blood into the peritoneal cavity I have occasionally observed a rectal temperature of 96° F. it is usual to find the temperature normal or perhaps elevated by one or two degrees—100.5° F. or 101.5° F. The pulse is very variable. It may be slow or rapid; it may be regular, irregular, or intermittent: it may be strong and full or it may be weak, thready, and compressible. Even in the presence of intense anemia from internal hemorrhage I have occasionally found the pulse slow—in one case the beat counted 60 per minute. Such a pulse I have frequently observed to become suddenly acceler-

ated up to 130, 140, or even 160 beats per minute. It is remarkable, however, how the most rapid and feeble pulse will improve as soon as the peritoneal cavity is opened and the intraabdominal pressure from a large blood accumulation is relieved. Hence, since many years, the condition of the pulse has been no contraindication to me to proceed forthwith to operate even in the most hopeless and desperate cases.

Having noted pulse and temperature, we next resort to inspection, palpation, percussion, and vaginoabdominal or rectovaginoabdominal exploration.

A glance at the face alone sometimes gives us a clue as to the condition present. On June 5, 1901, I was invited by an able colleague to see a woman who was thought to be dying from cardiac failure due to an old valvular lesion. The intense facial pallor led me to make a careful inquiry into a recent "miscarriage," and as a result of my vaginal exploration I operated that woman in the little dirty kitchen of a tenement house. That woman I saw five years later in perfect health, and I have reason to know that she is still alive and well. My friend, Dr. M. M. Berger, invited me to a case recently. On entering the sick-room, without having begun to inquire into the history of the case, I was struck with the intense anemia of the invalid's face and playfully suggested a snap-diagnosis of ruptured ectopic gestation. One hour later the diagnosis was confirmed on the operating table. I have had a number of similar experiences.

I merely refer to the value of inspection of the face as a strong clue to a suggestive diagnosis of ectopic pregnancy, not as a conclusive sign. The anxious expression, the extreme pallor of the face, skin, lips, and nails, the rigid horizontal decubitus, the tendency to drop into a syncopal state, are all indicative of collapse due to intraabdominal bleeding. With a history of pregnancy the diagnosis is practically complete, provided there is no sign of large external hemorrhage. In walking cases or those of mild character, the anemia is insignificant. Only in the worst cases will dyspnea, or air-hunger, be present, and, with the cold, clammy skin and imperceptible pulse, will it be of the most ominous significance. Exceptionally the features may present a pleasant and smiling appearance, even with a ruptured tube, and I have in mind the case of a doctor's sister whose cheeks were actually of a rosy hue.

I have had a number of blood-examinations made in ectopic gestation cases, with results varying according to the amount of blood lost. In one case the leucocyte count was 16,600, and the polynuclears were rated at 85 per cent.; so that we can ordinarily look for an increase of both these blood elements. On the other hand, the red blood cells are usually diminished in number and the hemoglobin in amount. The greatest diminution in the number of red blood cells in any of my cases was recorded as 1,800,000 instead of the normal 5,000,000. The percentage of hemoglobin has varied in bad cases between 25 and 45 per cent.

In the average case inspection of the abdomen reveals nothing. Large intraperitoneal hemorrhages or the presence of peritoneal irritation or inflammation will result in an inflated abdomen. At times a distinct tumor will be seen situated in the median line or over Poupart's ligament. These are usually cases somewhat advanced in ectopic pregnancy.

In early cases or in nursing women or in multiparæ an inspection of the breasts gives us no valuable information. In primiparæ in whom the pregnancy has advanced beyond six or eight weeks, the alveolæ and nipples may present the usual appearances of pregnancy. Even colostrum may be obtainable on squeezing the nipples.

Palpation of the abdomen will in some cases discover a cystic or doughy, circumscribed tumor in the suprapubic or inguinal regions. Abdominal tenderness may be practically absent or present to an exaggerated degree. When present it may be localized over distinct areas or it may be generalized. With the associated rigidity one may correctly assume that a peritoneal irritation or inflammation is the underlying condition. In most cases gentle pressure elicits little pain which differentiates ectopic pregnancy from peritonitis due to other conditions. A frequent feature of this tenderness and rigidity when present is a tendency toward spontaneous abatement or disappearance within a short space of time or after a free evacuation of the bowels.

Percussion may yield only negative results or an exaggerated tympanitic note over the convexity of a distended abdomen. With blood accumulations in the lateral abdominal regions, a dull note may be elicited up to a certain point and an irregular contour may be mapped out by the percussing finger. Localized masses in the suprapubic or lumbar regions give a flat percussion note.

The vaginal examination usually gives us the greatest amount of information. Besides the bluish discoloration of the vulva and softness of the cervix—which are, by the way, unreliable signs in the early weeks of ectopic pregnancy—the discovery of a cervix pushed up against the symphysis by a non-sensitive liquid tumor, filling the posterior vaginal fornix, is a significant index of this variety of abnormal pregnancy. Very seldom do I resort to the use of the aspirating needle to establish the diagnosis. In fact, I believe that aspirating or opening the vaginal cul-de-sac adds to the risks of infection in case a laparotomy is to be performed. In many cases, however, a pelvic hematocele is absent or only a vague sense of fullness is felt. The uterus, as felt by bimanual examination, may be only slightly enlarged, or, in more advanced cases, be markedly enlarged. It is never as large as it should be in uterine pregnancy of the same period of gestation. Hégar's sign of softening at the anterior cervico-uterine junction is regularly present in the more advanced cases, but leaves room for considerable doubt in the earliest periods of ectopic pregnancy. Occasionally a co-existing fibroid-tumor formation may result in a disproportionate increase in the size of the uterus, as happened in one of my cases within the past year. The interior of the uterus may contain decidua and clots or it may be empty. The decidua, examined under the microscope, will show an absence of chorionic villi, excepting in those rare cases in which a uterine pregnancy has simultaneously existed. The uterine sound will in different cases enter to a depth varying between 2½ and 4 inches.

Vaginoabdominal or vaginorectoabdominal exploration may reveal a uterus which is in normal position or displaced anteriorly or perhaps laterally. Cystic or doughy masses may be felt filling one lateral half or the whole of the vaginal fornix. Seldom, if ever, to my recollection, have I felt a pelvic hematocele in front of the cervix,

although I have occasionally met blood accumulations in front of the uterine fundus. This is easily explained by the nature of the liquid collection and the presence of the bladder. Sometimes the coagulated portions of the blood gives an irregularly hard or nodular sensation to the examining fingers.

To assist in reaching a correct diagnosis of ectopic gestation in the early stages, we must remember that the disease may follow one of two diametrically opposite courses. The one variety presents the mildest type of symptoms and is most often confounded with an ordinary abortion or even a simple endometritis. The other variety pictures the most terrible collapse, with impending death, which the physician is ever called on to see, and has been properly called the "tragic" type. The second is only too often an advanced stage of the first and, in a great majority of cases, avertible if the proper diagnosis is made at the outset. Although a tubal mole or tubal abortion usually assumes the character of the mild type and a tubal rupture presents usually the signs of the severe type, I know of no fixed rule by which we can in any individual case determine the question with precision. Thus I have seen the most desperate cases of internal hemorrhage after a tubal abortion and only moderate degrees of hemorrhage from tubal rupture.

The onset in both varieties may be vague or indefinite and simply consist of a little irregular uterine bleeding with cramps, or it may attract attention by the occurrence of a sudden attack of syncope. In one case it occurred during the night while the patient was asleep. The woman awoke with a shriek, complained of a sharp pain in the abdomen, and fell back in a faint. Another woman suddenly toppled over in a faint while she was polishing the stove, crawled over to the door, summoned assistance, and then fainted away. A third woman went to the sink to vomit and her husband found her in a heap on the floor in an attack of syncope. A fourth woman fainted away after a fright. A fifth woman came to my office from Brooklyn and was seized with cramps in the elevated train. She dragged herself to my house, where I placed her on a couch and administered morphine hypodermically, to relieve her terrible suffering, until she could be properly transferred for operation. And so I could enumerate many more interesting experiences.

In the first clinical type, then, of early ectopic gestation, the patient may be up and about. A little irregular bleeding from the uterus, ascribed usually to an endometritis or following perhaps a skipped menses, a little cramp-like abdominal pain of varying character, an occasional sensation of faintness—perhaps repeated several times—may represent all of the subjective symptoms. An examination of the pelvis may discover a liquid collection in the posterior vaginal fornix or perhaps an indefinite immobile tumor of doughy consistency to the back or to either side of the uterus.

In the second clinical type the intense anemia of the face, lips, conjunctiva, and integument over the entire body occurring in a short space of time in a woman presenting a rapid and feeble pulse, and who seems to be passing through a series of syncopal attacks, will at once suggest the possibility of an internal hemorrhage. Because of the tender, rigid, and inflated abdomen the bimanual examination is, in my experience, usually unsatisfactory.

In both types of cases the history usually points to a skipped period, although this is not essential. Usually the woman has regarded herself as pregnant—perhaps after years of sterility—and the irregular uterine bleeding has been ascribed to an interruption of pregnancy. In several of my cases an actual attempt at criminal abortion had been made. In quite a few a curettage had been done by the family doctor. In exceptional cases the clinical manifestations follow no fixed type and defy the most careful and astute diagnostician.

Differential diagnosis must take into consideration ordinary uterine pregnancy with the usual symptoms of impending or incomplete abortion. This I find to be the most frequent source of error. A careful examination for the usual signs of pregnancy—especially a sufficient enlargement of the uterus, with the presence of Hégar's soft spot at the level of the internal os, and an absence of tumors or hematocele in the pelvis—will ordinarily be sufficient to establish a correct diagnosis. Of course the recognition of an ovum, embryo, or placental tissue in the discharges will leave no room for doubt. In case a question arises regarding such tissues, the microscope will settle the diagnosis.

In several instances I have known a diagnosis to have been made of cholelithiasis or appendicitis. In fact these conditions may be actually present simultaneously with ectopic pregnancy. Some years ago I diagnosticated cholelithiasis complicating an incomplete abortion in a case out of town, and the late Dr. Geo. B. Fowler diagnosticated the same case as one of ectopic gestation. On operation it was proved that we were both right, as the woman was suffering simultaneously from both conditions. The localization of pain over the appendix or gall-bladder with the classic symptoms characteristic of each will usually suffice for a proper identification.

A fibroid uterus can usually be differentiated by the history, and the stone-like hardness of the one or more tumors present. A few months ago Dr. M. Goldberger turned over to me for operation a case of abdominal pregnancy in which the diagnosis was very much obscured by the coexistence of a fibroid uterus.

Cases of pyosalpinx and hydrosalpinx are usually characterized by a different clinical history, although they give rise to frequent difficulty in differentiation from ectopic gestation. In one case of hydrosalpinx associated with an incomplete abortion the subjective and objective findings were so parallel to those met with in ectopic gestation that the correct diagnosis was only established after opening the abdomen.

Cystic ovarian tumors and intraligamentary cysts sometimes lead to errors, particularly when they are complicated by uterine pregnancy, or are wedged in the pelvis, or are twisted on their pedicles. The cystic feel, the globular contour, the lateral situation, and the mobility of ovarian cysts suffice ordinarily to distinguish them.

Pelvic abscess may at times strongly simulate an ectopic pregnancy. In case the presence of a febrile movement, exquisite tenderness over the mass, a markedly increased leucocytosis and polynuclear count fail to clear up the diagnosis the introduction of an aspirating needle will definitely settle the matter.

Some of the rarer conditions—such as a pregnancy in a one-horned uterus, or in one chamber

of a double uterus—may give rise to greater difficulties. The careful attempt to locate the round ligaments may assist in the differentiation; but this is usually a very difficult and, at times, an impossible thing even for the expert in pelvic examinations. We are consoled by the fact, however, that the same indication for prompt operative intervention is called for in both condihours.

The diagnosis of ectopic gestation—precise or presumptive—having been made, the treatment of ectopic gestation is surgical. It is true, however, that certain cases do get well without operation. Unless a case can be kept under the most rigid supervision it is neither wise nor safe to follow an expectant plan. We may at some future day be in a position to select those cases which go on to a spontaneous recovery from those who do not. With our present safe methods of invading the peritoneal cavity there is less danger in operating than in waiting. While many patients go on to recovery, others relapse and convert a previously simple case into one of colossal danger.

In former years I advocated vaginal section and drainage for pelvic hematocele. I now regularly open the abdomen in nearly all of my cases; a suppurating blood collection in Douglas' cul-de-sac would still induce me to resort to a vaginal incision. As for vaginal celiotomy I perform it occasionally in cases of ectopic gestation—usually when the diagnosis has not been clearly established previous to operation. My preference is in the direction of abdominal section in extrauterine pregnancy.

What can the general practitioner do in a case of ectopic gestation? The first essential procedure is to put the patient to bed and under proper surveillance. In mild cases this may be all that is necessary. Where internal bleeding is suspected, even though of moderate degree, an ice-bag over the hypogastrium, or over the painful area in the inguinal region is indicated. Morphine, given hypodermically, tends also to arrest hemorrhage or at all events it keeps the patient from tossing about too much. I do not give ergot, as its influence over muscular fiber may result in fresh rupture or hemorrhage. I have more confidence in adrenalin chloride solution (1-1000), when given hypodermically in doses of 10 minims each and repeated every three hours.

For shock hypodermic injections of strychnine and cardiac stimulants, rectal saline injections, hypodermoclysis, and intravenous transfusions are to be recommended. The head should be kept low in bad cases, the extremities bandaged, and oxygen given. Crile recommends as the best means at our disposal direct blood transfusion; but I have no experience with the method. Veratrum viride also has recently been highly lauded in the treatment of shock. If intense bleeding is profuse a vaginal packing will be of great service. Under no circumstances should a curettage be done, as this regularly does mischief in that it tends to increase intraperitoneal bleeding. I have reason to believe that at least one death, occurring shortly after curettage, of which I am cognizant and which was attributed to a possible puncture of the uterus, was due to this cause.

Shall we operate on a patient when in a condition of shock, or not? Surgical opinion is divided on this question. One recent writer has even gone so far as to claim that no woman has ever died from shock due to intraperitoneal hemorrhage consequent to the rupture of an ectopic pregnancy. Although most cases tend to rally there is sufficient evidence to prove that some of these patients do actually die from internal hemorrhage. As I know of no way to absolutely guarantee a cessation of bleeding I regularly advise operation if there is the slightest trace of a pulse. It is remarkable to observe how promptly a flickering pulse will gain in strength as soon as the intraabdominal tension is relieved after the peritoneal cavity has been opened. It is my usual custom in these very desperate cases to have one of my assistants start with an intravenous infusion just at the time when I am about to begin the operation.

Dr. Robert T. Morris, in recently describing the new principle in surgery, pithily remarked: "Get quickly into the abdomen and get out quickly." This corresponds with my practice for a great many years. In expert hands an operation for ectopic pregnancy on a patient in collapse should not consume more than fifteen minutes. Of course in the absence of shock or great debility one can work somewhat more leisurely. After removing the offending tube (perhaps, in addition, a fetus and placenta or even the uterus) as much as possible of the free blood and clots are rapidly mopped up and the abdomen closed without drainage. Leaving some blood in the peritoneal cavity, if the operation has been thoroughly aseptic, seldom results in harm. Our present knowledge of opsonins and phagocytosis teaches us to conserve the patient's vital forces by every means in our power, and this includes rapid work as a *conditio sine qua non*. I am not in favor of the practice of flushing the abdomen with hot saline solution or of leaving a quantity of such saline solution in the peritoneal cavity after the operation is completed.

In cases which do not call for an extreme degree of haste the abdominal wound may be closed in three layers. In desperate cases four or six worm-gut sutures passed through the entire thickness of the abdominal wound suffice. The patient is returned to a warm bed and the head kept low. If the patient is now carefully watched by a good nurse and a competent house officer, who will not kill the patient by the over-assiduous employment of hypodermatic injections of cardiac stimulants, it is surprising how many of the most desperate cases ultimately get well.

Of course the after-treatment will include bandaging of the extremities, hot-water bags to the limbs, perhaps another hypodermoclysis under the mammary glands or even a saline intravenous infusion, and rectal injections of hot saline solution repeated every three hours. I am fond of giving eserine salicylate gr. 1-60 hypodermically every three hours in alternation with the intelligent use of strychnine. After the patient has passed safely over the first twenty-four or forty-eight hours the bowels should be acted on in the usual manner. As soon as possible after the operation I reverse the patient's position, and have one end of the bed raised so that the patient rests upon an inclined plane. This gives a chance for retained blood to gravitate toward the pelvis where, if it is not absorbed, it may form a blood or pus collection, which can readily be reached later and be removed through a vaginal incision.

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TREATMENT OF HYPERPHONIA (STUTTERING AND STAMMERING) BY THE GENERAL PRACTITIONER.*

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NEW YORK.

STUTTERING and stammering are terms loosely applied to one disease, which may be defined by its fundamental symptom, namely, excessive innervation of the vocal muscles. The disease might, in fact, be properly termed "superenergetic phonation," or "hyperphonia."† This disease has no connection with another disease of speech (called "Stammeln" in German) which arises from insufficient and mistaken co-ordination of the speech muscles due to defects in the vocal organs, in the nervous control, and in the ear. This form of speech defect may properly be termed "subenergetic phonation" or "hypophonia." Of this latter disease I shall say nothing further on this occasion.

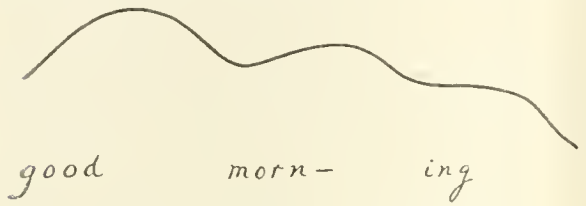

FIG. 1.—Fluctuating Melody in the Normal Voice

Symptoms.—The symptoms of superenergetic phonation may be classed as follows:

1. Cramps and hypertonicity of the breathing muscles. These may produce entire stoppage of the breath for a long time; the patient (and the hearer) must simply wait till the cramp passes off. I have had several cases in which the cramp has lasted 20 to 30 seconds.

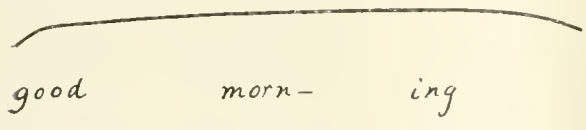

FIG. 2.—Monotony in the Stutterer's or Stammerer's (Hyperphonic) Voice.

These cramps may also produce short stoppages lasting a second or two and thus breaking up the speech. They may also produce irregular and improper breathing. The patient may take in a breath and be then seized with a cramp that expels it before he begins to speak. Such cramps also upset the person's habits of breathing, so that he finally ceases to breathe in a way proper for speaking. Along with the cramps and also without them there often arises a continuous superenergetic innervation of the breathing muscles. The patient breathes as a child learns to write; he tenses his muscles far too much and produces awkward and fatiguing movements.

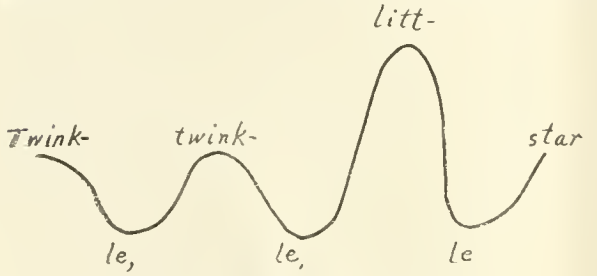

FIG. 3.—Excessive Melody Used in Teaching.

*Address before the New York County Medical Society, December 23, 1907.

†Scripture: "The Treatment of Stuttering." MEDICAL RECORD, May 11, 1907.

2. Cramps and hypertonicity of the laryngeal muscles. These sometimes go along with the breath-cramps and shut the larynx up tight so that no tone can be produced. More frequently we find hypertonicity of the laryngeal muscles, so that the flexibility of laryngeal action is lost. The vibrations of the vocal cords produce the tone of the voice, or the melody on which we sing or speak. In normal speech the melody is never constant; the voice is rising and falling at every instant (Fig. 1). About nine-tenths of the stutterers, however, speak in a monotone (Fig. 2); this is presumably due to the fact that it is easier to fix a group of tight muscles for one position than to keep them in easy action.

3. Cramps and hypertonicity of the muscles of pronunciation. The patients who forcibly contract these muscles for a moment or more are often called "convulsive stammerers." Those who have a series of cramps whereby they repeat a sound are usually termed "stutterers" or "re-duplicative stutterers." There is no essential difference and no sharp dividing line between the two classes.

4. Accessory cramps, contortions, and tics. These may arise from the spreading of the cramp over the side of the face, over the entire face, or over the entire body so that the patient jumps up and down.

Clinical Terminology.—The specific term for the disease would thus be "hyperphonia," and the three groups of symptoms would be called "respiratory, laryngeal, and articulatory cramps." The facial and bodily contortions might be termed "accessory spasms and tics."

Nature.—My experience has convinced me that the disease is a pure psychomotor neurosis; it is a habit over which the patient has no control. It might properly be called a "mental tic," or the result of a compulsive idea connected with speaking.

Causes.—Among the exciting causes we find irritations in the breathing organs (*e.g.* adenoids), imitation of other stutterers, injuries to the breathing organs, fright, etc. I have known a marked case to arise spontaneously in a neurotic child two and a half years old.

General Therapy.—The general therapeutic indications naturally include treatment of any nose or throat trouble that may be present, building up the general health, etc. Of these procedures I need say nothing further except to point out that they do not directly cure the stuttering (hyperphonia). It sometimes does occur that an operation for adenoids, for phimosis, or for anything else is followed by complete cure of the stuttering, but this, I believe, is purely a result of the patient's belief that the operation was intended for his disease.

Special Therapy.—Every case of hyperphonia requires special therapeutic procedures. My own experience has shown the following ones to be most effective:

1. Introducing melody into the voice. If the child is not very intelligent I first have him sing sentences on some familiar melody. He thus gets the idea that his voice must go up and down. Then he learns to speak sentences, sliding his voice likewise. But in most cases I begin at once to teach the person to speak melodiously, using little verses and sliding the voice somewhat excessively, for example, as roughly indicated in Fig. 3. Then the patient is taught to say, "Good morning," "How do you do?" "Please give me a glass of water," etc., all with excessive melody. Finally he is taught to speak and converse with melody.

This "melody cure" I have never read or heard of before; I stumbled on it quite by chance while try-

ing the various other cures. It is as effective as it is simple.

Fully half your patients will absolutely cease to stutter as soon as they learn to speak melodiously. You will be likely to have a repetition of one of my experiences. I demonstrated the cure to a man of fifty who had stuttered frightfully since boyhood and had tried all cures in vain; I intended merely to show him that it was possible to help him. To my surprise, in five minutes he ceased to stutter and went out of the office talking at ease. I tried to get him to come back afterwards, but he writes that he doesn't stutter any more and doesn't need any treatment.

Most people, however, require considerable practice before they can remember to speak melodiously, and the cure usually extends over periods ranging from four or five treatments to fifty.

The reason why this cure is so effective is that the stuttering habit is associated with one definite manner of speaking. It is not carried over to a manner of expression that the person *feels* to be utterly different. A stutterer never stutters when he sings, because singing is to him something quite different. A patient of mine never stuttered when he imitated an Irishman. The melody cure gives the stutterer a new manner of speech unconnected with his compulsive idea. It is like a surgical operation that removes an old voice and gives him a new one.

2. Developing expressiveness. Most hyperphonics are stiff and awkward in their manner of expressing themselves, in their postures, in their gestures, their thoughts, etc. For these defects it is well to exercise them in talking with gestures, in declaiming emotional pieces, in giving off-hand speeches on familiar topics, etc.

3. Distraction from the compulsive idea. Since hyperphonia is the result of a compulsive idea, it is necessary to get the mind off the idea during speech. The melody cure does this completely in many cases, but quite a number have difficulty in starting. To distract the mind at the moment of starting there are various effective procedures. I will only mention some that I have found specially effective. The patient is taught to beat time in a vigorous, snappy way; when he wants to speak, he brings the first syllable out with a snap on the first beat. In a more difficult case he learns to say "One—two" beforehand and bring the word out on the third beat.

Such a cure is often sufficient of itself. One little girl of twelve who came to me always repeated the initial sound of a sentence six times; she had no other difficulty. In two lessons she learned to beat time as she started to speak and had no more trouble.

Conclusion.—These procedures will permanently cure three-quarters of the stutterers and stammerers, if practice is given at first as often as possible and then at steadily increasing intervals. The treatment should last for fifteen minutes to half an hour. At first it should be given at least three times a week, then twice a week, then once a week, then once in two weeks, and so on. The patient should be warned that if he stops suddenly his trouble will probably return.

The care of the general health and the examination of the mind, nerves, and breathing organs are so important that only a physician can be considered competent to advise. For a case of stuttering the parent should send the child directly to the doctor. Unfortunately the doctor is very likely to prescribe a tonic and to say that the trouble will pass away in the course of time. Sometimes it does; generally, however, it steadily becomes worse, and the child's companions and parents by their taunts or nagging or scolding make his life a condition of torture to which Hades would be a relief.

It is quite true that many cases of stuttering are cured by teachers of singing and other persons; it is also quite true that sick people often fail to die when no doctor is around or when an osteopath or a "Christian Scientist" is called in. But "hyperphonia" is a disease. It is, we may even say, a serious disease. The patients do not die of it directly, but their lives are so filled with suffering that most of them wish they could. That some of them are cured by outsiders does not alter the fact that most of them are not. Under any circumstances a disease can be properly handled only under the direction of a physician.

Even this brief outline of the melody cure and the means of distracting attention will, I believe, enable many of you to treat cases without further practice. To those of you who wish further demonstrations I will say that a special clinic for speech defects is held as part of the neurological clinic at the Vanderbilt Clinic, and that nothing could give me greater pleasure than to show the methods to any who will honor us by attending.

87 Madison Avenue

FREUD'S METHOD OF PSYCHOTHERAPY.*

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NEW YORK,

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More than a key to the psychotherapeutic method of Freud is embraced in his trite truism in commenting on the different forms of psychotherapy. He says that "all are good that do good." At the present time Freud limits himself to the so-called analytic method for subjective reasons. He believes it is the only method capable of going beyond itself and leading to other fields of therapy. Freud's analytic method is often confounded with hypnotic suggestion. In reality analysis is directly opposed to suggestion. Suggestion technique takes no account of the origin and significance of symptoms, but only of the strength of the suggestion in its bearing on the pathogenic idea in the hope of arresting the latter. The technique of analysis on the other hand does not seek to introduce a new element, but to take away something, and to this end seeks to determine the genesis of the symptoms and the association of the pathogenic idea. Freud gave up suggestion as it gave little of permanent or lasting value. The cause remained and the whole disorder was but masked for a time.

Many regard Freud's analytic method as easy and self-evident, but no one who has carefully tested the latter has remained curious as to its intricate and difficult nature. One does not simply attempt to secure a confession. Such methods do harm rather than good. The individual soul is an instrument not so readily played upon. Freud cites the case of Hamlet and the courtiers as an evil example. One must agree with Freud that his method is inconveni-

*Read before the New York Neurological Society, January 7, 1908, as part of a symposium on "Modern Methods in Psychotherapy."

ent for the average physician. It should be employed only by the expert and then only on the most desperate and rebellious cases, refractory to other plans of treatment. A severe neurosis is held to be somewhat similar to a severe cachexia in this respect.

There are no hard and fast lines which we may lay down for the use of Freud's method. It is held that no one should be treated who has not a certain degree of education and character. No time should be spent on those applicants whose general worthlessness is blamed upon a disease state—"people who are not sick but foolish" in the language of Dana. The neurotic is not a degenerate, although the two may coexist. Freud's results show poorly in the neurotic degenerates. The method is of limited use here. Patients themselves must seek this treatment in good faith and not be urged thereto by relatives. It is not applicable to patients without keen insight into their disorders and therefore has limited use in the pure psychoses. While age is a factor, yet this can only be determined for the individual case. In a general way it is not applicable to those above fifty years of age. The patient then is no longer educible and the emotions are not plastic. Freud reports excellent results on many cases before puberty.

In those mental states in which, as for instance in hysteria, there is anorexia or some other of the gross and severe stigmata, the treatment must be withheld until the quiescent phase of the disorder is resumed. The field of usefulness of the method is not so limited as one is apt to think when bearing in mind that all chronic hysteria, impulsive states, aboulias, etc., are amenable to this special treatment.

While Freud assures us that there is no possibility of injury to the patient from his plan of psychotherapy, we can not agree with him. Even the best laid plan of excavating into the patient's subconscious being is sure in many instances to unearth revolting and perhaps many irrelevant memories that may take root in the conscious mind and require a special cure by Freud's specific treatment. Analytical psychotherapy of Freud is grounded on the unconscious psychical processes of the patient. With Janet the author refers hysteria back to unconscious fixed ideas. Unconscious is not used in the metaphysical sense. The treatment consists in translating the unconscious to the conscious and thereby in correcting deviations from normal psychical processes, and in removing from the patient the impulsions under which he labors. Conscious will presides over conscious cerebration, while on the other hand abnormal impulsion is founded on the unconscious.

The exposure and translation of the unconscious takes place amid a certain resistance on the patient's part; he has no desire for this innovation. The physician takes a hand in the resulting antagonism. If the automatic resistance of the patient can be overcome the patient has undergone a certain degree of education. It is at this point that Freud introduces his peculiar sex genesis of the minor neuroses. He believes that both education and culture have done much harm in this sphere to the neurotic. Sex is in the main the controllable etiological factor; the other factor, which is the constitutional make-up, is unalterable. The physician should be a man of morality, yet a "man of the world."

This sex idea of Freud's analytic method is grounded in his firm conviction that the sexual element is in the last analysis supreme as a factor in causing hysteria. Such questions as those of sexual desire and continence represent but one side of the matter. If this were all it would not be a question of disease, but of sexual excesses. The other side is represented by the sexual disinclination of neurotics, and the inability to love. Freud in tireless reiteration emphasizes the necessity of considering both the sexual alteration and sexual repulsion together.

One may illustrate the kind of cases treated by Freud's method as follows: A person has a painful experience or a series of experiences (as in Freud's notorious Dora case), usually sexual in character. The emotion thus aroused is accompanied by some bodily or verbal expression. The original emotion may then fade from view, but the expression of the emotion lives and recurs in consciousness. Recurrence of the expression may call up the emotion for a time, but eventually the expression may persist alone until the repressed emotion comes in evidence through some adequate natural cause. The expression-cause then ceases to recur.

The mischief caused by the repressed emotion is annulled if they are allowed to work themselves off in the conscious sphere by the exposure cure. One "lays ghosts by the same modern method."

A more definite analysis of the technique is as follows: Freud usually has the patient fully relax in a favorable environment, cuts off all sense stimuli. Then with hand on patient's brow he urges the patient to search the memory for any forgotten painful experience, usually involving sex. Under favorable circumstances such experiences are mentioned early in the examination, or if at first the patient resists, the "confession" when it does come, comes all the more sharply and clearly.

There can be no doubt that Freud's method is of great benefit in many cases, particularly in hysterias, but it is not widely applicable in general disorders of the minor neuroses until the sexual idea is eliminated, as Putnam's study proves. The method is very cumbersome, if ingenious, and ought to be modified in many cases to include the substitution or suggestion method of side tracking the morbid trend of thought. Subconscious memories are not handed down intact, as Putnam observes, but rather from a chain of association so that all present concepts are really new, however remote their origin. The past never really lives in the present.

Just as Freud's method is more susceptible of explanation on the theory of side-tracking a morbid trend of thought, so is it more readily applicable than hypnotism and an improvement in many respects over older methods.

The advantage of Freud's method over hypnotism, in eliminating the curiosity of the physician to the patient's disadvantage, is quite obvious. The linking together what the patient said and did in the past with the morbid state of the present is likewise advantageous.

Finally we may say that Freud has accomplished his results, but by cumbersome methods. It may also be noted that hardly any one, according to Freud's sexual theory, can escape the charge of being neurotic—either having too much or not enough sexuality.

I am sure you will pardon me for not citing the details of the cure Freud has rendered in any one of his cases, when I tell you that the hysterical Dora case occupies over 80 journal pages, and aside from its tedious length, is poorly suited for condensation.

23 West Fifty-eighth Strlet.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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REGENERATION OF BONE.

DESPITE the practical importance of the subject, considerable diversity of opinion exists as to the factors concerned and the processes operative in the regeneration of bone, particularly in connection with the repair of fractures. For the purpose of clearing up some of the existing obscurity and of reaching an independent opinion, Dr. Henry S. Wieder (University of Pennsylvania Medical Bulletin, September, October, and November, 1907) undertook an extensive series of experimental observations on dogs and rabbits. As a result of this study it was found that in the regeneration of bone all the various elements, namely, periosteum, cortex, endosteum, and marrow, assist in the process. These in their activities appear to bear a more or less reciprocal relation to one another, so that the absence of any one may be compensated for by the presence of the others.

The activities of the endosteum and the medulla, it was shown, can be brought into play by slight stimuli. The periosteum, even when proliferated, is incapable of forming osteoid trabeculæ unless in close contact and union with previous bone-formation or calcareous salts. Periosteal bone-formation is usually preceded by superficial absorption of the cortex through the action of osteoclasts. These possibly liberate lime-salts in the tissues for the osteoblasts again to precipitate in the surrounding hyaline matrix. Cortical bone-forming activity does not manifest itself until after considerable absorption of the cortex has occurred, so that it may be due either to the liberation of bone-cells that take on new activity and again precipitate the liberated calcium salts in new situations, or to the opportunity for the ingrowth of endosteum into the widened spaces.

In case of unimpaired regeneration bone defects are filled with trabeculæ and spaces that originally run at right angles to the line of the bone, but rearrangement occurs in the later stages, with a change in the direction of the canals in the new bone. This is the normal outcome of cortical activity. The medulla assists in forming osteoid trabeculæ by means of a skeleton framework along which the trabeculæ form, and also, possibly, by the activities of some of the marrow-cells. The deposit of calcium-salts in certain lines to form trabeculæ is not due to blood-vessels, as the spaces between the trabeculæ until some time after they have formed do not contain blood-vessels.

Cartilage is a pathological but constant feature in the repair of complete fractures. It is not found in connection with normal regeneration free from extrinsic influences. The formation of cartilage may have some relation, direct or indirect, to the masses of fibrin found in the region of the line of fracture, or it may represent a retardation in the development of osteoid tissue as a result of poor nutrition. In case of complete fracture the amount of cartilage present depends mostly on the angularity of the fragments, and it is always found in the shape of a wedge on the internal aspect of the angle. Complete fractures are slow in reaching final union, so that in the event of vicious union they may be safely rebroken up to nine months, and even longer, without danger of fracturing the bone in another situation. They may even be made to yield to traction in the proper direction.

Usually sufficient callus is formed on the inner side of an angularly deformed fracture almost to reestablish the original line of the bone from one joint to the other, but with commensurate shortening. In case of subperiosteal fracture the repair probably is mostly effected from the endosteum and medulla because of the extravasation of blood into the medullary canal, resulting in greater injury to the medulla than to the periosteum. The endosteum and the medulla are probably the most important factors in the repair of greenstick fractures.

Bone-regeneration after subperiosteal resection is usually cartilaginous when sufficient time has not elapsed before the operation for the formation of periosteal osteoid trabeculæ. A strip of healthy bone left between the two fragments of resected bone hastens osteoid regeneration. Healthy medulla sutured between apposed surfaces of periosteum hastens considerably the regeneration of bone. The process of repair in complete fractures may be divided into five stages, namely, infiltration, temporary callus-formation, reorganization, permanent callus-formation, absorption. Similar changes are probably found in the human subject also, with slight differences owing to the size and nature of the species. The deeper layer of the periosteum, the endosteum, the tissues lining the Haversian canals, and the bone-cells are probably all related or identical tissues, exhibiting different activities because they exist under different physical conditions. Cartilage is converted into osteoid tissue in several different ways in accordance with the age of the cartilage and the stage of the fracture. Osteoid tissue, when viewed in ground section, is not as dense in structure as normal cortex, and it has a deeper yellow tinge, probably by reason of some difference in chemical composition. Specimens of bone with their soft parts attached can be ground to microscopic thinness, but they possess no advantage over decalcified specimens except for the demonstrating of canaliculi. Investigations into the regeneration of bone, when not accompanied by microscopical study, are untrustworthy and often deceptive.

MEDICAL VS. SURGICAL TREATMENT OF GASTRIC ULCER.

THE difficulties attendant upon a solution of the best methods for the treatment of gastric ulcer are great. The uncertainty of its clinical course and

the different opinions as to what constitutes a cure render statistics concerning therapy most confusing. In a general way the methods of treatment are either medical or surgical, both having their advantages and disadvantages. In a paper in the *American Journal of the Medical Sciences* for December, 1907, Dr. John Musser presents a study based on 1,871 cases of gastric ulcer and demonstrates the relative values of the surgical and medical treatment, showing that each has a field, and also in which field the respective methods apply. He differentiates between simple ulcer and ulcer with complications, they having an entirely different clinical expression, although both are liable to hemorrhage and perforation.

Taking up first the question of simple uncomplicated ulcer, he found that the statistics uphold his contention that the immediate and remote results are far better after medical than after surgical treatment. The latter usually consisted of a gastroenterostomy which at times relieved the symptoms temporarily, but did not remove the cause of the patient's suffering any more than medical treatment. He found that the mortality of simple ulcer varied with different observers irrespective of the method of treatment, ranging from three to twelve and a half per cent., after medical treatment and from eleven and a half to twenty per cent. after surgical treatment. As regards the complications of gastric ulcer (stenosis, adhesions, hourglass contraction, dilatation, pyloric spasm), he found them in forty per cent. of all cases, appearing always later in life and usually in persons giving a previous gastric history of from five to ten years. When these become intolerable or perilous he considers the case one for surgical treatment, as the statistics show that the latter gives far better and more permanent results than medical treatment. In speaking of hemorrhage he estimates its occurrence in the course of gastric ulcer at from fifty to eighty per cent., the majority of the patients requiring no special treatment. Seven hundred and sixty out of 1,871 patients, had sufficient hemorrhage to imperil life, either because of frequent small bleedings or because of one or more large hemorrhages. The statistics support Musser's observation that acute large hemorrhages treated medically are attended by less mortality than those treated by surgical means; medical 23.1 per cent., surgical treatment, 42.8 per cent. A chronically bleeding ulcer leading to grave anemia on the other hand, he claims is cured more frequently by surgical than by medical means; mortality after medical treatment, 28.5 per cent., after surgical 22.4 per cent. Age and sex did not predispose to success or failure in either line of treatment. With respect to perforation, improved abdominal technique has led to remarkable success. Out of 586 cases with perforation 481 were operated upon with a mortality of 34.3 per cent., while death occurred in 54.5 per cent. in the unoperated cases. In the extremes of life the mortality was higher; the shorter the interval between operation and perforation the greater was the percentage of cures.

Of the various operations, gastroenterostomy was performed more frequently than any other, and while some operators reported a mortality of less than three per cent., the average mortality of all operators was 23.8 per cent., which is lower than after excision. Musser states that those patients who survived the operation for perforation were permanently cured more frequently than patients without perforation treated by any of the other methods. As the closing of a perforation practically amounts to excision it would seem that this is the ideal form of treatment, but we must not lose sight of the fact that this is difficult when the ulcer is on the posterior wall of the stomach or when there are several ulcers present. We are, therefore, still safe in stating that simple ulcer is a medical affection, while a complicated ulcer is a disease which as a rule calls for surgical treatment.

THE SIGNIFICANCE OF THE PRESENCE OF TUBERCLE BACILLI IN FECES.

Experimental studies regarding the excretion of bacteria have shown that the subcutaneous or intravenous injection of various forms of bacteria may be followed by the appearance of the organism in the feces without any evident lesion being present in the mucosa of the intestine. Thus, too, typhoid bacilli are found in the urine without any lesion of the genitourinary tract, and the milk of a cow is found to be infectious without disease of the udder. That the tubercle bacillus may be present in the feces without any intestinal lesion, being purely in process of excretion, and that its presence there may be of value in diagnosing tuberculosis elsewhere in the body, has been shown by R. Rosenberger in the *American Journal of the Medical Sciences* for December, 1907. He inoculated rabbits and guinea pigs subcutaneously with attenuated human tubercle bacilli and found the bacillus in the feces four days later; an autopsy seven weeks later revealed no intestinal lesions. Control animals showed no acid-fast bacilli in the feces. He also examined the feces of sixty patients diagnosed as tuberculous and of 612 persons in whom there were no clinical evidences of tuberculosis, but who suffered from various other diseases. In all of the former and in sixty of the latter the bacillus was found. Two-thirds of the cases in which the bacillus was found in the feces and in which no tuberculous lesion was diagnosed during life came to autopsy; while these patients succumbed to some other disease, they also showed tuberculous lesions. Thus, too, all the patients in whom a clinical diagnosis of tuberculosis was made and whose feces showed the tubercle bacillus revealed tuberculous lesions at autopsy. While it is the rule to find the bacillus in the feces in well-defined cases of pulmonary and intestinal tuberculosis, they may be present there irrespective of a pulmonary or intestinal lesion, as is proved by the fact that Rosenberger found them in general glandular involvement, in meningitis, in coxitis, and in Pott's disease. In acute miliary tuberculosis, diagnosed or not clinically, the bacillus was found in the feces in every instance.

Rosenberger holds the finding of the tubercle bacillus in the feces will determine the diagnosis in doubtful cases. In certain cases an ascites, the nature of which could not be determined in any other

way, he was able to diagnose positively as tuberculous, the diagnosis being substantiated later at operation. As a result of his work he believes the contention of some investigators that acid-fast bacilli are found in feces of healthy individuals is erroneous. He lays great stress on excluding the smegma bacillus. Admitting that the tubercle bacillus cannot always be demonstrated in the stools, even when there is undoubted intestinal tuberculosis, he feels positive that when an acid-fast bacillus, which morphologically represents the tubercle bacillus, is found in the feces of any individual, tuberculosis exists in some part of that person's body.

Cancer Statistics.

One of the greatest obstacles encountered by the student of the literature on carcinoma consists in the difficulty of correlating the figures given by different authors owing to the varying methods of formulating statistics. The desirability of uniformity in this regard has often been pointed out, and among those who have endeavored to secure the adoption of a definite system the well-known gynecologist Professor Winter of Königsberg has been especially active. At several of the recent German gynecological congresses he has urged the formulation of a standard method of computation and now in the *Zentralblatt für Gynäkologie*, February 8, 1908, he outlines such a scheme and requests those interested to correspond with him concerning it. The following are the principles which he believes should underlie the estimation of results. The mortality figures should comprise all deaths after the operation which would not have occurred without this, that is including sepsis, heart failure, embolism, pneumonia, etc. A case is to be considered as "operable" when it has been possible to complete a radical operation. The calculation of the ultimate results is to be made on a basis of a five-year period without recurrence. In computing the results of operation the number of radical operations is used, and from this there are deducted the deaths due to the operation, the number of patients who have disappeared, and the number of those who have died of intercurrent affections before the five years have elapsed. In determining the percentage of cures there must be taken into consideration the number of inoperable cases, the number of those dying of the operation, and of those having recurrences, while there are to be excluded those refusing operation, those disappearing from observation, and those dying of intercurrent diseases. It would also be desirable to have writers in discussing their results indicate the number of their patients falling into each of the above classes as then the figures could always be utilized in any way desired and comparisons be made with the results of other operators. While Winter's appeal is directed especially to the gynecologists, what he says applies with equal force to all fields of operative work on tumors, and the adoption of some such uniform basis of calculation could only be of benefit.

A Simple Serum Test for Syphilis.

The belief is now becoming general that Wassermann's serum test for syphilis, when positive, points to active syphilis, though a negative reaction does not exclude the latter. His method, however, is too complicated for general practice, so that a simple method as suggested by E. Klausner in the *Wiener klinische Wochenschrift* of February 13, is deserving of our consideration. He obtains five c.c. of blood by scarifying the patient's back and using a small suction pump. The blood is then centrifuged and two-tenths of one c.c. of the serum, together with seven-tenths of one c.c. of distilled water, are placed in a glass tube one-half a centimeter in diameter and seven centimeters high. After thorough mixing, the solution is allowed to remain at room temperature. In all of thirty-one syphilitic patients examined a precipitate from two to four millimeters in depth was formed in from two to fifteen hours. Most of these patients were in the second stage, though five were in the first stage and two showed syphilitic gumma. Sera from twenty-three non-syphilitic patients suffering from other diseases showed no precipitate at the end of fifteen hours and only a very slight one at the end of twenty-four hours. Two patients with croupous pneumonia and one with typhoid fever gave a positive reaction, *i.e.* a heavy precipitate in fifteen hours or less when the serum and distilled water were used in the proportion mentioned (1:3.5). When, however, five or ten times as much water as serum was used these same patients showed a negative reaction, while the syphilitic patients still gave a positive one with these dilutions. The number of patients examined is still too small to serve as a basis for positive conclusions as to the value of Klausner's test, but the method is so simple that it is worthy of trial.

White and Red Meats.

It was largely as the result of the work of Offer and Rosenquist, published in 1899, that the current view regarding the difference between the red and the white meats as affecting metabolism was modified, and it came to be generally accepted that from the analytical standpoint at least there was but little distinction to be made between them. This belief, although apparently founded on reliable scientific observation, has not been entirely in accord with the more or less empirical experiences of those accustomed to treat large numbers of patients suffering from such diseases as gout and nephritis. It has been pointed out, notably by Senator, that while Offer and Rosenquist's observations showed that as far as raw meat was concerned, the difference between the amounts of nitrogenous extractives and bases in the red and white varieties were so slight as to be practically negligible, it remained to be demonstrated that the process of cooking and the manner in which this was done did not alter the conditions. This question has been taken up by Adler (*Berliner klinische Wochenschrift*, February 24, 1908), who presents the records of analyses of numerous meats both in the raw and cooked condition. While his results on raw meats correspond closely with those of the previous investigators, he found on comparing veal and beef that both frying and boiling caused the extractives of the former to be reduced to about one-fifth of their raw amounts, while with the beef the difference was unimportant. Analyses of other meats gave similar results, and he concludes that in the cooked condition there is a sufficient difference between extractive content of red and white meats, particularly beef and veal, to justify a distinction between the two. Cooking therefore seems to cause white meats to lose more of their extractives than is the case with red, and taking for granted a deleterious property on the part of the nitrogenous ex-

tractives, the clinical observation that in certain maladies red meats are injurious finds analytical confirmation.

Gastric Secretion in Nephritis.

The behavior of the gastric secretion in nephritis has been the subject of considerable dispute. On the one hand it has been claimed that the hydrochloric acid is always diminished in this disease, while other observers have maintained that the disturbance of gastric activity present in the cases on which this view was founded has been due to chronic gastric congestion or was merely the secondary functional change to be noted in many other chronic or wasting disorders. A suggestion in regard to the explanation of this difference of opinion is made by Axisa (*Zentrallblatt für innere Medizin*, February 29, 1908). Together with Stejskal he had previously found that the extirpation of a kidney in the dog was always followed by an immediate and pronounced drop in the HCl secretion, and he now reports a series of forty cases of nephritis of various types in which careful gastric analyses were made. In most of these hydrochloric acid secretion was diminished even though there was no evidence of chronic gastritis or of circulatory disorders of the stomach. In five cases, moreover, repeated analyses were made and the results show a considerable fluctuation in gastric secretion. Whenever there were symptoms of renal insufficiency or of uremic nature the HCl values fell, only to rise again as the renal picture improved, and it is in this variation that the author sees the explanation of the discrepancies between the views of different observers. He believes that there is a parallelism between the gastric and renal functions, so that in the presence of uremic manifestations the gastric secretion decreases and then returns to the normal when the kidney condition improves. While, as Senator has claimed, the subacidity may not be characteristic of nephritis, it appears to be closely associated with uremia.

News of the Week.

A New Red Cross Organization.—The American National Red Cross is organizing a trained volunteer army for first aid to the injured under the name of the Grand Legion of the Red Cross. The first "relief columns" of this Grand Legion were formally organized January 22 in Brooklyn under the direction of Dr. Glentworth R. Butler and with the assistance of Major Charles Lynch, Medical Department, U. S. A., who has been especially detailed by the Surgeon-General. The members of the legion will be taught to give first aid under all conditions, and will be prepared to serve as a body in time of local need or in war, in the latter case under the medical department of the army. Their function will also be educational and preventive, since their work will be both indirectly and directly a crusade against preventable accidents, which make up probably two-thirds of the 10,000,000 accidents a year in the United States, by which more than 60,000 lives are lost. Each relief column will eventually have attached to it a relief corps of women trained in first aid and home nursing. The men will be uniformed. Further information may be had at the New York State Branch, No. 500 Fifth avenue.

Chicago Pasteur Institute.—This institute recently issued a report covering the number of cases of hydrophobia treated from the time of its inception, July 2, 1890, up to December 1, 1907. The number of patients that received the anti-hydrophobic treatment was 3,130. Of these, 2,779 persons had been bitten by dogs, 102 by cats, 109 by horses, 28 by skunks, 6 by wolves, 36 by cows, 12 by calves, 2 by burros, 4 by coyotes, 1 by a rat, 4 by mules, 6 by pigs, 2 by sheep and 38 were infected by hydrophobic human beings. Of the individuals treated, 1,685 were persons bitten by animals found to be rabid by microscopic examination of the brain or inoculation test or by the death of persons or animals bitten by the same animal; 1,109 had been bitten by animals found to be rabid by symptoms shown in life, and 336 had been bitten by animals strongly suspected to be rabid. Seven deaths are reported, a mortality of 0.22 per cent. Of the seven individuals who gave up the treatment, two were subsequently taken with rabies and died.

The Rockefeller Institute for Medical Research.—Dr. L. Emmet Holt, Secretary of the Rockefeller Institute, announces that the Institute purposes to award for the year 1908-1909 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, physiological and pathological chemistry, and experimental surgery. They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year. The value of these scholarships and fellowships ranges from eight hundred to twelve hundred dollars each. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of the secretary of the Rockefeller Institute not later than April 1, 1908. The announcement of the appointments is made about May 15. The term of service begins preferably on October 1, but, by special arrangement, may be begun at another time.

To Safeguard the Hudson.—Assemblyman Robinson's bill, providing for a State Commission, to be known as the Hudson River Purification Commission, has passed the Assembly. The measure authorizes Governor Hughes to appoint two citizens, who with State Health Commissioner Eugene A. Porter, will constitute the Commission, which shall proceed at once to make investigations to determine the causes of the pollution of the Hudson River and its tributaries, and to determine what, if anything, can be done to prevent such pollution. Members of the Commission will receive actual expenses, but no salary, and the Commission is to report to the next Legislature. An appropriation of $6,000 is made for expenses.

Digital Insalivation.—Under this appellation the Medical Society of City Hospital Alumni of St. Louis condemns the practice of moistening the finger in the mouth before handling leaves of paper or other dry substances, and which is very common among salesmen, postoffice employees, cashiers, and others who come in contact with the public. Resolutions condemning the practice and urging the endeavor to restrict it were adopted at a recent meeting and sent to the Postmaster-General, the St. Louis postmaster, and the Health Department. Passengers on the trolley cars of this city no doubt have often felt a qualm before accepting a transfer plentifully smeared with the conductor's oral secretions, and not long ago a bacteriologist was

able to demonstrate the presence of tubercle bacilli on a transfer received from a tuberculous conductor.

Administration of Illinois Institutions.—At a joint meeting of the Chicago Medical Society and of the Physicians' Club of Chicago, held March 13, the administration of State institutions was freely and thoroughly discussed by Mr. William T. Graves, Secretary of the Board of State Charities, Dr. Frank P. Norbury, William B. Moulton, Dr. Richard Dewey and Emil G. Hirsch. The meeting ended with a resolution offered by Dr. John M. Dodson, commending and endorsing the work of the State Board of Charities.

Cartwright Lectures.—The Cartwright Lectures of the College of Physicians and Surgeons will be given by Professor James Ewing, of Cornell Medical College, on March 25, 27, and 30, at 5 o'clock in the afternoon, at the New York Academy of Medicine. The subject of the lectures is "Acidosis and Associated Conditions," divided as follows: First lecture, March 25, "Experimental Basis of the Doctrine of Acid Intoxication, Diabetic Acidosis. Second lecture, March 27, Physiological Chemistry of Acetone Compounds. Third lecture, March 30, Clinical Forms of Acidosis.

A Biography of Lafcadio Hearn.—Dr. George M. Gould in his book on Hearn, shortly to be published by George W. Jacobs & Co., presents a remarkable study of the man and his work, dealing with both the good and the bad in his character and the strong and the weak points in his writing. As this biographical and critical study of the gifted but unfortunate writer is from the pen of one who knew him intimately, it should prove of peculiar interest, not only to Hearn's special admirers, but to the general public as well.

Congestion of Population Exhibit.—An exhibit to illustrate the congestion of population in this city is being held in the American Museum of Natural History, and several conferences to discuss municipal problems have taken place, at which Governor Hughes and other prominent persons have delivered addresses. The exhibition closes on Sunday, March 22.

Proprietary Remedies in Philadelphia.—At a meeting of physicians and pharmacists held in Philadelphia on March 11, among those who said that there was danger in going too far in the crusade against proprietary remedies were Dr. S. Solis Cohen and Dr. Hobart A. Hare. One of the speakers, Dr. Christopher Koch, said that an examination of 27,000 prescriptions had shown that of late the percentage of prescriptions for proprietary articles had fallen from 20 per cent. to 13 per cent.

Report of Chicago Visiting Nurse Association.—The eighteenth annual report of this association shows a steady growth in the scope of the organization's work. The total number of patients cared for in 1907 was 14,981, and 99,510 visits were made by the nurses. Employment for 248 persons was obtained and immediate relief was given to 171 poor families. The report recommends the immediate establishment of a children's hospital for contagious diseases in Chicago. The lack of such an institution is pronounced a blot upon the city. Housing reforms that shall make it criminal for a landlord to take rent for an insanitary living place are urged, and an appeal is made to the Chicago City Council to take notice of the present sad condition of poor people suffering from incurable tuberculosis.

St. Joseph's Hospital, Chicago, to be Enlarged.—Two stories are to be added to St. Joseph's Hospital Building, which already is five stories high. The sixth floor is to be devoted entirely to operating, consultation, waiting rooms, and a laboratory. The seventh floor will be arranged for sun-baths, outdoor sleeping, and exercise. A six-story annex building will be erected on the lot lying just north of the present building. It will be of fireproof construction, with all the latest scientific hospital equipment, and providing every facility for the care and comfort of the patients. Dr. John B. Murphy has been chosen as surgeon-in-chief in succession to the late Dr. Nicholas Senn.

Bequest to Philadelphia Hospital.—By the will of William B. Scott, of Bryn Mawr, Pa., the sum of $25,000 is bequeathed to St. Christopher's Hospital for Children, Philadelphia, for a permanent fund. In the event of the death without issue of two sons for whom a trust fund is created, the remainder of the estate is to be distributed as follows: Children's Seashore Home at Atlantic City, $25,000; Bryn Mawr Hospital, $25,000, and the residue for St. Christopher's Hospital.

Quarantine Against Cuba.—The Marine Hospital service at Washington has announced that after April 1 a quarantine will be enforced against Cuba. This order has occasioned much astonishment and dissatisfaction in the island, as it is alleged that the last yellow fever patient was discharged from the hospital on February 28 and the last infection, that of an American soldier at Santa Clara, was reported on February 21.

Smallpox on Ocean Liner.—The *Graf Waldersee* arrived last Saturday from Hamburg with a smallpox patient in the steerage. The 200 cabin passengers were detained on board for some hours while the vessel was being fumigated before being allowed to dock, and 197 of the 400 steerage passengers who had been exposed were removed to Hoffman Island for observation.

Oxalic Acid Poisoning.—A druggist of Astoria, Queens, has been held by the coroner as being responsible for the death of a woman who died of oxalic acid poisoning after having taken a quantity of what it is alleged was sold as Carlsbad salts. It was shown that in the store the bottles containing oxalic acid and Carlsbad salts were properly marked and were kept on shelves eight feet apart, but the verdict of the jury was criminal carelessness.

Epidemic of Food Poisoning.—Several hundred residents of Upper Sandusky, O., were made ill last week as the result of the consumption of the refreshments served at a church social.

Milk Station for Tompkins Park.—Plans for a model milk station for Tompkins Park have been approved by the Municipal Art Commission, and the Park Commissioner has advertised for bids for the erection of the building, which is to be used for the distribution of pasteurized milk supplied by Mr. Nathan Straus. The new building will be kept open the year around and is to have a room where sick babies may be cared for.

New Postal Regulation.—There has been incorporated in the Post Office Appropriation bill a provision prohibiting the transmission through the mails of intoxicating liquors, cocaine, and its derivatives.

Crippled by Roentgen-Ray Injuries.—Dr. Hall-Edwards, of Birmingham, one of England's first *x*-ray workers, has been obliged to have his left arm amputated on account of intractable dermatitis. His

right hand is also affected, though to a less extent, but he has expressed his intention of resuming his work as soon as he recovers from his present illness.

New Rule Concerning Schoolboy Athletics.—The Committee on Elementary Games of the Board of Education has adopted a rule requiring boys desiring to compete in any athletic contest under the auspices of the Public Schools Athletic League to produce certificates from their physicians to the effect that they are physically fit to take part in such sports.

Gallstone Statistics Desired.—Dr. Hans Kehr, of Halberstadt, Germany, has been commissioned to deliver a report on gallstone surgery before the International Surgical Congress, to be held in Brussels in September of this year, and desires to present the statistics of other surgeons as well as his own. He asks for figures under three headings—pure gallstone cases, complicated curable cases, and complicated incurable cases, including sex, mortality and other results. The views of operators in regard to early operations, technique, etc., are also desired.

Statistics of the Matas Operation for Aneurysm.—Dr. R. Matas, 2,255 St. Charles avenue, New Orleans, La., writes that he is compiling the statistics of operations for the radical cure of aneurysm by the intrasaccular method (endoaneurysmorrhaphy) and will be obliged to all who have had experience with this operation for a brief report of their cases.

Old Age Pension Bill.—A bill under consideration by the Assembly Ways and Means Committee at Albany provides for a pension of $144 a year for all persons over sixty years of age who are incapacitated and have no income. The conditions are that they have lived in the State twenty-five years, have not been convicted of a crime, have never deserted their wives, and have supported their children up to the age of 14.

Another Centenarian.—Mrs. Rheua Miller of Mount Vernon, N. Y., who died on March 9, at the age of one hundred and one years, had seventy-five direct descendants.

German Surgical Congress.—The Thirty-seventh annual Congress of the German Surgical Society will be held in Berlin April 21 to 24, under the presidency of Professor von Eiselsberg, of the University of Vienna.

Düsseldorf Post-graduate Medical School.—Professor Witzel, president of the new Post-graduate Medical School of Düsseldorf, Germany, announces that foreign physicians are permitted to study at this institution without payment other than the registration fee of about a dollar. In addition to opportunities for work all the year around, a special two weeks' course is given, beginning May 4, and another of four weeks, beginning September 28.

Professor Reginald H. Fitz, of the Harvard Medical School, has resigned, owing to his retirement from active work on account of advancing years.

Chicopee Medical and Surgical Society.—An organization with this title was formed in Springfield, Mass., on March 3, with the following officers: *President,* Dr. F. F. Parker; *Vice-President,* Dr. J. O. Beauchamp; *Secretary,* Dr. Warren; *Treasurer,* Dr. W. S. O'Brien.

Hamline University Medical School.—The Medical School of Hamline University has been merged with that of the University of Minnesota, and after the present college year the Hamline Medical Department will go out of existence.

Genitourinary Clinic.—There are several vacancies on the staff of the Genitourinary section at the House of Relief (Hudson Street Hospital), 67 Hudson street, which meets Tuesday and Friday nights, from 8 until 10 o'clock. Any one interested is invited to apply to Dr. Victor C. Pedersen, 45 West Ninth street.

American Society of Tropical Medicine.—The fifth annual meeting of this organization will be held at the Johns Hopkins Hospital, Baltimore, on Saturday, March 28, 1908. The president is Dr. James M. Anders, of Philadelphia, and the secretary Dr. John M. Swan, Philadelphia Polyclinic, Philadelphia.

The Jewish Hospital, Brooklyn.—Dr. Adolph Bonner, formerly of Manhattan, has been appointed adjunct gynecologist to this institution.

Southwestern Iowa Medical Association.—At the annual meeting of this organization held in Creston on February 21 the following were elected as officers for the ensuing year: *President,* Dr. D. C. Brockman, of Ottumwa; *Vice-President,* Dr. Culverson, of Greenfield; *Secretary,* Dr. J. W. Reynolds, of Creston; *Treasurer,* Dr. J. P. Claybaugh, of Creston.

The Late Dr. D. B. St. John Roosa.—At a meeting of the Board of Directors and of the Faculty of the New York Post-Graduate Medical School and Hospital, held on Friday, March 13, 1908,

It was unanimously resolved: That these Boards have learned with great sorrow of the sudden death, on the 8th inst., of their beloved President, Daniel Bennett St. John Roosa, M.A., M.D., LL.D., stricken in the midst of active usefulness, and thus removed from the field of work, which, principally, he originated, established, and for twenty-six years controlled with high-minded principle and energetic devotion.

These Boards, while recognizing the inscrutable wisdom of Almighty God, deplore the loss of a noble man, a faithful friend, a loyal leader, and stanch advocate of the highest and best which each man can give to his profession for the service and benefit of his kind.

These Boards wish further to convey to the grieved widow of our deceased President the expression of their earnest sympathy in her bereavement and their heartfelt appreciation of his eminent services to the Post-Graduate Medical School and Hospital, and of his love and loyalty to each and every member of these Boards.

The following minute was adopted at a regular meeting of the Alumni Association of the New York Post-Graduate Hospital, held Tuesday evening, March 10, 1908:

We meet to-night under the shadow of a great affliction, so sudden, so unexpected, that we have not yet realized how great it is. It will not be easy to fill the position Dr. Roosa's death has left vacant. It probably never will be filled. The work will continue. The Medical School his mind conceived has become an established fact, an integral part of the educational system of the State, while the Hospital he founded and over whose destinies he has presided for the past twenty-five years has become an important factor in the charitable work of New York. No one else occupying the position of President will ever be able to hold all those connected with the institution to their duties through sheer loyalty to the President. This Dr. Roosa has done most successfully, binding all together in a determination to carry on the work of our institution, no matter

what disappointments were met, no matter what obstacles were put in the way, simply because he wanted it—not for himself, but to attain the great object that he had in view.

Dr. Roosa was a strong man, a man of broad education and culture, and his great success as a teacher, as an administrator, as a practitioner of his specialty, came from the force of his intellect and the power he had of presenting facts clearly and cogently. This made him a natural orator and led him to take an interest in affairs outside of medicine. He was a national man, a cosmopolitan man.

He will ever be remembered as the founder of systematized post-graduate instruction for medical men. His was the original conception of the idea which has since been copied throughout the world.

We who have served on the House Staff of the New York Post-Graduate Hospital during the past twenty-five years feel his loss the more keenly because we were made to feel throughout the years of our associatioin with him that he was especially interested in our welfare, not only during our service in the hospital, but during after life. We have all felt his kindly sympathy, and we will all miss the cordial tone with which he used to meet us and inquire of our successes or sympathize with our failures.

Of him we cannot speak as we would. It is said of Sir Christopher Wren, the architect of St. Paul's Cathedral, London, that he did more to beautify the city than all the architects of a hundred years. He lies in a vault in St. Paul's, and above his sleeping dust is a simple slab bearing this inscription: "Here lies Sir Christopher Wren, architect. Would you see his monument? Then look about you." So Dr. Roosa has built his monument in the New York Post-Graduate Medical School and Hospital, and in every other institution the world over devoted exclusively to the systematic instruction of graduates in medicine. He has put his time, his energy, his brain, his heart, *himself* into the great work. The powers thus set in motion for the uplifting and education of the medical profession and the amelioration of the ills of suffering humanity are as far-reaching and immeasurable as eternity.

We thank God that Dr. Roosa lived. We thank God that we have had our medical training under the influence of his precept and example.

To Mrs. Roosa and his family we offer not the perfunctory sympathy of a Medical Society, but the sympathy of those who loved, admired, and reverenced him. His memory will live with us as long as any of us may survive.

For the Association: Franklin A. Dorman, Edward W. Peterson, Douglass W. Cairns, Samuel Lloyd, Chairman.

Obituary Notes.—Dr. A. Campbell White, formerly of this city, died in Providence, R. I., on March 1, at the age of thirty-nine years. Dr. White was born in Providence, was graduated from the College of Physicians and Surgeons of New York in 1891 and served in the Charity and Willard Parker Hospitals. For a number of years he was connected with the Health Department as diagnostician. Ill health compelled him to give up active work a year ago, but he had made plans for an early return to practice in this city.

Dr. Elmer W. Mitchell, of Fall River, Mass., died on March 7, at the age of thirty-five years. He was a native of Fall River and served in the Philippines during the Spanish War. He then entered the Jefferson Medical College and was graduated with the class of 1905, since which time he had practised in Fall River.

Dr. Addison R. Smith, formerly of Rockland, Me., died in Los Angeles on March 6, at the age of forty years. He was born in Williston, Md., and was graduated from Bowdoin and then from Dartmouth Medical School in 1901. He practised for a time in Rockland and then moved to Reno, Nevada, but ill health compelled him to give up work and go to Los Angeles.

Dr. W. S. Bryan, of Cambridge, Ill., died on March 5, of pneumonia, at the age of fifty years. He had long been a prominent physician of Henry County.

Dr. Hal C. Wyman, of Detroit, Mich., died on March 9, at the age of fifty-six years. He was born in Anderson, Ind., and was graduated from the Medical School of the University of Michigan in 1873.

Dr. Jas. W. Dalbey, of Cedar Rapids, Ia., died suddenly in Springfield, Ill., at the age of forty-five years. He was a graduate of the New York University Medical College in the class of 1888, and had practised for many years in Cedar Rapids.

Dr. W. W. Doxey of Nashville, Tenn., died on February 23 at the age of seventy-five years. Dr. Doxey was born in Hendersonville and had practised in Nashville for nearly forty years.

Dr. Maurice M. Dodge of Tacoma died on February 22 at the age of sixty-six years. He was a graduate of Northwestern University and served as surgeon of the Fortieth Wisconsin infantry during the Civil War.

Dr. Lewis Carpenter of San Francisco died on February 20 after a short illness. He was a native of Indiana and was graduated from Missouri Medical College in 1872. He practised for several years in Illinois and later in Texas, in 1887 removing to California.

Dr. Wm. H. Giberson was killed by a railroad train on February 29. He was forty years old and was graduated from Jefferson Medical College in the class of 1896.

Dr. David Maclay died of paralysis at Chambersburg, Pa., on March 3, at the age of fifty-six years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1875. He was a son of Dr. Chas. Maclay of Revolutionary stock. He was treasurer of Franklin County from 1897 to 1900, Representative in the Pennsylvania Legislature in 1802, and postmaster since 1905.

Dr. E. D. Woodhull of Monroe, N. Y., died in St. Augustine, Fla., on March 6 at the age of forty-five years. He was operated on for appendicitis in January and went South to recuperate.

Dr. Charles W. Eaton of Des Moines died on February 27 at the age of fifty-three years after a short illness. He was graduated from the Homeopathic College of New York and the Hahnemann Medical College of Chicago. He was a native of Lancaster, Wis., but for many years had practised in Des Moines, and at the time of his death was director of the medical department of the Des Moines Life Insurance Company.

Dr. T. Bailey Bartlett of Clarksburg, W. Va., died on February 25 at the age of seventy-two years. He was a native of West Virginia and had practised in Clarksburg and vicinity for many years.

Dr. A. F. Ferguson of Lansing, Mich., died on February 23 at the age of sixty years. He had occupied numerous professional and public positions and from 1889 to 1891 was a member of the Legislature.

Correspondence.

TO FURTHER THE SCIENTIFIC STUDY OF ALCOHOLISM.

To the Editor of the Medical Record:

Sir:—During the year 1907 over 200 papers, lectures, and pamphlets were published in Europe and America, presenting different phases of alcoholism and inebriety, purely from a scientific point of view. Many of the authors complain that these papers were not widely read and were practically lost, because they did not reach medical men interested in the subject. The Federation Bureau of this country, organized nearly two years ago for the purpose of collecting and disseminating all facts concerning the alcoholic problem, in connection with the International Bureau in Europe having the same purpose, proposes to secure a list of medical men and scientists interested in the scientific study of the alcoholic problem. This list is to be made available for authors and students who write on this subject, and who wish to address a special audience of physicians, not only to increase their interests, but to stimulate further studies of the subject. Such a list will enable the bureau to extend its work of accumulating facts from the most reliable sources, and keep both authors and readers in close touch with all that is done. This is a practical effort to group and concentrate the experience and observation of medical men, and make them acquainted with what is being done in the scientific study of the alcoholic phenomena. All physicians who are interested in the scientific literature, research work, and studies of this subject by medical men at home and abroad are urged to send their names and addresses for registration and also to receive copies and abstracts from authors and persons who may wish to have their work read and examined by interested parties. As chairman of the board of directors of the Federation Bureau, I urgently request every physician interested in this subject to send me not only his own name, but lists of reputable physicians who would care to receive some of this most important literature coming from the press, and hear what is said in the scientific world concerning this problem.

T. D. Crothers, M.D.

Hartford, Conn.

STUDY OF CLINICAL CASES BY COMMITTEES.

To the Editor of the Medical Record:

Sir:—At the meetings of the London Clinical Society they have a custom which it might be advantageous for medical bodies in this country to adopt, namely, to refer obscure cases to a committee, on which the exhibitor of the patient serves, for investigation and subsequent report. This committee might be made up of members of different sections, and would certainly add to the interest and instructiveness of clinical meetings, where obscure cases are often presented for diagnosis. A. L. Gnichtel, M.D.

New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HEALTHY TYPHOID CARRIERS—TUBERCULOSIS OF KIDNEY, LETTSOMIAN LECTURES—TUBERCULIN T. R. PER OS FOR PHTHISIS—HARVEY'S PRELECTIONES—DAMAGES FOR "NEGLIGENCE" BY A QUACK—BIER'S METHOD—OBITUARY.

London, February 28, 1908

A very important report has been issued by the Home Office in reference to the spread of typhoid. An outbreak at a certified inebriate reformatory was the subject of careful investigation. The first case was in September, 1906, and between then and November, 1907, there were 26 cases, 2 fatal. Dr. Branthwaite, inspector under the Inebriates Act, consulted Dr. Davies, Medical Officer of Health for Bristol, and other medical men, who met at the institution, and it was agreed that every necessary precaution had been taken. But cases continued to occur, with no definite indication of the cause, except that milk seemed more likely than other food. A protective cordon was therefore drawn around the milk from source to distribution. Still cases occurred. The question of a healthy carrier was next investigated and it was found that the dairywoman had had an attack of typhoid fever six years before coming to the institution. The epidemic began after her admission to kitchen work, where it was possible if in an infective state, she might contaminate in some degree the food and milk. Later, when she had only dairy work assigned to her, the epidemic was more virulent. Close inquiry disclosed that she was still in a "highly infective state." She had been removed from the dairy on suspicion when the epidemic ceased. Dr. Branthwaite, in the report, says that whatever else may be deduced from this investigation, it is fairly obvious that persons who have had typhoid should be subjected to careful investigation before holding appointments involving the handling or distribution of food. He further suggests that it is extremely important to discover whether a typhoid "carrier" can in any way be rendered non-infective or whether "chronic carriers" will remain so throughout their lives. In either contingency he thinks the "notification and registration of such persons seems to be indicated until freedom from infection can be guaranteed." Whatever may be thought of this proposal, this investigation will confirm the importance of practitioners bearing in mind the possibility of bacilli carriers being in apparently good health.

This year's Lettsomian lectures have been delivered by Mr. Charters Symonds of Guy's Hospital, who devoted them to tuberculosis of the kidneys. He availed himself of charts, lantern slides, drawings, and specimens, in illustration of several points. He called attention at the outset to the importance of early symptoms, especially to renal colic, and related a typical case of a young lady of twenty who had had three attacks with long intervals between, the case being thought to be due to calculus. Tubercle bacilli were found and the cystoscope showed tuberculosis of the bladder around the right ureter, with swelling of the orifice. The kidney was removed and showed old disease and fresh tubercle. Under tuberculin treatment recovery took place. In another case, a man of forty-six, two attacks of colic had occurred, no calculus was found, and the urine was therefore examined for bacilli. Numbers were present. The cystoscope showed prolapse and edema of the right ureteric orifice. The right kidney was removed and showed old cicatricial tissue and contraction, with recent miliary tubercle. Vesical irritation, from which the patient had suffered, disappeared after the operation. This symptom, said the lecturer, may be the only early indication of renal or tuberculous mischief, as also may urethral irritation, and he related cases in proof, one in which vesical irritation was the only trouble for twelve months. On cystoscopic examination the right ureteric orifice was found swollen, with white elevations. The kidney was removed with the ureter. Rapid recovery followed. The kidney showed extensive tuberculous disease. Other cases were equally successful and well enforced the lecturer's insistence on the necessity of examining the urine in cases of renal colic, especially in young patients; the importance of renal and vesical irritation as early indications of kidney diseases, especially tuberculosis, and, further, that this should be suspected when the amount of albumin in the urine is greater than can be explained by the pus.

In his second lecture Mr. Symonds returned to this point and said the albumin is generally more abundant than can be accounted for by pus, and, moreover, may be present without other symptoms, not only when the ureter is shut off, but also when it is patent. Special attention was called to the fact that, as miliary tuberculosis is painless, extensive destruction may occur without symptoms, so that an examination for bacilli should be made in all cases of unexplained albuminuria. Hematuria was named as an early symptom and a case quoted as probable, but renal infection could not be demonstrated and the patient recovered under tuberculin treatment. The lecturer said that routine examination of the urine in anemia and ill health would often reveal tuberculosis of the kidney, and there was no reason why they should not recover. Indeed, he was inclined to think that many cases of albuminuria that did recover were of tuberculous origin. He thought the ureteric orifice did not show characteristic changes until the ureter itself was infected. Infection of the bladder was generally late. It is curious how tolerant this organ is to tuberculous pus; in some of the cases it must have entered the bladder for two years or more. Immediate nephrectomy when one kidney was found to be infected did not seem necessary, as proved by some of the cases, and the lecturer thought postponement justifiable when the bacilli were few, irritation slight, and bladder and ureteric orifice normal, but when this orifice has become affected nephrectomy should be performed. Whether slight infection of the other kidney contraindicated operation was a question turning upon the distress occasioned by the obviously affected organ, and the curability of renal tuberculosis. When the distress was great and affecting the health, Mr. Symonds thought operation should be done as tending to improve the general health and promote the recovery of the less diseased kid-

ney. Whether the ureter should be removed at the same time depended a good deal on the state of the patient. Mr. Symonds was in favor of removal if the patient seemed able to bear the additional strain, but as recovery may take place when the ureter is left, he would not advise undue risk. The advantage of a preliminary nephrotomy was shown by a case in which this quite relieved the general infection and the complete operation was done later. Preliminary incision gives an indication of the amount of renal tissue left. The urine can then be collected from the bladder and the secreting capacity of the other kidney ascertained. On the whole, nephrectomy is not negatived by vesical tubercle nor by slight miliary tubercle of the opposite kidney.

A case was shown in the Clinical Section of the Royal Society of Medicine which is not without interest in reference to Mr. Symonds' remarks on tuberculin treatment. It was a case of consumption shown by Dr. Arthur Latham, who had treated it by tuberculin T. R. and horse serum administered by the mouth on six or seven occasions during a couple of months. For the last month he said the temperature had been normal or subnormal, the sputum had diminished from 6 ounces to 1 ounce per diem, and the patient had gained seven pounds in weight. He had fourteen other cases undergoing this treatment. A member remarked that the treatment suggested a consideration of what would be the effect of feeding on the meat of tuberculous animals.

Osteoarthritis seems sometimes to start with injury to a joint and it would appear that such injury need not be recent, for at the Clinical Section Mr. Godlee showed two men, illustrating a very late onset if the injury was a determining factor. One had a fracture of the lower end of the right humerus twenty-one years ago and now has arthritis of that elbow, but of no other joint. The other had had dislocation of the patella long before osteoarthritis of that knee. Another instance was mentioned by Mr. Openshaw, who agreed as to the connection between the injury and the later disease. Dr. Poynton remarked that organisms introduced by intravenous injections may settle down in a single joint and previous injury to such joint may diminish its resistance. Dr. Garrod remarked that the first attack of gout often takes place in a joint that has been injured long before.

An interesting literary event is the publication by the Royal College of Physicians of Harvey's "Prelectiones Anatomicæ Universalis" from the MS. of the original lectures delivered before the college in and after 1616, including his earliest observations on the heart and circulation. The volume is edited, with an autotype reproduction of the original, by a committee of the college, who state in a preface that the MS. is to be regarded with veneration as one of the most precious of the archives of English science, and as showing how Harvey had begun to penetrate the difficulty of explaining the motion of the blood, and how long his active mind was willing to enlarge and confirm its first thoughts before he gave final expression to them and published his splendid discovery of the circulation, matured and completed by twelve years of observation and meditation.

The Pharmaceutical Society—rather late in the day—has summoned the vendor of the "asthma specific" for selling it without a poison label, and a fine of £5 and costs has been inflicted. If the society did its duty in this respect some check might be put on quackery. But the pharmacists are the chief vendors of "proprietary medicines." Curiously, in this case, it seems that the sales were more largely made direct to the public than through the druggists.

A man trading as "Dr. Hall's Hygienic Company" has been sued by a woman for negligence in continuing to dose her for months for cancer of the breast, preventing her from applying to a surgeon until her case was hopeless. The jury awarded her £600.

Dr. W. Ewart takes exception in the *Lancet* to Dr. Allen's suggestion in your columns (MEDICAL RECORD, January 4), to adopt the formidable Teutonism, "Staungs-hyperämie" for Bier's method. Dr. Ewart thinks our own language supplies a better term, viz., that "used some thirty years ago by Hugh Owen Thomas, the pioneer of the method in this country." The phrase is "dammed circulation," quite comparable with that of "interrupted circulation," which has obtained a place for an opposite vessel-compressing method.

Dr. Conolly Norman, medical superintendent of the Richmond Lunatic Asylum, died suddenly on Sunday in his fifty-fifth year. He had been connected with the asylum above twenty years. He had a weak heart, and had lately suffered from bronchitis following influenza. When taking a short walk he fell near his home, was carried in immediately, but rapidly succumbed. The asylum was practically reorganized during Dr. Norman's tenure and he was recognized as among the very foremost experts and administrators of the time. He was joint editor of the *Journal of Mental Science* and wrote in Luke's *Psychological Journal* and Allbutt's *System*, besides contributing to periodicals. Last year the University of Dublin conferred its honorary degree upon him in recognition of his work.

The death of Dr. H. R. Silvester in his eightieth year is announced. He was the proposer of the Silvester method of resuscitating the apparently drowned. He was a London graduate, M.B., 1853; M.D., 1855. He received the Fothergill gold medal of the value of 50 guineas from the Royal Humane Society in 1883 on their adoption of his method.

Dr. J. H. Pigeon of Bristol died on the 19th inst. at the R. Infirmary, to which he was taken the previous day in a delirious state from pneumonia supervening on influenza. He was actively engaged in practice up to two or three days before his seizure.

Dr. Richard Gorst, for many years a leading practitioner in Lancashire, has died in the eighty-fifth year of his age. He qualified in 1848 and only retired two or three years ago.

Dr. R. S. W. Wilson of New Church was found dead in his bed on the 18th inst. He was in his usual health when he retired on the evening before and had attended to his practice up to then. He was fifty-four years old and qualified in 1879 with the Edinburgh double diploma.

OUR LETTER FROM COPENHAGEN.

(From Our Own Correspondent.)

DETECTION OF TUBERCLE BACILLI—VICTORY OF MEDICAL MEN OVER THE COPENHAGEN MUNICIPALITY—GASTROSCOPY AND GASTRODIAPHANOSCOPY.

COPENHAGEN, February 22, 1908

At a recent meeting of the Medical Society of Copenhagen Drs. Ellermann and Erlander reported on their researches on a new method for the detection of tubercle bacilla in substances in which they are present only in a small number, and perhaps very irregularly distributed. A critical comparative examination of the methods hitherto in use for a similar purpose has taught the investigators that their procedure surpasses all former ones, giving, as it does, an increase of the relative number of bacilli up to twenty times the original number. When examining sputum one has (1) to mix carefully 20 c.c. of the sputum with 10 c.c. of a 0.6 per cent. solution of carbonate of sodium and place the mixture in the thermostat for twenty-four hours at 37° C.: (2) centrifugation; (3) to the precipitate add four parts of a 0.25 per cent. solution of NaOH, mix carefully and boil half a minute; (4) centrifugation. The first stages of the proceeding are a little different, when urine has to be examined. The clear liquid is first poured off the sediment, which is subsequently centrifugated. To the centrifugated precipitate add four parts of a 0.25 per cent. solution of carbonate of sodium, and .25 to 50 centigrams of pancreatin. Place the mixture for twenty-four hours in the incubator at 37° C. and continue by proceeding as above, sub. (2) and (4).

I am happy to be able to record a great victory won by the profession in Denmark in a struggle with our largest municipality, Copenhagen. As I wrote you last summer, the profession there united into one compact body, the General Danish Medical Association, which numbers all the 1,600 to 1,700 medical men in Denmark amongst its members. One of the subdivisions of the association is the Association of Junior Medical Men, consisting of the post-graduates not yet in actual practice. Their number is a comparatively large one, as most of them only begin to practise six or seven years after the final examination, the intervening time being spent in studies at different hospitals. The Danish hospitals are not charitable institutions in the same sense as most of the American and English hospitals. Our hospitals are not supported by private subscriptions, but the expenses of running them are defrayed by the municipalities out of the rates, or by the crown out of the taxes. Another difference is that the vast majority of the patients pay for their stay and treatment in the hospitals, though, of course, only a fraction of the real cost. Thus the municipality of Copenhagen, with a population of 440,000, maintains ten hospitals, with a total of 2,900 beds, plus a lunatic asylum of 1,400 beds; the ten hospitals alone have a yearly budget amounting to $900,000, each patient costing the municipality about $1 a day, while he only pays 15 cents daily. As is seen, the hospitals are here run in a more businesslike way, and that is one of the reasons why we do not have an institution like the honorary hospital staff of the Eng-

lish-speaking countries. Here all members of the staff, young and old, are salaried, as are also, of course, the resident house surgeons and physicians. As, however, the salary has hitherto been sadly inadequate, the Association of Junior Medical Men began to work for a raising of the salary, and the Town Council of Copenhagen had nearly granted the very modest wishes of the association, when in the decisive meeting of the Council a colleague was found willing to speak against them, with the result that the requested augmentation of the salaries was only partly granted. The Association of Junior Medical Men then at once invited its own members, and with the support of the General Medical Association, all Danish doctors, to abstain from applying for appointments in the municipal hospitals of Copenhagen. The pressure thus brought to bear on the Town Council was very strong, as many appointments would soon become vacant. After a very short time the Councilmen therefore thought fit to make a virtue of necessity, and granted, though with a bad grace, the request which they had four weeks before denied so sternly. This victory is not only important, because it enables the junior medical men to subsist during their postgraduate studies without running into debt, but its chief importance is to be found in the fact that our richest municipality has had to give way before the united profession, and that no outsiders were found amongst the colleagues.

At the last meeting of the Copenhagen Medical Society Professor Thorkild Rovsing demonstrated a new and original method of gastroscopy and gastrodiaphanoscopy. Even when during a laparotomy the operator has the stomach in his hands, it is often impossible for him to tell whether or not there is a new growth or an ulcer in its wall. In these dubious cases Rovsing introduces through a little slit in the anterior wall of the stomach an optical instrument, built on the same principle as the cystoscope, but larger, and closes the stomach wall air-tight round the shaft of the instrument by means of a circular suture. Air is then blown into the stomach through a tube in the shaft of the instrument, so that the stomach expands, and, when light is turned on, presents itself as a luminous globe, on which the vessels, nay, even the different layers of the musculature, may be observed. A new growth appears as a dark spot on the luminous globe, while an ulcer very often causes the appearance of a ring with a darker periphery (the thickened walls of the ulcer). This gastrodiaphanoscopy may be followed by gastroscopy through the optical apparatus of the instrument. The picture thus obtained of the interior of the stomach is exceedingly clear and instructive. The method, as simple as it is efficient, is sure to prove of great helpfulness to all surgeons operating on dubious stomach cases.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

CHOLERA IN MANILA—RESTRICTION IN THE SALE OF COCAINE.

MANILA, P. I., January 29, 1908.

DURING the closing days of the old year, and during the first week of the new year, the cholera outlook of the city of Manila assumed a rather serious aspect. The cholera increased from day to day, until on January 6, 17 cases per day were reached. The increase during the latter part of December can probably be ascribed to the fact that there was a large influx of visitors into the city of Manila to spend Christmas. Many of these people came from infected places, and were in the incubation period of the disease when they arrived here; and it seems quite probable that some of the stools from more virulent cases fell into the hands of the Chinese market gardeners, who used them for fertilizing purposes. The thus infected products were sold in the markets, and in a number of cases the disease can almost with certainty be ascribed to this cause. It is probably not known in the United States that the Chinese gardeners make a solution of human feces with water, and use the same for sprinkling purposes, in order to drive away the vermin which has such a destructive effect upon garden products in the tropics. From the foregoing, it will be seen that a head of cabbage, for instance, would become infected from its very center to its outside as it gradually forms, and on that account be rendered exceptionally dangerous.

January 3 the disease made its appearance in the Mariquina valley, which is the watershed for the city of Manila. During the first week of the outbreak, of the 45 cases reported, there were 43 deaths. The Governor-General, upon the request of the Bureau of Health, made application to General Wood, the Commanding General of the forces in the Philippines, for the detail of sufficient troops properly to patrol the Mariquina river and guard it against infection from cholera. Fortunately, the disease first made its appearance in the town of Mariquina proper, where a pail system is maintained, and where there is less likelihood of fecal discharges finding their way into the water. Energetic measures were made to stamp out the scourge in that locality, and these efforts were rewarded with considerable success. During the week that followed, only a few additional cases occurred, and during the past ten days there have been no further cases in the valley.

An investigation is now being made of the sewers of the city of Manila, and a number of them have been found to be cholera infected. It is quite probable that the flies, roaches, and other vermin that infest these places carry the cholera organisms upon their feet and also by means of their fecal discharges infect easily contaminated food stuffs.

The sale of all vegetables which are likely to be eaten raw has been prohibited. Apparently the disease is coming under control rapidly in the city of Manila. During the past week from one to three cases only per day have been reported. Cases have occurred in Manila as follows:

	Cases.	Deaths.
January 1 to 8	42	32
January 8 to 15	72	50
January 15 to 22	41	27
January 22 to 29	23	13
Totals	178	122

Cholera in the Philippine Islands, and more particularly in Manila, presents much the same problem as does typhoid fever in the United States, with this difference, viz., the disease is much more likely to assume epidemic form with a mortality of 60 to 80 per cent. as against 5 to 20 per cent. for typhoid fever. The same measures, however, which are necessary to eradicate typhoid fever will have to be put into effect here before the complete disappearance of this disease can be hoped for.

The installation of the new sewer system and the city water supply from an uninhabited watershed are improvements which are now three-fourths completed, and should do much to assist in solving this problem.

Under Act No. 1761, passed by the Commission October 10, 1907, the use of cocaine has been placed under severe restrictions. The law provides in brief that any person who shall inhale, snuff, chew, swallow, inject, or otherwise use or permit to be used in or on his body any cocaine, alpha or beta eucaine, or any derivative or preparation of such drugs or substances, except upon the prescription of a duly licensed and practicing physician, shall be subjected to a fine of not to exceed $10,000, or by imprisonment not to exceed five years, or both, in the discretion of the court. The possession of any hypodermic syringe, apparatus, instrument or paraphernalia for using cocaine, alpha or beta eucaine, or any preparation thereof, is deemed to be prima facie evidence that the person in possession of such implements used some of such prohibited drugs without the prescription of a duly licensed and practicing physician unless the prescription can actually be produced by such person.

After March 1, any cocaine, alpha, or beta eucaine, which is in the possession or under the control of an unauthorized person, shall be seized and forfeited to the Insular Government. The purpose of this law was to prevent the opium habitués from becoming cocaine users, many of whom had already taken to cocaine on account of the restrictions placed upon the sale of opium.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 5, 1908.

The Surgical Treatment of Various Conditions as Influenced by Pregnancy.—M. Storer protests against the currently accepted theory that pregnancy contraindicates all surgical intervention. He has made a careful study of the literature bearing on the point, and finds abundant evidence that nearly all operations have no influence on the course of pregnancy, except to favor its continuance, provided that they are not followed by a septic process which by reason of continued high temperature may cause the death of the fetus and abortion. Much of the information given is in tabular form and cannot be abstracted. Before con-

sidering any operation, we must ask ourselves what effect the condition if left alone will have upon the health of the woman or upon pregnancy and labor, and defer interference in cases where it can be done. In operations of election, it is undoubtedly best to operate at the time of least uterine excitability, *i.e.* to avoid the times when the woman would be menstruating if not pregnant, and also, if there is a history of intermenstrual dysmenorrhea, the few days midway between the time of the periods should be avoided. It does not seem proven that there is greater reflex excitability at any one month than at others. We must consider whether in the given case the life of the child is too important to run even the slightest risk of abortion, *e.g.* whether the woman has other children or is likely to be pregnant again. On the other hand, a wise radicalism may be the truest conservatism. A myomectomy on a woman who has aborted a number of times may enable her to go to term. The author enumerates the special dangers which exist in each period of pregnancy and discusses preferable modes of operating in various clinical emergencies.

New York Medical Journal, March 7, 1908.

A Study of the Prostate with Reference to the Curability of Gonorrhea.—A. L. Wolbarst presents the following conclusions: (1) The so called "incurable" and "recurrent" cases of gonorrhea are those in which the gonococci remain latent in the prostate and annexa. (2) Every case of chronic gonorrhea in the male should be thoroughly examined for gonococci in the prostate and adnexa. (3) The morning urine passed by the patient may or may not contain gonococci; the massaged urine passed immediately after, or, better still, if it can be obtained, the expressed secretion of the prostate, will most always give a positive finding. (4) The urine passed by the patient may be clear and sparkling; yet the massaged urine may be full of pus, and epithelia, which are loaded with gonococci. (5) There is no direct relationship between the urine clearing up and the disappearance of gonococci from the prostate. (6) Five examinations of the massaged urine may give a negative result. The sixth may give a reverse verdict. Here persistence is a cardinal virtue. (7) Before a patient can be declared "cured" and marriage sanctioned, he should be put on the customary tests, and in addition, the massaged prostatic secretion should be examined at weekly intervals until at least six consecutive negative findings result. Thereafter for at least a year, a monthly examination of the same kind should be made, so as to make assurance doubly sure.

Gallstone Disease and Its Surgical Aspect.—T. Hawkes says that gallstones should be removed at an early date from gallbladder or ducts; such infection is treated by drainage of the ducts. At this time the operation is comparatively safe, convalescence is prompt, and cure lasting. Serious complications are liable to arise at any time in patients with chronic gallstone disease. Long journeys, in which efficient surgical aid cannot be secured promptly, are distinctly hazardous. Operations at this time are much more serious, they are often necessarily incomplete, and the outlook for permanent cure is less bright. Cancer is liable to develop at any time at or near the seat of irritation. Operation then is very hazardous and the outlook bad. Medical practitioners should familiarize themselves with the results obtained by the surgeons to-day in the early uncomplicated cases.

Colorimetric Analysis of the Saliva with the Clinical Significance.—B. R. Le Roy enumerates the various tests used in analyzing saliva and reports Fennick as saying that the sulphocyanides bear a relationship to the amount of sulphur in the bile, and that when the latter is diverted from the gastroenteric canal, the former disappear from the saliva. The sulphocyanides and ammonia in normal saliva are about in equal proportions and in very small amounts. When the sulphocyanides disappear from the saliva we have a condition that needs our careful attention, and if ammonia is increased in quantity we have a grave condition, indeed, to combat; this is an hypoacid condition and accompanies all the graver forms of disease; for instance, this is the state of affairs in all diseases of the nervous system, *i.e.* absence of the sulphocyanides with ammonia present in large quantities, the larger the amounts of the latter the more grave the condition. This is true of epilepsy, paralysis, dementia præcox, and all forms of nervous diseases resulting from lues. And when the author has been able to detect the sulphocyanides in these cases he has always felt sure of a period of improved state of health, and upon the disappearance of the sulphocyanides from the saliva he was just as certain that the old attacks would return. We also have this state of affairs in all forms of fevers, exemplified in its extreme in the typhoid state. Here, too, we will notice the appearance of the sulphocyanides in the saliva in advance of returning health; indeed, this holds good in all cases of recovery from any and all forms of disease. Upon the other hand, when we have an excess of the sulphocyanides in the saliva, giving a deep dark blood red reaction, and it continues so for a space of time, he looks for a lesion in the brain, heart, or in the kidney, and pays special attention to these organs. When we have a hypoacid condition the patient cannot tolerate acids nor iron—that is, these remedies will not agree with the patient; but change the ammonia base to potassium and the patient will ask for acid drinks! Sodium base will cause the same changes to take place in the milder forms of disease.

The Operative Tendencies in Modern Obstetrics.—A. Stein traces the gradual introduction of operative procedures into obstetric practice. He regards vaginal cesarean section as representing a distinct advance and gives a full description of Dührssen's method. Latest statistics show a mortality from it of only 1 per cent., excluding all deaths due to other causes than the operation itself, while abdominal cesarean section has a mortality of from 6 to 8 per cent. Stein then passes on to consider those operations which bring about an enlargement of the birth canal by cutting through some portion of the bony pelvis. Pubiotomy, while not without faults, offers many advantages over symphyseotomy, and is indicated in all cases in which perforation of the living child was hitherto resorted to, especially in cases of flat or generally contracted pelves, in which there is a disproportion between the size of the fetal head and the size of the pelvis. The average mortality after symphyseotomy has been reduced to 8 per cent. Following the newer operation, it is only 4.2 per cent., and if we exclude those cases which were infected before operation only 2.9 per cent. Other operations which are now regarded as perfectly feasible are the removal of large tumors during pregnancy and labor, the resection of pelvic veins, and hysterectomy for septic conditions during the puerperium. The author regards pubiotomy as a risky undertaking for the general practitioner and believes the operation should be done only by the man familiar with pelvimetry, obstetrical diagnosis, and the technical features of the operation, and, above all, a man equal to the task of meeting any of the complications liable to come up during and after the operation.

Journal of the American Medical Association, March 7, 1908.

Acute Articular Rheumatism.—P. K. Brown sums up his conclusions as follows: 1. Diseases with acute joint symptoms resembling each other in the character of the joint involvement and accompanying complications, belong to a definitely infectious group. 2. The nature of the infection is clear in the following group: Group 1. Septicemia, pyemia, puerperal fever, typhoid, pneumonia, epidemic meningitis, influenza, dysentery, gonorrhea. 3. The character of the disorder has been established as definitely infectious in: Group 2. Scarlet fever, smallpox, dengue. 4. An infectious origin is presumed on good analogical evidence in: Group 3. Acute articular rheumatism, acute arthritis deformans, Still's type and the erythema group. 5. When the infectious diseases with acute joint symptoms and known etiology and also those with established identities but still uncertain etiology have been eliminated, another group remains which contains acute articular rheumatism, acute arthritis deformans and the erythematous type of lesions. That specific toxic agents are responsible for these seems not doubtful, and that these agents differ from each other is probable. 6. The final diagnosis of acute articular rheumatism can only be made after Groups 1 and 2 have been excluded, and there are clinical differences clearly separating the diseases in question from the other members of Group 3. 7. There are cases in all groups that can be diagnosed only with the lapse of time, and some which can not at present be differentiated at all.

The Vaccine Treatment of Gonnorrhea in Children.—The result of the opsonic treatment of gonorrheal vulvovaginitis in a small hospital epidemic, involving twelve children of ages ranging from one and one-half to twelve years, is reported by W. J. Butler and J. P. Long. The gonococcus was readily grown on blood serum and blood agar. They found a considerable advantage in using young cultures from six to eight hours old, to avoid trouble from clumping, and consider this an important point in minimizing the difficulties of opsonic work in general. This holds good in the preparation of the vaccine as well as that of the emulsion. The following method of staining was found especially serviceable: After fixing in a bichloride solution and washing, they place the slide in a 2.5 per cent. solution of sulphuric acid for several seconds, until the coloring of the smear fades; it is then washed off in water and stained with an alkaline aqueous solution of methylene blue for one

minute. This makes an excellent slide for counting. The vaccinations were interspaced according to the opsonic index, the normal of which was determined from the average phagocytic count of four healthy boys. Two vaccines were employed; one from a single case of gonorrhea, the other from cultures made from four cases. Both were standardized to 20,000,000 per cubic centimeter. In the more protracted cases a change of vaccine was made from the first of these to the second, with very prompt results in two of the cases, and the authors think it not improbable that a vaccine made from cultures taken from several cases of gonorrhea may in some instances be more effective. In all the twelve cases treated by the opsonic method, except three, the discharge disappeared and smears were negative after a few weeks' treatment. The three exceptions were handicapped by inability to control their disposition; reinfection is suggested as possible. All three cleared up, but a slight discharge has recurred in two of them. In the third, the discharge also recurred, but has since cleaned up and the smears are negative.

Local Arteriosclerosis.—F. Fremont-Smith concludes that arteriosclerosis is often, in its beginnings, a local disease, dependent on acute or chronic infections. Its final outcome depends on the extent of the primary injury to the vessel and the success or failure of natural reparative processes. Arterial hypertonus may sometimes exist independently of arteriosclerosis, and he gives personal observations of such cases as well as testimony from the literature. Its persistence, however, as Hare has shown, may be regarded as a precursor to arteriosclerosis. It may or may not produce, or be associated with causes which produce cardiac vascular phenomena. On the other hand, the arteriosclerosis exists independently of arterial hypertonus as both a local and a general disease, and the absence of hypertension must not be regarded as security from dangers arising from arterial degeneration.

Postpartum Perinephritic Abscess.—J. S. Horsley reports three cases of perinephritic abscess occurring in his practice within the past two years. In all three patients the first symptoms appeared within a few weeks or days after confinement, and in two were preceded by a distinct interval of apparently perfect health. One patient gave a history of slight puerperal infection, but in all three a vaginal examination, made when first seen by Horsley, showed no evidence of inflammation in or about the uterus, ovaries or tubes. It is probable, he thinks, that there was some septic infection during the labor or convalescence that was carried to the kidneys by the lymphatics when their surrounding tissues were in a condition of lessened resistance from the effects of the muscular strain and pressure during parturition. In all three cases, the abscess was on the right side, a fact possibly accounted for by the lower position of the right kidney making its perinephritic tissue more liable to injury from uterine pressure during labor. The diagnosis in these cases is very important, as the symptoms are often vague in the beginning, and the successful management is largely dependent on the promptness of recognition and treatment. Whenever, after an injury or violent muscular exertion, as in parturition, there is tenderness on pressure over the kidney, and the patient on sitting or standing inclines to the tender side, the possibility of perinephritis is at once suggested and the case should be followed and watched for further symptoms. These are given by Horsley; among the earlier ones are spinal stiffness and curvature in an anteroposterior direction, pain on pressure, often deep-seated and paroxysmal, but generally to some extent continuous and rather widely distributed. If in the knee, with stiffness and lameness, it may suggest hip-joint disease. The temperature, even in the earily stages, frequently reaches 103 F., or higher, in weakly individuals the symptoms may be atypical and mask the condition until the increase of size forces the recognition of the abscess. The urine is not often affected in perinephritic abscess following parturition, unless the abscess ruptures into the kidney, which is rare. The treatment consists in evacuating and draining the pus by a lumbar incision, similar to that employed in nephrotomy. It should be done as soon as the diagnosis is made, as delay greatly increases the mortality.

Glandular Fever.—F. W. Terflinger gives an account of an epidemic of glandular fever that occurred among the inmates and employees of the Northern Indiana Hospital for the Insane, in the winter of 1904-5. The notable features of this epidemic were the number of persons attacked (150) and their ages, ranging from eighteen to eighty. Heretofore this disease has been considered a disorder of childhood. He offers the following conclusions: 1. Glandular fever may and does affect adults, and is not a disease of childhood only. 2. Sex, age and occupation have no influence. 3. In adults, complications and sequelæ are rare. 4. The prognosis is favorable.

The Lancet, February 29, 1908.

Acid Intoxication Following the Administration of Chloroform.—The patient of H. Thorp was a boy about four years old, who was circumcised. About two drams of chloroform were given over a period of seven minutes. Immediate sequence was without incident. About fourteen hours later he presented noisy respiration, rapid and feeble pulse, and could not be roused. The lungs were full of moist râles. Vomiting came on and was recurrent. Fifteen hours from the onset of his symptoms the smell of acetone was perceptible in the breath. Urine was secured by catheter. Symptoms continued as above, with slight general twitchings, screaming attacks, apathy, loss of conjunctival reflex, and finally, in spite of all therapeutic measures, death ensued thirty-six hours after the operation and twenty-three hours after the onset of symptoms. The urine contained 8.31 gr. urea per ounce. Reaction for acetone was positive; for diacetic acid doubtful.

Two Cases of Anthrax.—J. S. Clarke reports the cases, the first being that of a farmer with symptoms of some severe constitutional disturbance and a sore on the left forearm about one inch in diameter, with a depressed center and an annular zone of vesicles. The depression was purplish-red, not black. Edema and pain were absent; axillary glands enlarged. Smears were made and bacilli resembling those of anthrax were made. Under chloroform the sore was excised and healed without incident. Culture tests confirmed the diagnosis. The second case was that of a man who had helped the farmer kill a diseased bull four days previously. The animal's viscera presented nothing unusual and were eaten by pigs, who suffered in no evident way. The assistant's local lesion was on the back of the wrist. The pustule was far more typical than was that of the farmer. Constitutional symptoms were wanting, but the axillary glands were enlarged and the wrist was slightly edematous, with some redness about the sore. Excision was done under local anesthesia with ethyl chloride. Healing was without incident.

Pathology and Etiology of Intussusception from the Study of a Thousand Cases.—This analysis is made by D. C. Fitzwilliams, who has drawn his material from various hospital reports and journal articles. His definition and description of the condition follow the conventional lines. We can mention only a few of the many points brought out in the interesting paper. The author contends that ileocecal cases are all of enteric origin, and supports his views by the following arguments: 1. The ileocecal valve is the narrowest part of the intestine; it is in consequence the most unlikely spot for the inner to slide through the returning layer. 2. The ileocecal form of intussusception is so common and the ileocolic form comparatively so rare as to make it unlikely that the extreme end of the ileum should in some cases, for reasons unknown, assume a totally different mechanism of the invagination. For be it remembered that according to the accepted view the ileocecal valve is the starting point of both varieties. 3. Owing to the anatomical arrangement of the layers there is no force present which renders it possible for the inner tube to pass through the returning layer. 4. In an ileocolic intussusception there is no way of excluding the possibility of its having started in the lower end of the ileum and passing through the valve by the same mechanism which operates in all other portions of the alimentary canal. 5. Many instances of enteric intussusceptions are met which, if growth continued as far as the valve, would be indistinguishable from what is now called ileocolic forms. 6. Many intussusceptions have been reported as ileocolic varieties, although there was an ulcer, a polyp, or even a Meckel's diverticulum at the apex, conditions which are well recognized as being the starting point of intussusceptions in the lower portion of the ileum. 7. Ileocolic intussusceptions can, as I have just demonstrated, be easily explained as having taken place by the ordinary mechanism if it is only recognized that they are enteric in origin and have not *started* at the valve. We are, therefore, driven to the conclusion that the so-called ileo-colic form should not be described as a separate variety of intussusception, and this class is accordingly grouped with the enteric cases. Statistics are given as to the point at which the intussusception begins. In the urgency of an operative, and in the limited space of a small incision, determination of this point is often difficult. The spiral twist, which is sometimes found in extensive invagination, and which may be occasionally one of the obstacles preventing reduction, is the direct result of the intussusception traveling in a corkscrew-like manner round the root of the mesentery. Occasionally one may find a retrograde intussusception. In such cases, the lower part of the

bowel is invaginated into the part above. Such cases are commonly seen in the autopsy room, but are rarely met with during life. It is quite certain, however, that they do form during life, and are capable of giving rise to the same acute symptoms as does the descending variety.

British Medical Journal, February 29, 1908.

A Plea for a Neglected Remedy.—Eustace Smith deplores the neglect in these later days of the use of antimony, which he regards as one of the best remedies in catarrhal states of mucous membranes. No other drug approximates its value in bronchial catarrh. Many of the cough mixtures given in the early stages of this malady are constructed on wrong principles. Ammonia, squills, and paregoric in the earlier stages make the cough harder and the chest tighter. In this way a catarrh is driven back into the smaller tubes and in children a bronchitis may be turned into a pneumonia. Such remedies are all right for the later stages. The remedy *par excellence* for the earlier stages is antimony in small and frequent doses, stopping short of its depressing effect. It is well to combine it with a diaphoretic. The antimonial wine is undoubtedly the most convenient form for administration. Definite indications are difficult breathing, incessant and hacking cough, small and feeble pulse. In the early stages of bronchopneumonia, laryngeal stridor, upset stomach (here in small doses). An old-fashioned mixture for gastric pain after meals is one teaspoonful in half a glass of water as soon as the pain begins of a mixture containing one and one-half grains of tartar emetic, one ounce of magnesia, six drams of bicarbonate of soda and five drams of tartaric acid. Antimony is also a valuable hepatic stimulant, and is of service in inflammatory skin conditions, especially acute and chronic eczema.

Scarlatina Associated with Pyrexia in Apparently Healthy Contact Cases.—Personal experience in a recent epidemic is given by B. Thornton. His main contention is that it is very likely that in a community infected with scarlatina, in addition to those who show definite symptoms of the disease, there are others who are affected by the poison to a minor extent, as shown simply by an elevation of temperature; and it may be a useful precaution to take the temperature of contacts, with the view of keeping under special observation those who, though apparently quite well, are suffering from a moderate degree of pyrexia.

Treatment of Experimental Trypanosomiasis.—The results of experimental work by A. Castellani justify the author in presenting the following conclusions: (1) Quinine cacodylate shows a well-marked trypanocide action in monkeys experimentally inoculated with a strain of trypanosome closely resembling *T. evansi*. (2) Mercury perchloride improves the general condition of the inoculated monkeys, and frequently causes the temperature to subside to normal. Given alone, however, its trypanocide action is not very marked. In patients affected with sleeping sickness it would seem from the experiments made by Low and the author in 1903 that mercury perchloride given by intravenous injection induces a fall in the temperature, but the improvement is only temporary. (3) The author suggests that quinine cacodylate alone, or, better, in combination with intravenous injections of perchloride of mercury, should be tried in sleeping sickness, using large doses. If it should be found that quinine cacodylate has a marked trypanocide action also on *T. gambiense*, the advantage of this drug over other preparations would be its powerful action on the malaria parasites. This would be an appreciable advantage, as in the experience of many observers, among whom Low and the author, a large number of sleeping sickness patients are suffering also from chronic malaria. (4) Quinine cacodylate, besides its trypanocide properties and its action on Laveran's parasites, has apparently some action on other protozoa, as, in the author's experience, its use is beneficial in kala-azar and yaws.

Berliner klinische Wochenschrift, February 17 and 24, 1908.

Specific Sera for Plant Albumins.—Gasis discusses the subject of the precipitin reactions and describes observations made by adapting animals to the albumins of various plants. For this purpose rabbits were injected with substances obtained from rye, rice, and beans, by the following process: The various flours were extracted with 10 per cent. salt solution, the salt was then partially removed by dialysis, the resulting precipitate of globulins filtered off, the proteins in solution preciptated with alcohol and dilute acetic acid, and then washed with water, alcohol, and ether. The resulting powder gave the albumose reactions. In adapting the animals 0.05 g. of the substance in 10 c.c. of salt solution was injected subcutaneously, or 0.01 g. in 2 c.c. of salt solution was injected intravenously. It was found that distinctly specific sera were produced and that it was even possible to distinguish in this way between beans of different species. The reactions were more or less pronounced according to the degree of relationship of the plants tested and the differentiation was possible at lower dilutions than is the case in dealing with animal albumins.

The Diagnosis of Gastric Ulcer.—Bönninger has found the following procedure useful as an aid in the diagnosis of gastric ulcer: In the morning, while the stomach is in the fasting condition, it is washed out with 100 c.c. of water, and this fluid is afterward subjected to the usual tests for acidity, mucus, blood, epithelial cells, etc. Then one or two hundred c.c. of 1/10 normal hydrochloric acid is introduced through the tube. If the stomach is a normal one or there is some disease other than ulcer, no pain follows this procedure, but if an ulcer exists severe pain is immediately caused, which may at once be relieved by having the patient drink some milk. If no pain is caused, an endeavor is made by rubbing and by changing the position to bring the fluid into contact with all portions of the stomach wall. If there is still no pain, the author believes the possibility of ulcer may definitely be excluded. Prerequisites are an empty stomach and the presence of pain as a symptom of the malady, for the test is intended simply to accentuate what normally happens when digestion is going on. In the treatment, Bönninger has found cream an agent of great value, since it is highly nourishing, taxes the stomach but little, is fluid, causes the secretion of very little acid, and binds a great deal of acid. He is also a believer in the administration of large doses (10 g.) of bismuth with the stomach in the fasting state.

Munchener medizinische Wochenschrift, February 18, 1908.

Zinc Chloride in Carcinoma and Phenol in Endometritis.—Herff has found that the use of zinc chloride as an application in endometritis or as a vaginal irrigation, as often advised, is not satisfactory from the therapeutic standpoint and in addition is open to the objection of sometimes doing damage through cicatricial stenosis or cauterization of the vagina. The latter is especially likely to result if the solution is made up without the addition of a few drops of hydrochloric acid, as otherwise the salt does not all go into solution and the undissolved particles are deposited on the mucous membrane and injure it. For intrauterine applications in endometritis he warmly recommends alcoholic solutions of carbolic acid ranging in strength from 50 per cent. even up to 90 per cent. Iodine also is valuable for the purpose, and these remedies are superior to formalin. While chloride of zinc is not a proper agent for use in treating endometritis it forms a highly serviceable application to inoperable cancers of the uterus. The ulcerated surface is thoroughly curetted and in three or four days is well cauterized with zinc chloride. To do this a plug of cotton shaped to fit the cavity and coated with a 50 per cent. paste of the salt and starch with a few drops of glycerin is introduced and allowed to remain in position for from four to eight hours. The author has employed the method in hundreds of cases without any mishap, though instances of fatal poisoning with zinc chloride have been reported.

Carbon Dioxide Hand and Foot Baths.—Pototzky ascribes beneficial effects to hand or foot baths in which carbon dioxide is being evolved. The results are due to the local stimulation of the forming gas bubbles attended by continual slight changes in temperature which also are stimulating. The conditions in which the measure is likely to be useful include local circulatory disturbances such as habitual cold hands or feet, hyperhydrosis, and chilblains. It is also indicated in hyperemic conditions of the brain, insomnia, nervous vasomotor disorders, asthma, angina pectoris, etc. The hands or feet are immersed in the bath to the middle of the forearm or of the leg and kept there for periods of time depending on the special conditions present. The temperature of the bath is in the neighborhood of 28° C. and the gas is generated by the action of hydrochloric acid on sodium bicarbonate, or some similar method.

Boric Acid Poultice.—Mix a tablespoonful of cold water starch and a teaspoonful of boric acid with a little water; add the mixture to a pint of boiling water and stir the whole until a uniform mucilaginous mass is formed. When cold spread the jelly thickly on cotton and cover it with a piece of muslin. Then apply to the part. A good plan is to put on the poultice at bedtime and to remove it in the morning. It is useful in acute and subacute skin affections to cleanse and soothe prior to the applications of ointments, etc.—*The Hospital.*

Book Reviews.

Thinking, Feeling, Doing. An Introduction to Mental Science. By E. W. Scripture, Ph.D., M.D., Assistant Neurologist, Columbia University. Second Edition, Revised. Illustrated. New York and London: G. P. Putnam's Sons, 1907.

The new or experimental psychology, of which this book is an exponent, insists on having all statements concerning mental facts proved by experiment and measurement. This is to replace the former or old psychology, which was largely based on speculation and guesswork. The new psychology, as handled in the present volume, is interesting; it is also revolutionary, in that it tends to put psychology on the same basis as the other sciences. The subjects discussed by the author are: Watching and Testing; Time and Action; Reaction-time; Thinking-time; Rhythmic Action; Steadiness; Power and Will; Touch; Hot and Cold; Smell and Taste; Hearing; Color; Color Sensitiveness; Seeing with One Eye and with Two Eyes; Feeling, Emotions, Moods; Attention; Memory; Suggestion and Expectation; Materialism and Spiritualism. Experiments are freely introduced, some of which require special apparatus and can be performed only in the laboratory, while others are well within the powers of every reader. As an illustration of Prejudice, the author gives the following: "Seven alienists of good standing swore that according to the facts before them a certain murderer was sane; they were employed by the prosecution at $100 a day. The defense employed seven equally good alienists at $150 a day; these swore that according to the same facts the man was insane. Every one of these men was honest in his opinion—at least, as far as his consciousness went; there was at work a cause which unconsciously led him to give his opinion in a certain way; he was paid to do so." The book can be cordially recommended to the attention of all who think—and feel—and do.

Diseases of Children for Nurses, including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene, and Nursing. By Robert S. McCombs, Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia; Assistant Physician to the Medical Dispensary of the Hospital of the University of Pennsylvania. Illustrated. Philadelphia and London: W. B. Saunders Company, 1907.

This is a concise, practical little work, giving special attention to nursing in the diseases of infancy and childhood. One point of value is that the special features of nursing in each particular disease are given in connection with a brief description of the disease. While it cannot lay claim to originality or exhaustiveness, it brings together in compact form and presents in an attractive way information that is indispensable to the nurse or the mother, who would be successful in the care of children. He has presented all the material on the subject of drugs and therapeutic measures that could be of use to the nurse, and makes no pretense of taking the place of the physician. One wishes, however, that he had given the subject of artificial feeding during early infancy somewhat fuller treatment.

Heart Disease and Thoracic Aneurysm. By F. J. Poynton, M.D., F.R.C.P., London. Assistant Physician to University College Hospital, and Physician to Out-Patients' Hospital for Sick Children, Great Ormond Street, London. Late Medical Tutor and Medical Registrar to St. Mary's Hospital. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1907.

The author has made the most of the space at his command in giving the essential points which have to do with the ordinary forms of heart disease; it is a very compact and accurate digest of these affections and has been put fully abreast of the times. The section on Rheumatic Heart Disease is particularly commendable in that it gives a general description from a bacteriological, pathological, and clinical standpoint which will prove of exceptional value to the student whose concept of pericarditis, for instance, is extremely vague and who looks on all the divisions of these rheumatic manifestations as separate entities. The author wisely omits the curiosities such as will rarely be met and teaches clearly and soundly what the student and practitioner encounters in his daily work. A good though short chapter on arterial disease and aneurysm occupies about twenty pages of the text, which is followed by a list of prescriptions and diets suitable for cardiac cases and a résumé of the Nauheim baths and the Schott movements. Throughout the work are twenty excellent and well selected illustrations and seventeen plates, mostly dealing with the pathology of the subject.

Röntgen Rays and Electrotherapeutics, with Chapters on Radium and Phototherapy. By Mihran Krikor Kassabian, M.D., Director of the Röntgen Ray Laboratory of Philadelphia Hospital, formerly in charge of Röntgen Ray Laboratory and Instructor in Electrotherapeutics in Medico-Chirurgical Hospital and College; Member of the Philadelphia County Medical Society, Pennsylvania State Medical Society, American Medical Association, American Röntgen Ray Society; Vice-President of the American Physico-Electrotherapeutic Association; New York Medico-Legal Society, etc., etc. Philadelphia and London: J. B. Lippincott Company, 1907.

In this work the author has attempted with some measure of success to set forth the more important facts pertaining to the Röntgen Rays and Electrotherapeutics. The author takes up his subject under three heads: (1) A general consideration of the subject of Electrotherapeutics. (2) A more or less exhaustive treatise of Röntgen Rays in diagnosis. (3) Radiotherapy, Radium and Phototherapy. Considerable space is given to the technique of skiagraphy and other applications of the *x*-ray. Dental skiagraphy has in particular received more attention than is generally accorded to this division of the subject in textbooks. The work is copiously illustrated—in fact, this feature of the book, it must be confessed, is rather overdone. Many of the illustrations fail to illuminate the text and in some instances at least it is difficult to see clearly their relation to the matter in hand except as they are perhaps excellent reproductions of photographs of the static machine and its manipulator. Such a fault, however, is of minor importance, and, in view of much that is excellent, such as descriptive matter pertaining to the use of static electricity, high-frequency currents, and the cathode rays, may be overlooked. A much more serious criticism the author deserves on other scores. First, in his failure to give due credit to the splendid work of other *x*-ray operators, both in this country and abroad. For instance, on page 312 he says: "Radiographs of the thorax have been made by von Ziemssen and Rieder in one second of time, etc.," and he fails to add that even better results than Rieder has accomplished, since the latter's work was done after Rosenthal's method, that is, with the aid of intensifying screens, have been attained in this country by Henry Hulst and others without the interposition of screens at all. Moreover the author fails to set forth clearly the real purpose of rapid exposure. He says, on page 312: "Exposure should be as rapid as possible, otherwise the incessant motions of the thoracic viscera will cause a blurred shadow." He does not state what is the much more important purpose of rapid exposure, viz., to avoid the effects of the secondary rays.

A consideration of that part of the book which deals with therapeutic application forces one to admit that the author does not always show good judgment or skilled medical knowledge. The book is lacking in such features as would make it of value to the expert, while it is rather too vague and confused to be of great use to the beginner. It may be criticised as an attempt to cover too much ground, and cannot be regarded as any improvement on already existing works on the same subject.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology in Starling, Ohio, Medical College, and Sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Second, revised edition. Philadelphia: F. A. Davis Company, 1907.

This book is plain and practical and for the use of the student and busy practitioner. A conspicuous innovation is the description of the technique of the operation of Goffe for extensive cystocele and that of Watkins for post-climacteric prolapse of the uterus. Full page plates serve to illustrate the latter operation. Another innovation is an index of regional symptoms of ascites, discharge, hemorrhage, pain, and painful menstruation. What pathology is given is of very elementary character and one plate is shown reversed. Among three hundred and fifty figures, about one hundred and sixty are illustrations of special instruments. Taken as a whole the book is of value and to be recommended to those who require a little more than a fragmentary knowledge of this subject.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held December 17, 1907.

DR. GLENTWORTH R. BUTLER IN THE CHAIR.

Masked Appendicitis.—Dr. ALGERNON T. BRISTOW of Brooklyn read this paper. He said that it was a common practice for the textbooks to describe a prevailing type or typical form of a disease. If a case always followed the type described in the textbooks, then mistakes would rarely be made. Diagnosis would be a matter of no difficulty. The typical cases of appendicitis were common. But the atypical cases were likewise common. The real difficulty was not in diagnosis, but in prognosis. The attitude of the family physician toward appendicitis was usually that the majority of the cases got better on the expectant treatment. It was merely necessary to review the frequent results of unrecognized or untreated cases, such as appendicular abscess, gangrenous appendicitis, diffuse peritonitis, and metastatic infection, to realize that too high a price was paid for an error in diagnosis. There were not many practitioners who would fail to advise operation in cases accompanied with violent pain, extreme tenderness, and persistent vomiting. But it was far more dangerous to wait in certain cases in which the medical attendant believed he was dealing with a mild type of the disease. Occasionally, with a temperature of 99° and a pulse of 80, the condition was nevertheless a dangerous one. In many diseases one attack conferred relative immunity for subsequent attacks. This was not so with appendicitis. In this connection the attitude of life insurance companies was significant. A case that had had one attack of appendicitis was absolutely uninsurable. Every surgeon could call to mind cases that had had several attacks, in which the last attack was fatal. Subacute attacks were frequently regarded merely as indigestion. The speaker detailed six varieties of masked appendicitis, each of which without operation would have terminated in death. Class 1 included cases in which the subjective symptoms were mild. The pulse and temperature were both low. As examples of this form, he recalled the cases of two physicians and also the son of a physician. In one of the former the patient was seen in his office fully dressed; there was pain in the right side of the abdomen, there was no marked spasm, no increased temperature nor accelerated pulse. The next day the patient was in bed; examination now showed some temperature and a slight spasm. Leucocytosis was 10,000 and the percentage of polymorphonuclears was 81. Operation revealed a gangrenous appendix. The second case was that of a house physician at St. John's Hospital. On January 14 he was well and attending to his usual duties. At 11 o'clock he had a vague pain in the abdomen. At 12 o'clock he had a slight headache and the abdominal pain disappeared. Pressure over the region of the appendix caused nausea. He took a dose of salts and at 2 P.M. went to bed. There was no rigidity of the rectus. The surgeon detected no symptoms of appendicitis. At 8 P.M. the temperature was 98.4° and the pulse 100. Leucocytosis was 18,000. The next morning pulse was 110 and temperature 99°. Operation revealed an appendix perforated at the tip, with pus free in the peritoneal cavity. The third case, that of a physician's son, was seen two weeks after the patient had returned from a camping expedition. He had complained of vague digestive disturbances. That morning he had eaten his usual breakfast. At 3 P.M. he had general abdominal pain, but this was not severe. The pulse was 90 and temperature 99°. As long as he remained quiet there was no pain. Leucocytosis was 20,000, with 90 per cent. polymorphonuclears. Operation revealed an inflamed appendix with a gangrenous tip. In the second class of cases the symptoms were not more marked than in the above, but the blood count was deceptive. An example of this variety was afforded by a lady, Mrs. P., who had been under observation for three days. When seen by the speaker she was fairly comfortable; temperature, 99°; pulse, 80; blood count showed leucocytes 14,000, with 88 per cent. polymorphonuclears. The next day the former were 12,000 and the latter was 70 per cent. In ten days the patient was removed to the hospital and then had a leucocytosis of 10,000, with 70 per cent. polymorphonuclears, a temperature of 99° and pulse 76. Operation discovered in the pelvis a highly inflamed appendix, about which there was an ounce of pus. Another case was that of Dr. A. S., who complained of tenderness over the pubic region. Leucocytosis was 20,000 and polymorphonuclear count was 70 per cent. Temperature, 99.5°; pulse, 76. Operation showed an abscess cavity in the pelvis behind the rectum. The patient had had a previous attack of appendicitis, as evidenced by the presence of old adhesions. The third type of cases were those in which the abdominal pain was referred to a region distant from the seat of inflammation. An example of this type was furnished by a patient 25 years old, who had been ill three days, and who attributed his trouble to a dose of Rochelle salts. All the pain was in the left iliac region, with tenderness in pressure. A diagnosis of acute diverticulitis was made. The patient was operated on through a median incision, which showed a gangrenous appendix deep in the right side; culture revealed a colon bacillus infection. The wound was closed without drainage. Type 4 included cases in which there was apparent recovery, with the presence of a latent abscess in the abdominal cavity. On the resumption of work by the patient, the abscess would rupture. A case of this kind was recalled as that of a dentist who had had a moderate elevation of temperature and a moderate pain in the back and on the right side of the abdomen. The pain in the back persisted, and the abdominal pain became localized in the right loin, but not in the appendiceal region. On getting out of bed the patient felt something give way. On operation there was found an abscess cavity which had ruptured and caused a general peritonitis. The fifth type of cases includes those in which there was an encysted abscess. Such a case was that of the late Dr. C. On April 21, 1885, he had had his first attack, which consisted of violent chills, high temperature and great pain. The patient died in 1892. During the interval he had had numerous attacks like the first, over a dozen of them, and had been variously treated for malaria, typhoid fever, and other things. The chills had been due to an appendiceal abscess, which had been draining into the ileum. The chills occurred whenever there was an interference with drainage. The abscess was buried in dense adhesions. There were other cases of appendicitis walking about with a large abscess in the abdomen. The sixth style of cases comprised those of chronic subacute appendicitis, the pain and tenderness were not extreme, nor were they felt in one spot. Certain articles of food disagreed. The patient had to be careful about his diet. He had occasional nausea. This type was the most frequent one of the masked forms of appendicitis. The blood count, if it could be of any value, had to be made by an expert. There was usually revealed a leucocytosis and a high percentage of polymorphonuclears. One attack conferred no immunity against subsequent attacks. Two attacks were serious. These were the cases that furnished most of the mortality from appendicitis. No one could tell anything about the real condition of the appendix except from inspection. Over 75 per cent. of the cases of appendicitis that went to operation were pus or gangrene cases. The speaker was personally in favor of operation twelve hours after the beginning of an attack.

Dr. H. BEECKMAN DELATOUR of Brooklyn said that the

speaker had so fully set forth this subject that he could only emphasize what he had said by iteration. So many cases gave a history of previous attacks that when a patient was said to be cured after a first attack he was really not cured. It was most unfortunate that one had to go over the ground again and again. To be sure, there were some cases in which it was advisable and rational to delay, and to advise against operation. Such were cases of a mild type, in which the patient was neurotic or had a bad heart, and also cases of obese individuals, with low temperature and moderate tenderness, who improved within twenty-four hours. Dr. Bristow's classification was very good. The speaker cited the case of a young woman in whom the pain was referred to the umbilicus. Incision was made in the median line, but it was difficult to satisfy the operator that he had a case of appendicitis to deal with. Fairly common were these cases of apparent recovery with abscess. He cited the case of a young boy who had recovered from an attack of typhoid fever, and was out playing ball; suddenly he felt a severe pain and died six hours later from a ruptured abscess. There were cases of chronic low-grade appendicitis with vague symptoms of intestinal indigestion.

Dr. Walter C. Woods of Brooklyn cited a case of inflamed femoral hernia with a gangrenous appendix in the sac. There were also cases of appendicitis associated with typhoid fever. There were also cases in which the symptoms were those of typhoidal infection of the appendix. These cases got well with or without operation. Rarely did they run on to suppuration. It was sometimes necessary to differentiate between perforation of an intestinal ulcer and perforation of an appendix. In children during the summer cases of underlying appendicitis were frequently overlooked, being masked by a gastroenteritis or enterocolitis. Twenty years ago Gibney had spoken of cases of abscess of the appendix being mistaken for hip-joint disease.

Dr. Frederick S. Dennis of New York said that vomiting, rigidity and a rising leucocytosis were the cardinal signs that an operation was necessary. Even a falling leucocytosis with persistence of the other symptoms did not make less urgent the need of an operation.

Certain Evil Tendencies in Medicine and Surgery.—Dr. Maurice H. Richardson of Boston, Mass., read this paper. He said that he greatly enjoyed the paper that had just been read, and admired the manner in which these obscure cases had been studied. This was such a practical paper that it was with great diffidence that he read his own, which was not so practical. The title was misleading. The adjective evil was too strong. It would take a long time to frame a satisfactory definition of the word evil. In examining the early volumes of the *Boston Medical and Surgical Journal*, he was struck by the reports of cases that exhibited the widespread tendency as at present to be satisfied with hasty diagnosis. An example of such hasty diagnosis was afforded by the case of a man past middle life, who was sent into the hospital with the diagnosis of enlarged prostate. Complete anesthetization enabled the speaker to make a diagnosis of inoperable cancer. In 1828 every surgeon, as to-day, occasionally made a mistaken diagnosis as to the presence of stone in the kidney. The speaker said that he took the field against the diagnosis of renal stone without the evidence afforded by the *x*-ray. In the early days, the *Lancet* and other medical journals frequently indulged in sarcastic criticism of operative failures and did not hesitate to lash the unsuccessful operator. To-day, it remained for the surgeon to show up his own mistakes. The surgeon had to walk in the straight and narrow path. In many hospitals there were rules which prevented an operation without the consent of the rest of the staff. Mistakes in diagnosis were often the result of inadequate study. He believed that as a rule conclusions were right, but that facts were wrong. Each symptom had to be given its weight. It was thorough and adequate study that enabled Fitz to perfect the diagnosis of acute pancreatitis. It was the rule, rather than the exception, to make this diagnosis. Diagnoses were often made upon too hasty observation of inadequate data. The patients were frequently dissatisfied at the failure of the physician to make a hasty diagnosis. But adequate investigation was necessary for a careful diagnosis. In the first place it was necessary to get a careful history and to make a painstaking physical examination. It was necessary to cross-examine the patient and read the history to him. Another tendency of modern surgical practice was that toward the operative diagnosis. The question that seemed to present itself was, why should the physician spend his time in trying to make a diagnosis when an exploratory incision would settle the diagnosis at once? But many a life was lost on account of this effort toward the operative diagnosis. The resort to the operative diagnosis discouraged the other method of painstaking examination and deduction. The exploratory operation was to be the court of final decision in doubtful cases. There were cases of mistaken operative diagnoses. A case was recalled in which a cicatricial pylorus was removed for cancer. The speaker emphasized the importance of an accurate history to look back upon to aid the exploratory diagnosis. In diagnosing conditions about the gall-bladder it was worth while to remember that jaundice might have been due to thickening of the head of the pancreas. There was a tendency among surgeons to make light of the surgical operation. It was necessary to weigh the contraindications more than the indications. In abdominal surgery the evils of an unguarded prognosis were chiefly seen. It was necessary to abandon entirely the faith in a short cut to diagnosis and to go back to the old-fashioned history and careful examination. The surgeon had to combine a calm and judicial temper that carefully weighed all the evidence with the highest mechanical skill.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held February 7, 1908.

Dr. Charles H. Peck in the Chair.

Seminal Vesiculotomy to Date.—Dr. Eugene Fuller said that he had performed this operation 101 times and without a fatality. Out of this number the operation had been undertaken twenty-three times for the relief of gonorrheal rheumatism. His first four cases of seminal vesiculotomy for gonorrheal rheumatism were reported in the Annals of Surgery, June, 1905. In all of the twenty-three cases the operation had had a profoundly beneficial effect on the rheumatism, all the patients having left the hospital in a well or a greatly improved condition. In all these cases there was, of course, a seminal vesiculitis to account for the focus from which the systemic absorption originated. Out of the twenty-three cases seventeen were cured as a direct result of the operation and were well when last seen. Of the remaining six two got well after the operation and remained so until about one year, when each of them contracted gonorrhea afresh. Rheumatic symptoms then reappeared. Both of these patients were then seen but once with moderate rheumatism, after which trace of them was lost. Two more, after leaving the hospital in a very satisfactory condition, immediately resorted to sexual intercourse. The sexual exercise during the convalescent stage from the operation naturally reinflamed the seminal vesicles, and there was a relapse of the rheumatism. In both these cases, however, the rheumatism again disappeared after the effect

of the premature sexual exercise passed off, and these patients were now well. Two very chronic cases relapsed, one after being well eight months after operation, and one after being relieved three months. In both these cases there was a recrudescence of the tenderness and inflammation in the seminal vesicles. They were destitute individuals and probably exposure and poor living were to blame for the relapse. In the acute bedridden patients the effect of the operation was most marked. In twenty-four to thirty-six hours the pain in the joints disappeared and by the fourth day the swelling. Some stiffness and some atrophy of the muscles were of course left after the rheumatic process had disappeared in these acute cases, requiring massage and passive movements. In the chronic cases the pain disappeared in a week or ten days, and at the end of two weeks massage could be prescribed. In the very chronic cases it might take from two to three months of massage and exercise to limber up the joints which had been robbed of their function. In fact, one had the same problem in these cases which the surgeon had after resolution from a fracture of standing. It was well known that in chronic gonorrheal rheumatism massage and manipulation made matters worse; whereas in these cases of convalescence after the seminal vesiculotomy such treatment was beneficial because there was no longer the systemic absorption of the toxin. In many of the chronic cases the preceding gonorrhea was so remote an affair that the existing rheumatism had supposedly had no connection with it. In these cases the diagnosis of uric acid, chronic rheumatism allied to the so-called inflammatory form, arthritis deformans, gout, neuritis, and neuralgia, had been made to account for existing conditions. The physician or orthopedic surgeon rather than the genitourinary surgeon had been consulted for most of these cases. He exhibited the following illustrative cases:

The first patient he presented was a man, 30 years old, operated on by him in early January in the City Hospital. He had a chronic gonorrheal rheumatism of eight years' standing. Both knees, hips, spine, and neck were involved. The back was bent, and there was no mobility to the spine and but very little motion to the neck. He had been on crutches for a year before the operation. He acquired his first gonorrhea nine years ago and a second attack four years ago. Both seminal vesicles were thickened and embedded in a preseminal vesicular sclerosis. Vesical vesiculotomy was performed five weeks ago. The thickened sclerosed tissue surrounding the seminal vesicles was cut through on each side and the seminal vesicles were freed from the surrounding adhesions, after which both sacs were freely incised, packed with gauze, and drainage tubes were adjusted. In this case, owing to the chronicity of the lesion, there was no active intraseminal vesicular catarrh, the sac walls being in fact compressed and somewhat atrophied. A few intracellular diplococci were found in a smear taken from the region of the sac cavity. One week after the operation the patient could move his back and neck quite freely without pain. He was now walking about without crutches or cane. The affected joints were still somewhat stiff and the muscles had not yet recovered wholly from their atony, but these symptoms were rapidly disappearing as the result of massage and exercise.

The second patient that he presented was a man, 45 years old who was operated on about seven weeks ago at the City Hospital. He entered the hospital owing to trouble in connection with his left knee, which he had had apparently for four months. The knee was the seat of a hard inflammatory tumefaction, consisting apparently of an exudation. This exudation had caused complete ankylosis. The joint was tender on deep pressure and much pain and tenderness resulted when the weight of the body was put on the joint. The patient gave a past history of severe gonorrhea or relapsing urethral discharge. His sexual function was also impaired. At the time he entered the hospital he felt that he had no gonorrhea or urinary inflammation. Medical and the orthopedic form of treatment had been tried with no beneficial effect, and the patient was then transferred to Dr. Fuller's service. The examination showed that he had a chronic seminal vesiculitis, especially in connection with the right sac, the lower portion of which was enveloped in a sclerous exudate. Seminal vesiculotomy was done, the sclerous exudate cut through, and the sac freed from the adhesions and freely incised. The painful sensations quickly left the joint after the operation and were followed more slowly and gradually by a resolution of the hard exudate. With the disappearance of the exudate the joint motion had gradually returned. Now the patient walked about without pain and with much movement in the joint; this movement was increasing rapidly.

Dr. Martin W. Ware said that Dr. Fuller did not state that these cases were cured, but somewhat relieved. He asked how one could expect these gonorrheal cases of rheumatism, which appeared to be hopelessly ankylosed, to come around and limber up. If there was an infection from the seminal vesicles he asked how they were to exclude the possible fact of the prostate being involved as well. He also asked what were the real indications for advising patients to undergo such a formidable operation.

Dr. Eugene Fuller replied that patients with gonorrheal rheumatism would not stand massage, but after vesiculotomy massage improved their condition very much. The operation was devoid of danger when properly done and in trained hands. He cautioned against cutting into tuberculous vesicles. It was very hard to get smears in these cases. The genitourinary symptoms disappeared, as a rule, and so they consulted other specialists, went to spas, etc.

Infected Compound Fracture of the Tibia Treated with Intracanalicular Aluminum Splint.—Dr. W. H. Luckett presented this case. This patient sustained a fracture of both tibia and fibula, and of the thigh at the junction of the middle and lower thirds, all on the same side, as well as other injuries. One month later the ends of the tibia were found to be necrotic, and much pus was evacuated; pus was gotten with a six-inch scoop. He wanted to amputate the limb, but the patient refused. The temperature was 102°. The intracanalicular aluminum splint was applied, such as devised by Dr. Elsberg, and the patient went on to a good recovery. This splint extended up so as to include the fractured thigh. The wound healed with an adherent scar, in the center of which was a small sinus which was still discharging pus. It was his opinion that the aluminum tubes will have to be removed. He presented this case to show what ultra-conservative surgery was capable of accomplishing.

Dr. John J. Moorhead, who also had seen the patient at the time of injury, considered the case particularly bad because of the complicating fracture of the thigh on the same side. The outcome was very satisfactory.

Dr. Martin W. Ware presented an aluminum splint that had been removed from a patient; it had been in place three or four weeks and had been inserted because of non-union. The interior of the splint contained organized tissue and some marrow cells and granulation tissue. After four weeks the wound healed, and yet there was a sinus that discharged pus. There was a great deal of plastic material about the periosteum.

Dr. Joseph Wiener presented an aluminum splint. He saw a patient after a heavy beam had fallen on his leg, resulting in a compound fracture of both bones. His temperature was from 102° to 104°, and he had lost forty pounds in weight. His pulse was from 110 to 120. The patient looked as though he was doomed. Amputation was advised against. The suppuration was very marked and

ran above the knee. He lost almost the entire skin of the leg from the ankle to the knee on the inner aspect. Pus burrowed between the muscles. A large amount of the tibia was necrotic, and it was impossible to remove all the diseased bone. Enough of the diseased ends of the bone was removed to enable him to bring them together and fasten with silver wire. The intracanalicular aluminum splint was introduced. This was about as desperate a case as one had to deal with. Abscesses developed and extended up to Scarpa's triangle; abscesses developed between the muscles; there was an enormous denuded area, in the center of which a bone sinus discharged pus. Grafting was impossible because of that. The leg was swung in a cradle, and the bone sinus packed with iodoform gauze, which was frequently changed. Small grafts were applied and they all took. The bone sinus persisted. Six months after the original operation he found the internal and external surface of the tibia had been replaced with a firm callus, and the splint was presenting in the wound. He chiseled through the aluminum splint, and so was able to get the pieces out. The medullary canal was cleaned out and filled with a spermaceti mixture. It required three weeks for the wound to heal. To-day the patient was absolutely well, and the limb supported a weight of 200 pounds. He was able to stand on the affected leg without support.

Dr. Charles A. Elsberg said that he was very much gratified at the way the splint had been taken up by his colleagues. His method had not yet been published, as he was waiting for more cases, and wished a wider and larger experience before writing of the advantages and disadvantages of the aluminum splint. The splint was of value in infected cases, because it formed an aluminum hydrate in the body, and this was an antiseptic. Therefore, the splint was capable of sterilizing itself.

Dr. W. H. Luckett closed the discussion.

Disappearance of a Recurrent Round-Celled Sarcoma with Metastases After Two and a Half Months' Treatment with the Mixed Toxins.—Dr. Wm. B. Coley presented a patient, 27 years old, always in good health, with family history good, and with no history of injury. The patient first noticed a tumor in the lower lumbar region in September, 1907; it grew with great rapidity and was operated upon in the latter part of September by Dr. J. C. Biddle, of Fountain Springs, Pa. The tumor then was the size of the two fists. The pathological examination of the growth was made by Dr. John Funke of the Jefferson Medical College Hospital, who pronounced it to be a large round-celled sarcoma. On November 19, 1907, the patient was admitted to the General Memorial Hospital. Examination showed an unhealed wound in the lumbar and gluteal region, 6x8 inches in area, the unhealed portion being the shape of an excavation about one inch lower than the surface of the surrounding tissue. The lower jaw showed a tumor beginning about one inch to the left of the symphysis, extending to the left nearly to the angle of the jaw, the growth seemingly occupying the entire thickness of the jaw. The patient was at once put upon the mixed toxins, ¼ mg. being the initial dose given in the gluteal region. This was gradually increased until a temperature of 102°-103° was obtained. Under these systemic injections the tumor of the jaw slowly became smaller and much softer. As it became fluctuating, he made an incision over the protuberant part and found a highly vascular tumor extending down to the periosteum. The patient's general condition slowly began to improve under the treatment. At the present time the patient had gained sixteen pounds in weight, and there was no longer any evidence of a tumor either in the jaw or the lumbar region. The wound had entirely healed. He had had altogether forty-nine injections of the toxins, beginning with ¼ mg. and increasing to 8 mg. All but five injections were systemic into the buttocks.

Large Incarcerated Femoral Hernia, Containing Intestine and Suppurating Fallopian Tube.—Dr. Wm. B. Coley presented a woman who had had a hernia for several years. In view of the fact that she had had several attacks of almost complete obstruction, it was thought wise to perform an operation. On opening the sac, to which the entire contents were firmly adherent, the sigmoid flexure, descending and part of the transverse colon, and a large loop of small intestine were found, all glued together with firm adhesions. After separating these adhesions, a hard mass was found near the neck of the sac, which proved to be the Fallopian tube: the tube was found to be necrotic near the neck of the sac; an abscess was opened which connected with the pelvis. From this nearly a pint of pus was evacuated. After working nearly an hour he was able to reduce the hernial contents into the left iliac fossa. No attempt was made to close the femoral ring, which was packed with gauze, and the abscess cavities were drained by two rubber tubes. Although little hope was entertained that the patient would stand the shock of the operation, she made an uninterrupted recovery, and, aside from a slight bulging in the femoral canal, was now in good health.

Dr. Herman A. Haubold said that he had had a case of three months' standing of sarcoma of the extensor vagina femoris, which was as large as a cantaloupe; it was excised freely and widely, but without avail. At once he began the use of Coley's toxins; the patient was treated persistently with the mixed toxins, and at the end of eight months the sarcoma recurred at the original site of the lesion.

Dr. Charles Goodman reported a case of polyp of the rectum, a section of which was referred to the pathologist, who reported it to be undoubtedly sarcoma. Radical operation was recommended, but refused. He left the hospital. One year later he returned and stated that he had had some operation performed and the entire mass had been removed. He now had a large mass filling the sigmoid and rectum and he was losing large quantities of blood. A laparotomy was performed and he found the pelvic and the retroperitoneal glands involved, and so closed the wound. The patient was then referred to Dr. Coley. He was admitted to the General Memorial Hospital and received the mixed toxins. Some weeks later the mass showed a certain amount of shrinkage. The injections caused him so much pain that he refused to submit to further treatment. In another case the mixed toxins were used as a prophylactic measure. The sarcoma involved the upper part of the humerus and the shoulder joint. The man was 18 years old. He had thirty injections of 3 mg. each. This patient improved very much and gained fifteen pounds in weight and felt much better than he had in many months. It was hard to say just how much Coley's fluid had done for this patient, but Dr. Goodman said he was inclined to credit the toxins with a certain amount of benefit.

Dr. John Rogers said there was a place where criticism became a therapeutic nihilism. Because one man could not cure a case, did not mean that the treatment should be discarded. Any man afflicted with sarcoma would stick to the mixed toxins until the last gasp. He said it was very foolish to say Coley's mixed toxins were of no value.

Dr. Wm. B. Coley said that the cases treated with his mixed toxins were only those that were regarded as hopeless cases; the fact that so many cases had been saved seemed to him to make it worth while to use the method rather than to give it up.

Intestinal Obstruction Caused by Trauma.—Dr. A. V. Moschcowitz said that the child he presented had been referred to him September 3, 1907. About eight weeks prior to this, while playing upon the street, she was run over by a wagon; so far as could be learned, it passed over her abdomen. She was immediately taken to the

hospital; operation was advised, but refused. The mother then took her home. On the day following the family physician was called in. The child appeared well for two weeks, when she began to vomit, and complained of occasional and cramp-like pains in the abdomen, and became constipated. Because she could take no nourishment she became emaciated. This lasted six weeks when Dr. Moschcowitz saw her. The abdomen was so thin that violent and active peristalsis could be readily seen. She was taken to the Mt. Sinai Hospital and operated on. There was an intestinal obstruction. There was found an extremely dilated small intestine, the walls of which were very thin, and there was a mass of thickening between this enlarged small intestine and the intestine leading from it, causing a constriction which produced the obstruction. This necessitated a side-to-side anastomosis with a Murphy's button. This button did not pass and could be felt in the right iliac fossa. Otherwise the child was perfectly well and was discharged from the hospital. On September 3 she was operated on and was kept under weekly observations until November 2. Two weeks after her discharge she complained of pain from time to time and violent cramp-like pains in the abdomen. The button was felt in the cul-de-sac of Douglas. It was the retention of the button that caused these symptoms, and the mother consented to operation. The child was readmitted January 5 and operated on next day. This button was found to be perfectly loose in the dilated portion of the small intestine. The bowel had become shrunken. Over the intestine which had been anastomosed there was a triangular space about three inches long, with absolutely no mesentery, not even a trace. The Murphy button was removed through an incision made in the intestine, and then the omentum was sutured in such a way as to wrap it up; this would make it viable for a long time.

Dr. John Rogers asked what Dr. Moschcowitz's interpretation of the injury was.

Dr. Moschcowitz said that the wagon wheels passing over the abdomen crushed the coats of the intestine, so that their tone was lost, and made the intestine less resistant to pressure from the fecal contents; this permitted the dilatation to take place.

Case of Tuberculous Lymph Nodes.—Dr. Charles N. Dowd presented a case of lymph node tuberculosis where large masses of these nodes had been removed through a transverse incision.

Technique of Early Operation for Tuberculous Cervical Lymph Nodes.—Dr. Charles N. Dowd read this paper. He said that the effort to produce thoroughness in this operation had frequently led to an utter disregard of the scars which were produced; in certain advanced cases this disregard was to be advocated; in other instances, however, a scar-saving operation was compatible with thoroughness. The infection in about 85 per cent. of the cases, as they appeared in New York, first involved the subparotid group of lymph nodes, the nodes that formed the first barrier to the spread of the infection from the pharynx and tonsillar region; it was usually confined to this group or its vicinity for several months. He showed plates giving the details for a radical operation for the removal of the infected nodes during this period through a transverse incision, which was made about an inch below the angle of the jaw, and which was placed either in or parallel to a neck crease, and which was followed by a very slight scar. The plates indicated an exploration of the node containing area from the mastoid nearly to the clavicle. He reported on sixty-seven of these early cases. All recovered from the operation within a reasonably short time. There was only one disturbing complication. A secondary hemorrhage from the internal jugular vein on the ninth day. This was followed by recovery after ligature of the vein. All but fifteen of these cases had been followed for periods from a few months to four years. There were only four recurrences. The appearance of these cases as they had been examined at various periods after operation had been almost uniform. They usually presented a few quiescent pea-sized nodes in the posterior chains, which were hyperplastic, not tuberculous. Among these sixty-seven patients there were three who had filbert-sized nodes, which might be regarded as recurrences. In the fourth one a discharging sinus appeared in the wound area; this closed spontaneously. He also had a node removed from the parotid gland by operation. There, no doubt, would be some other recurrences among these sixty-seven cases, but the present report of only four recurrences was surely very encouraging. There were of all Dr. Dowd's cases, extensive and otherwise, 256, and there was but one death, following operation, in the entire number, from secondary hemorrhage from the internal jugular vein, ten days after operation. These cases had been followed for long periods, varying from twelve years down. They bore out the indication of the report made in 1905 of between 75 and 80 per cent. apparent cures, and in many other cases the patients would probaby be found to be cured after further observation.

Dr. H. A. Haubold discussed this paper.

Primary Cancer of the Appendix.—Dr. Clarence A. McWilliams read this paper. The rarity of this condition rendered the report of the following case interesting. An immigrant girl, 20 years old, was brought directly to the Presbyterian Hospital from the steamer, September 5, 1907. Save for seasickness, she had been well up to two days prior to landing. Then she was taken with severe pain in the right side of the abdomen. She had never been ill before in her life. She had fever and was markedly prostrated. The right lower quadrant of the abdomen became very tender to the touch. Her temperature was 101° and pulse 100. The leucocyte count was 23,000 and the polymorphonuclears 88 per cent. She was well nourished and showed no signs of cachexia. Heart and lungs were normal. The abdomen was distended and there were no respiratory abdominal movements. The whole right lower quadrant was rigid and very tender and at McBurney's point was felt a mass the size of a lemon. Over this mass there was tympany, but there were no signs of free fluid in the abdomen. At operation the inserted finger pushed aside an adherent coil of intestine, which opened an abscess, well walled in, containing about two ounces of fetid, thick, creamy pus. After sponging this dry, the appendix was found hanging over the brim of the pelvis, to whose walls it was adherent. It was four inches long and as large as the finger. The serosa was congested, and about one inch from the base was a gangrenous patch, in the center of which was a small perforation. The appendix was amputated. The girl left the hospital on the thirteenth day. At the time of the operation there was no suspicion that the appendix was cancerous. The pathological report was that it was a carcinoma of the appendix, polyhedral cell type. Also an acute appendicitis. In 1906 Rolleston published a paper containing all the cases which had been reported up to 1906, 42 in all, all doubtful cases having been thrown out. Dr. McWilliams said he had found 49 cases in addition to the 42 of Rolleston, making a total of 91 undoubted cases in all. Of the 91 cases, 23, or 36.5 per cent., were operated upon during or immediately after the first acute attack of appendicitis, while 40, or 63 per cent., had had symptoms of chronic appendicitis in some form for varying periods of time. In over 50 per cent. of the chronic cases the symptoms had lasted for a year or more. In eight cases the appendices, which were found later to be cancerous, were removed in operations performed for other pathological lesions in the female pelvic organs. In two cases cancerous appendices were found to be responsible for persistent iliac sinuses. Ten primary cancerous appendices were found at autopsy. In none of Dr.

McWilliams' 49 cases was a diagnosis of cancer of the appendix made before operation. The average age of all the patients was 29 years; 63 per cent. of all the cases occurred before the age of 30. With regard to sex, 58 per cent. occurred in women and 42 per cent. in men. Enlarged lymphatic glands were present in only six out of the 91 cases. In only five cases of the 91 were concretions found in the appendix. The tumor was situated at the tip of the appendix in 42 cases, or 57 per cent.; in the middle in 10 cases, or 13 per cent.; near the base in 11 cases, or 15 per cent. In 73 per cent. of the cases the cancers were situated at or distant to the middle. Naked eye appearances of the cancerous appendices were given in the records of 44 of his own 49 cases. The tumor was visible to the naked eye in 17 cases, or 38.6 per cent. of the whole. General columnar celled cancers were found in 18 cases out of 74, or 24 per cent., and the spheroidal celled type in 38 cases, or 51 per cent. The colloid cancer occurred only in three cases. In conclusion Dr. McWilliams said that these small cancers of the appendix were not *per se* to be diagnosticated. The symptoms were those of a simple appendicitis, usually of the chronic recurrent type. Its age incidence corresponded to that of ordinary simple appendicitis. It probably occurred in about one-half of 1 per cent. of all cases of appendicitis, and this fact would more surely cause them to advise appendectomy. For the seemingly good prognosis of appendix cancer was more apparent than real, for histologically it had an outspokenly malignant character, with a tendency to involve the mesoappendix and the cecum. Whether the cancer was the primary lesion and the appendicitis the secondary, or *vice versa,* from the patient's standpoint, made absolutely no difference. The main thing for him was to be rid of his cancerous appendix as early as possible. Such an appendix cancer would almost always be discovered only by an operation. Benign tumors of the appendix were very rare; hence any circumscribed appendix tumor always should make one suspicious of cancer. He thought, perhaps, it would be better to remove the entire mesoappendix habitually in all operations for appendicitis, as this did not increase the risk of the operation. This would seem advisable, since these tumors had a tendency to involve the mesoappendix even when they were very small. Every removed appendix should be carefully examined microscopically.

Dr. Charles N. Dowd called attention to the necessity of looking for this condition continually, and that the rule should be made of having all these appendices examined.

Dr. H. A. Haubold said that the admonition should be given to all to have these appendices examined in all cases.

A New Surgical Electric Motor.—Dr. W. Sohier Bryant presented this electric novelty, which was used for bone surgery. It could be held in one hand and would drive a fraise with great rapidity and efficiency, and was sterilizable. It was an induction motor, 3-10 horsepower, 3-phase, 10 volts, 1,500 revolutions per minute, 185 cycles, 2 poles; weight, 7 pounds. The fraise used had but one cutting edge.

SECTION ON PEDIATRICS.

Stated Meeting, Held February 13, 1908.

Dr. Eli Long, Chairman Pro Tem.

A Case of Mongolian Idiocy.—Dr. Matthias Nicoll, Jr., exhibited a patient, nineteen months old, who presented a peculiar symptom complex, rendering the diagnosis somewhat uncertain. Both parents were in good health, and gave no history that would have any bearing on the case. The baby's weight at birth was six pounds, and the mother at once noticed the eyes to be somewhat prominent. The child was fed on the breast and was well nourished up to the sixth month, when she had an attack of cervical adenitis and erysipelas, keeping the baby ill for three months. Severe gastrointestinal disturbances accounted for a marked loss of flesh and loss of weight. When one year old the liver and spleen were found to be enlarged. Five weeks ago, when the baby was brought to the clinic, the tongue protruded and there were other signs of cretinism; but upon a more thorough examination this diagnosis was abandoned. There was a double glaucoma. The spleen was felt below the umbilicus, and the liver was below the free border of the ribs. The temperature varied from 96° to 103°, and the child weighed sixteen pounds. The anterior fontanelle was still open and she had eight good teeth. The hemoglobin was 63 per cent., the red cells 3,820,000, leucocytes 11,500. In the stains were found marked poikilocytosis, polychromatophilia, no nucleated reds. Dr. Ewing, who made the blood examination, thought the case tended to the type of pernicious anemia. It was, in his opinion, best to call it severe secondary (pernicious) anemia, and the cause would probably be found in the history of the severe gastrointestinal disturbances. So far as the mental symptoms were concerned they showed the characteristic mental deficiency. He believed the case to be one of Mongolian idiocy.

Dr. Henry Berg said that ten years ago he saw a case in which the liver was as large as in the patient presented; it was hard, had a very sharp border, and there was an enlarged spleen. There was an exophthalmos. He first noticed a blowing murmur, somewhat musical in character, over the apex; one year later, in the same situation, a loud blowing murmur was found. He diagnosed the exophthalmos as being due to the cardiac insufficiency, complicating a mitral lesion. The enlarged liver and spleen were probably congenital. This exophthalmos was accounted for as being one of the signs of congenital cardiac lesion.

The Indication for Stimulants in Pediatric Practice.—Dr. Sara Welt-Kakels read this paper. The promise of recovery from disease depended upon the relative integrity of the heart muscle and the prevention of cardiac impairment which threatened the child even more than the adult. This would be accomplished not so much by the giving of cardiac stimulants as by avoiding the depressing drugs, or those which might derange the stomach, producing flatulency which so seriously interfered with cardiac action. The aimless administration of cardiac stimulants was often productive of much harm. Alcohol she considered to be the best, or one of the best, cardiac stimulants; it had a nutritive value as well. In acute fevers, when the little patient became depressed and the pulse was compressible and soft, between 120 and 130, the so-called precritical stage, alcohol was required. In cases of sepsis alcohol might be used in large amounts without unpleasant effects. In cases of erysipelas with profound sepsis in the infant, generous doses of alcohol and camphor were required. In the profound sepsis in children ill with diphtheria it was almost impossible to give too much alcohol. Kerley had mentioned a child of fourteen months, ill with diphtheria, taking four ounces of brandy in twenty-four hours. At the onset of cardiac weakness in acute fevers, digitalis, strophanthus or strychnine was indicated. The cumulative effect of digitalis was more prone to occur in children than in adults. This drug should not be used indiscriminately. When signs of failing compensation occurred, this drug should be given in comparatively large doses until its effect was noticed. In children with congenital cardiac lesions, such as communicating ventricles, digitalis might prove dangerous. To restore the circulation in certain cases, when pharmacotherapy failed, venesection and hypodermoclysis might be resorted to. Venesection was again gaining in favor, but more especially in the older children. Opening the vein in the very young child was

a very difficult procedure. Hypodermoclysis rendered the toxins circulating in the blood less effective and it supplied water that was needed to the system. It also raised arterial tension, stimulated the action of the kidneys and was excellent as a life saving measure.

The Use of Analgesics in Pediatric Practice.—Dr. Le Grand Kerr of Brooklyn read this paper. He summarized as follows: (1) They were all more or less transient in their effect, except in the case of a very few of the weakest ones. (2) They were all more or less objectionable, (*a*) because of the liability to the formation of the drug habit; (*b*) because of the irreparable damage done to a developing nervous system when their use was prolonged; (*c*) because of the dangers of overdosage (by accumulation); (*d*) because of the irritant effect which most of them possessed.

There were some well-defined rules in their administration, as follows: (1) They must be given only when absolutely necessary and after a careful consideration of the relief which might be obtained by their external and local rather than their internal administration. (2) They should not be given at a time or in such a manner as to obscure the diagnosis. (3) The cause of the pain must be removed whenever possible before the internal administration of an analgesic. (4) The dose should be very small at first and for three reasons: (*a*) The child might be susceptible to the drug used. (*b*) Relief might be obtained by the first dose and relief from pain in a child once established tended to continue. (4) The opportunity was offered for an increase in the dose later on if the demand arose. (5) Any one agent must not be used for a long time, but a change must be made from time to time to avoid tolerance and habit. (6) The dose should be small and frequently repeated instead of an initial large dose.

The Place of Hydrotherapy in Pediatric Practice.—Dr. Frederick K. W. Grosse presented this paper. After quoting the conclusions of Hecht who in 1907 reported his results of bathing children ill with measles in half baths of 68° twelve minutes without friction, and reported the temperature readings, he said that Hecht had concluded that the physical regulation of the heat in the child was indifferent. Rubner had shown that the surface of the child was in inverse proportion to its weight; therefore, the relative larger surface made the bath more pronounced. He believed it was wrong to apply low degrees in childhood, and Hecht's 68° was extreme. The child's bath should be 10° or 15° warmer than in a corresponding condition in the adult. The duration of its application should be as short as possible, without spoiling the result. With regard to the question of hardening, Kneipp recommended submersion in water of 60° for a few seconds up to one minute; but Hecker showed that nervousness, restless sleep, anemia, catarrhs, etc., could be found in children who were presumed to be hardened. In disease the practitioner might avail himself of either the rub, the bath, the wet pack, or cold compresses. According to the age a sponge was used, a linen mitten, or a rougher material, to give the rub or friction. There were no contraindications to rub in measles or scarlet fever; in the severer diseases, as infantile palsy, typhus, epidemic meningitis, acute rheumatism, etc., the treatment was given between other applications. The half bath was used, and was permitted with friction. The more virulent the infection, the more vigorous the friction. The younger the child the shorter the bath. The hot full bath of 107° was of value in collapse, to promote the appearance of rashes, and in cerebrospinal meningitis. The wet pack was of value in cases of measles, scarlet fever, bronchitis, and bronchopneumonia. In acute rhinitis and all forms of cough, the Bälz bath was a sovereign remedy. This bath was also efficacious in nephritis. Cramps of any origin, and many other conditions, offered a thankful field for this hydrotherapy.

The Principles of the Climatic Treatment of Children.—Dr. F. L. Wachenheim read this paper, and considered the temperature, the various phases of atmospheric moisture, and the pressure of the air, the last being chiefly modified by elevation above the sea level. In applying physical therapeutics of all kinds, including climate, there were training or developing the diseased body by exercise, and aiding the restorative powers of nature through reduced functional activity, or a rest cure. The former was indicated when there was impaired function of development: the latter when the body was overstrained and unable to cope with the work that normally fell to it. The climatic rest cures were especially indicated in such affections as nephritis and uncompensated cardiac lesions. Temperatures above the indifferent point were not at all restful. Young children bore cold climates poorly. Rain was useful in moderation, as was a winter sheet of snow, laying the dust, but alterations of frost and snow were objectionable. The relative low humidity was extremely valuable in lowering the sensible temperature or raising the indifferent temperature for such cases as called for a free transpiration; here a warm and moist climate was indicated as being the best diaphoretic known. High altitudes were admirable as a general tonic in torpid states, but was contraindicated in severe organic diseases, when rest was the indication. The anemias of young children did best at moderate elevations, and the same was true in victims of general malnutrition, rickets, scrofulosis, and chronic tuberculosis.

Dr. Herman F. L. Ziegel said that he had spent nearly one year in Southern California, and had been impressed with the fact that measles, diphtheria, and scarlet fever were seldom of septic types, and seldom were followed by complications. Measles was not more thought of there than was chickenpox here. They had what was called "all the year round" climate. It meant that the temperature in winter was about ten degrees lower than the summer temperature. Bronchopneumonia was a very mild disease and, as a rule, without complications. Recurrent attacks of tonsilitis in children with rheumatic pains were rarely seen in children in Southern California. In closing he said he would like to know what altitude caused anemia in some cases, while it cured in others.

Dr. F. L. Wachenheim said that people living in Denver had 7,000,000 erythrocytes; therefore, if persons went from a lower altitude with but 5,000,000 red cells, they would suffer from anemia, and this anemia resembled the anemias following severe hemorrhages. People going to Denver suffered at first a relative anemia because when they should have 7,000,000 for this altitude, they only had 5,000,000. However, after a week's stay there, one no longer suffered from anemia. There were certain anemias—chlorosis, for instance, that were benefited at Denver's altitude—but this was not true of the secondary anemias in children.

Dr. Henry W. Berg said that venesection in children was very dangerous and for several reasons. It was a difficult matter to find the veins in these young children. Children stood the loss of blood badly. The so-called coal-tar preparations he believed to be particularly contraindicated in children.

Dr. Henry Dwight Chapin said that antipyrin was one of the most efficacious drugs they had in the treatment of whooping-cough, but it should be given with care.

Dr. B. Van D. Hedges of Plainfield, N. J., recalled a very desperate case of diphtheria in which he ordered thirty drops of brandy to be given every two hours; but the nurse, anticipating the custom of Dr. O'Dwyer, in whose service the case occurred, administered tablespoonful doses instead and with marked improvement. These were the days before the serum treatment of diphtheria.

Dr. Frederick K. W. Grosse said he had used no stimulant except alcohol in his practice, extending over fifteen years. The increase in the number of erythrocytes from

5,000,000 to 7,000,000 in a short time was not so easy of explanation as Dr. Wachenheim had inferred. Hydrotherapy produced the same results. He emphasized the importance of the blood distribution; the blood was not circulating equally in the body; it was stagnant here, and might be diluted elsewhere. This change in the distribution of the blood was shown in the active hyperemia during digestion and the consequent anemia in other parts of the body; therefore, the so-called anemia must be due to an unequal distribution of the blood in the body.

Dr. Henry Heiman emphasized rest in bed for those patients who were given digitalis. Morphine, digitalis, and salol were in his hands of paramount importance, and he had never had an untoward effect from their use. The administration of the coal tar products to children was not devoid of danger, and these patients should be watched with care; too large doses should not be given. Children had idiosyncrasies with opium as they had with the coal-tar preparations and analgesics. These were only antipyretics and analgesics. Hydrotherapy in children was of value; in the sthenic and strong children the cold baths were better borne than in the weaklings and acted as a stimulant; but in the asthenic type of cases the warm baths were to be preferred.

Dr. F. L. Wachenheim asked Dr. Grosse to explain how in the course of a few weeks the blood would show an increase of 3,000,000 erythrocytes, three-eighths of the total amount of red cells in the blood, when an individual went to Leadville. Did he mean to say that three-eighths of the total number of red cells were stored away in the body somewhere? In an individual of average weight there was twelve pounds of blood, and a large proportion of these erythrocytes made up the mass. Where could such a large proportion be stored? In Denver every healthy man had 7,000,000 erythrocytes; while with the cold water treatment there was but a difference of 500,000 at the most.

Dr. Sara Welt-Kakels said that antipyrin could be used with great benefit in whooping-cough, but it should be given in small doses in order to avoid the consequent cardiac depression. Venesection was an old method of treatment which, she believed, was coming into vogue again, although there was not much danger of the laity becoming very enthusiastic over it. Combe and other authorities had recommended venesection in certain cases. Most authorities, however, agreed that children would not stand the loss of blood very well.

Dr. Herman F. L. Ziegel said that the late Dr. Solly of Denver had proven that people coming to Denver from a low altitude became anemic with a reduced hemoglobin index in a short time. In some cases, however, altitude had a beneficial effect upon the anemias.

Dr. F. L. Wachenheim said that the observations made upon the inhabitants in the Alps showed that they had a red cell count of 8,000,000; while the inhabitants in the valleys had but 5,000,000. The number of red cells increased with elevation. An average healthy individual who ascended from a low level to 16,000 feet would have symptoms of anemia at once, such as dizziness, faintness, collapse, etc., but in the course of time the blood would get its recuperative powers and catch up.

Accidents of Decompression in Divers.—Stef. Zografidi has made a study of the accidents that happen among divers for sponges in the Mediterranean Sea on the north coast of Africa. There are three forms, a slight passing form of disease, an acute form which is frequent, and a sudden and severe form which results in immediate death. The main symptoms are intense pains throughout the body due to stretching and tearing of nerves by gas emboli; disturbances of sight and hearing, due to air bubbles in the cerebral circulation; and complete paraplegia due to congestion and hemorrhage of the spinal cord, followed by myelitis. When decompression is rapid the air that has been forced into the circulation is liberated and causes all these symptoms.—*Révue de Médecine.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 14, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	434	191
Diphtheria	322	55
Measles	1643	27
Scarlet Fever	942	44
Smallpox	1	—
Varicella	187	—
Typhoid Fever	37	9
Whooping Cough	20	2
Cerebrospinal Meningitis	12	12
Malarial Fever	—	—
Totals	3598	340

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending March 13, 1908:

SMALL POX—UNITED STATES

			CASES.	DEATHS.
California,	Berkley	Feb. 8–15	1	..
	Los Angeles	Feb. 15–22	11	..
	San Francisco	Feb. 8–22	11	..
District of Columbia,	Washington	Feb. 22–29	2	..
Illinois,	Springfield	Feb. 20–27	3	..
Indiana,	Indianapolis	Feb. 22–Mar. 1	3	.
	La Fayette	Feb. 23–Mar. 2	1	..
	Muncie	Feb. 22–29	1	..
	South Bend	Feb. 22–29	1	..
Iowa,	Ottumwa	Feb. 22–29	2	..
Kansas,	Kansas City	Feb. 22–29	11	..
Kentucky,	Covington	Feb. 22–29	4	..
Louisiana,	New Orleans	Feb. 22–29	13	11 Impt'd
Massachusetts,	Fall River	Jan. 4–11	1	..
Michigan,	Saginaw	Feb. 15–22	6	..
Missouri,	Kansas City	Feb. 15–29	20	..
	St. Joseph	Feb. 15–22	17	..
Montana,	Butte	Feb. 18–25	1	..
New York,	Buffalo	Feb. 22–29	1	..
Ohio,	Cincinnati	Feb. 22–28	25	..
	Toledo	Feb. 15–22	2	..
Tennessee,	Knoxville	Feb. 22–29	8	..
	Nashville	Feb. 22–29	8	..
Texas,	San Antonio	Feb. 8–22	6	..
Washington,	Spokane	Feb. 15–22	14	..
Wisconsin,	La Crosse	Feb. 22–29	9	..
	Manitowoc	Feb. 15–22	1	..

SMALLPOX—FOREIGN.

China,	Amoy	Jan. 4–25	..	Present
	Hongkong	Jan. 11–25	37	33
India,	Bombay	Jan. 28–Feb. 4	..	8
	Calcutta	Jan. 11–18	..	8
Italy,	General	Feb. 6–13	117	..
Japan,	Nagasaki	Feb. 6	2	..
	Tokyo	Feb. 12	300	..
	Yokahama	Dec. 28–Feb. 12	197	63

YELLOW FEVER.

Barbados,	Bridgetown and vicinity	Jan. 29–Feb. 18	4	2
Cuba,	Santa Clara	Feb. 28	.	1
Venezuela,	Ciudad Bolivar	Feb. 26	..	1

CHOLERA—INSULAR.

Philippine Islands,	Manila	Jan. 11–Feb. 1	127	106
	Zambales Province	To Feb. 1	158	108

CHOLERA—FOREIGN.

India,	Calcutta	Jan. 11–18	.	27
	Madras	Jan. 25–31	.	7
	Rangoon	Jan. 18–25	.	3

PLAGUE—FOREIGN.

China,	Hongkong	Jan. 11–18	4	4
India,	Bombay	Jan. 28–Feb. 4	..	35
	Calcutta	Jan. 11–25	..	13
	Rangoon	Jan. 18–25	..	6
Peru,	Catacaos	Jan. 23	8	6
	Chepen	Jan. 23	2	1
	Lambayaque	Jan. 23	2	3
	Lima	Jan. 23	5	3
	Paita	Jan. 23	2	1
	San Petro	Jan. 23	1	1
	Trujillo	Jan. 23	18	5

Ship's Nurses.—One of the great transatlantic steamship lines has added trained nurses to the medical personnel of its vessels. This opens a sea career for the trained nurse. Undoubtedly other lines will do the same, and the nurse will become as indispensable an adjunct to the first-class passenger vessels as the ship's doctor.—*New York State Journal of Medicine.*

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Original Articles.

GRAVE CHOREA AND ITS RELATION TO SEPTICEMIA.*

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IT is my purpose in this paper to call attention to a grave form of chorea which I have had occasion to study of late years, more particularly in my service at Mount Sinai Hospital. The subject has excited my interest not only because of the rarity of the condition but chiefly because cases of this description can be almost instantly recognized as the expression of a severe general infection, and, furthermore, because the study of them throws considerable light upon the nature of all choreic disturbances. I disclaim at the outset every intention of establishing a new type of chorea.

Like epilepsy, chorea has become a generic term. The former may be the expression of injury to the brain, of inflammation in or near the cortex, of some intracranial neoplasm, and, for want of better knowledge, some of the cases of epilepsy are still ranked as idiopathic, but the number of these is growing smaller and smaller from day to day. In similar fashion we are still compelled to speak, in some instances, of idiopathic functional chorea, but there is little doubt that we shall soon be able to remove many, if not all, of these cases from the category of purely functional conditions. In other instances, the chorea may be dependent upon organic changes in the brain. This is unquestionably true of post-hemiplegic chorea in children or in adults. In still other cases chorea is the expression of a serious infection exerting its virulence chiefly upon the central nervous system. While septicaemic chorea is to engage our attention for the present, it will not do to generalize from these few cases and to infer, as a recent writer has done, that chorea—meaning chorea minor—is an infection "pure and simple." This position is untenable. We may admit that some cases of St. Vitus' dance may be of microbic origin. There is no more justice in claiming an infectious origin for all cases of chorea than there would be in claiming such for all cases of jaundice, although we know that jaundice occasionally accompanies a general pyemic infestion.

Infectious chorea is not a new subject. So long ago as 1872 Pianese claimed to have isolated a diplococcus and a diplobacillus from the cervical cord and the cerebellum of a patient who had died of St. Vitus' dance, and by inoculating cultures of these microorganisms into animals he claims to have produced chorea in them. The animals died "with muscular twitchings and convulsions," but whether this was actually a choreic disorder in any sense is open to discussion. The findings and the experiments of Pianese have not been substantiated by later observers. In 1894 Dana wrote a paper on the "Microbic Origin of Chorea." The patient was 34 years of age at the time of death. He had his first attack of chorea at 14 and had repeated attacks after that. The post-mortem findings included a chronic leptomeningitis of the convexity of the brain, hyaline bodies in the brain cortex, slight meningitis of the upper part of the spinal cord, and slight meningoencephalitis. Diplococci were found in the proliferating tissue between the meninges and the brain. Other authors have found staphylococci and streptococci in the blood of the heart of choreic patients, and a Russian, Preobajenski,* was able to get cultures of streptococci from the blood, the viscera, and from different parts of the central nervous system in a patient who died of a choreic disorder.† Naunyn, in 1888, found parasitic microorganisms in the inflammatory deposits of the mitral valve and in the pia. Steinkopf found various forms of bacilli in the spleen, the heart and the brain of choreic individuals. Berry claims to have found Weichselbaum's bacillus in the cerebrospinal fluid in a case of chorea. A special kind of streptococcus was developed by Wasserman and Westphal (in 1899) from the blood of a severe form of chorea and the same organism introduced into living animals caused the appearance of an acute polyarthritis. Rachmaninow reported two fatal cases of chorea in girls about 12 years of age, evidently due to some general infection; but the bacteriological proff is wanting. Heubner was the only one who succeeded in developing streptococci and staphylococci from the blood of a choreic patient taken during life, and by inoculation produced a streptococcic septicemia in mice; by inoculating a rabbit he produced swelling of the lower joint of the leg. But the very best work of this description was done by Cramer and Toebben, who succeeded in proving the presence of Gram positive cocci in the blood taken from one of their patients during life, and these bacteria were unmistakably streptococci. This case of Cramer and Toebben's is remarkably like one of those which I shall report this evening. These last named authors and Heubner are the only ones who have previously been able to establish the presence of septic organisms in the blood of the living subject suffering from choreic disorder. If found post-mortem the presence of streptococci or staphylococci may be subject to a different interpretation.

We are only now beginning to get positive evi-

*Part of a presidential address delivered before the New York Neurological Society, February 4, 1908. (At the time of reading the paper the writer had entitled it "acute toxic chorea"; the title of the paper has been changed in order to avoid any misunderstanding as to the object the writer has in mind.)

*Quoted by Cramer and Többen.

†In speaking of choreic delirium, Moebius and Kraepelin refer to the probable infectious origin of the condition. The latter considers the infection similar to that of acute articular rheumatism.

dence of the existence of an infectious form of chorea, but the evidence upon which this doctrine rests is still so meager that I trust the presentation of this subject will tend to promote renewed interest in every form of chorea. The most important step to be taken in every case of severe chorea, at least from a diagnostic point of view, is to make repeated blood examinations so as to prove the presence or absence of bacteria in the blood of the patient during the earlier stages of the disease.

If pathological and bacteriological studies suggest the infectious origin of certain forms of chorea, the clinical symptoms point with ever greater force to the existence of a special, infectious type of choreic disturbance. The clinical features of such a condition may be briefly summarized as follows: Septicemic chorea may occur at any period of life, although most of the patients hitherto observed have been youthful persons. One of Cramer and Toebben's patients was only seven years of age, the other thirteen. My patients were fifteen, eighteen and twenty-two years old. After a somewhat indefinite prodromal period of restlessness and slight twitchings, universal choreic movements of an extravagant type set in, which constitute the most prominent symptom of the disease. The jactations are so severe that the patients have to be restrained or have to be carefully watched over in padded beds. Erosions appear all over the body and particularly on the parts most apt to be rubbed or bruised by contact with the bedclothes and the bed posts. The erosions are found chiefly on the buttocks, the elbows and ankles. Speech is difficult at an early stage of the disease and later becomes impossible. This is due in part to the extreme choreic movements of the lips, of the tongue, and of the muscles engaged in the mechanism of speech, also to the accompanying mental change which may vary from mild stupor and apathy to a condition of active delirium.* The movements are lessened during sleep, but sleep is fitful and, as a rule, can be induced only by large doses of hypnotics and sedatives. After a period varying from one to two weeks, the patient passes from the state of continued restlessness into stupor and coma. After a further period of a few weeks, death supervenes. But I would not claim that a fatal termination is inevitable.† High fever is observed from the beginning to the end of the disease. A universal erythema bearing all the marks of a toxic eruption occurs in the earlier stage.

The salient features of this condition were brought out most clearly in the following two cases:

Case I.—On January 8, 1906, a young woman, F. S., 22 years of age, was admitted to the service of Dr. Rudisch, at Mount Sinai Hospital. The family history was negative and of the patient's past history we could only ascertain that she had had typhoid fever at six years of age, that she had never had either rheumatism or measles, pneumonia, or any other serious illness. There was no history, above all, of any cardiac or nephritic disease, and no history of any syphilitic infection. Her habits had been moderate. There had been no history of trauma. She had been married four years and had one child two and one half years old. There was no history of hemorrhages. We were told that the patient had always been of a nervous temperament. For the last six months she had not been feeling well but did not complain of any definite symptoms. Six weeks before admission to the hospital she fainted while ironing. Five weeks previous to her admission, it is stated, she noticed in the morning that the fingers of her right hand became swollen and twitched. This passed off as the day advanced. She complained of pain and paresthesia in the left hand before this attack, and since then the twitching would continue for a few days, and then subside. Three weeks before she was admitted to the hospital she passed through an acute illness of sudden onset consisting of chills, fever, and vomiting with streaks of blood. She was in bed for about three days. As we discovered later on, there was good reason to think that this acute illness was due to some uterine treatment which she received, the infection having been brought about through these manipulations. From this time on the twitching had gradually extended up the arm to the elbow, the patient continuing to be up and about until four days before admission, when the entire left side of the body and the head began to twitch violently. The movements grew more and more extreme until at the time of admission the arm and leg were constantly making the wildest sort of excursions. Her chief complaints on admission were the extravagant movements of the upper and lower extremities as well as of the head. When the patient was first seen by the writer on January 18, she presented typical choreiform movements of her left upper and lower extremities. These movements were so extravagant that it was impossible to make a physical examination, the patient throwing herself about violently. At times she would fall asleep for half an hour, when the movements would cease, but then would awaken and the choreiform movements would recur in full force. Her temperature varied between 101° and 103°. She took nourishment well, although there was great difficulty in feeding her. At this time she was mildly delirious, speech very indistinct, she was extremely peevish and fretful, and totally unable to understand questions put to her, and to answer them. Her condition remained practically the same for several days. The jactations, however, became so violent that the patient had to be restrained so as to prevent her from doing injury to herself. Her respirations ranged between 25 and 40, pulse between 125 and 130. The movements became more and more violent until on the evening of January 20 the patient fell into a deep sleep from which, as the notes state, she could not be easily aroused. Phlebotomy was done and about one ounce of blood was obtained. Examination of her heart showed that there was some pericardial friction, and there was a systolic murmur at the apex transmitted into the axilla. There was also marked accentuation of the second pulmonic. The coma became more intense, there was involuntary defecation and urination, and the pupils were contracted. For the first twenty-four hours after this deep sleep had set in she could occasionally be aroused; after that it was impossible to make any impression upon her. She developed a large bedsore over the sacrum, and the excoriations on the hand and abdomen, all of which were due to constant motion in bed. During this time a number of blood examinations were made. The patient remained in a comatose condition for eight days, the temperature varying from 102° to 104°, until death ensued on January 28, 1906.

I am indebted to the Pathological Department for reports on the blood cultures and upon the results of the post-mortem examination:

Blood Cultures—First Blood Culture: January

*Some of the cases described as chorea insaniens, maniacal chorea (Finny), etc., may be long to this group; in others, mental changes were associated with chorea of the chronic degenerative type.

†Ewald and Witte have reported a case of acute severe chorea (with recovery) due in all probability to intestinal infection, or to toxemia of intestinal origin.

20, 1906, showed *Staphylococcus aureus*, about three colonies to every cubic centimeter; 12 c.c. of blood was used.

Second Blood Culture: January 23, 1906, showed *Staphylococcus aureus* on all plates, about two colonies to the c.c., and in one of the flasks there were present streptococci besides staphylococci; 10 c.c. of blood were used.

Third Blood Culture: January 27, 1906, on a number of media there were found streptococci and staphylococci. In this blood culture streptococci predominated. On one of the agar plates there were 11 colonies of streptococci, and only two colonies of *Staphylococcus aureus;* 9 c.c. of blood were used.

Post-Mortem Examination—The patient died January 28, 1906, 2.40 A. M. Autopsy (limited) performed 19 hours post mortem.

Body—Poorly nourished. Several dried up blebs on both upper and lower extremities. No edema. No icterus. Petechiæ on ocular conjunctiva of both eyes. Large bedsore over sacrum.

Lungs—Negative except for congestion and subpleural emphysema.

Heart—Pericardium negative. Myocardium reddish-brown in color. Right side of heart practically negative. Left ventricle somewhat dilated. Mitral valve found retracted and chordæ tendinæ somewhat thinned. Both surfaces of mitral valve near the free border are small, short cauliflower vegetations. There are present also a few on the chordæ. No vegetations on aortic valve.

Liver—Large, congested, fatty and parenchymatous degeneration. Gall-bladder and ducts negative.

Kidneys—Capsules very slightly adherent. Markings very poor. Evidences of parenchymatous degeneration.

Spleen—Small, hard, reddish-brown in color. One small recent hemorrhagic infarct.

Pancreas—Very firm, rather small.

Uterus—External os hemorrhagic. Healing laceration extending from right side of os into the fornix.

Microscopical Examination—Lungs: Acute congestion, small area of bronchopneumonia. Liver: Acute congestion, perivascular cell necrosis. Marked parenchymatous, slight fatty degeneration. Spleen: Perisplenitis. Chronic interstitial inflammation, acute congestion, acute splenitis. Kidney: Parenchymatous degeneration. Vaginal wall: Purulent inflammation on surface. Thrombi in veins. Cervix uteri: Purulent inflammation.

Cultures—In pus from bedsore streptococci and staphylococci were found, the cultures from blood of heart and spleen were negative.

Bacteriological spreads from the pus of bedsore showed staphylococci and streptococci and Gram positive and Gram negative bacilli. The cultures showed only *Staphylococcus albus* and no *Staphylococcus aureus* or streptococcus. Streptococci were found in spreads made from spleen, but cultures from spleen and heart blood were negative.

Dr. Libman has been good enough to give me his opinion of the findings: "Evidently there was at first a systemic invasion of the *Staphylococcus aureus* with an establishment of an acute endocarditis. The port of entry for the infection was at the laceration of the cervix. This invasion was receding when apparently there was a secondary invasion of streptococci from the bedsore. The first infection cannot be attributed to the bedsore, which did not exist at the time when the *Staphylococcus aureus* was first found in the blood. Streptococci were found in large numbers in the spreads at the post-mortem examination. The fact that organisms could not be cultivated from the heart blood at the time of the post-mortem examination is to be explained on the theory that most of the bacteria lost their vitality during the time that the body lay in the ice-box before the post-mortem was made."

Case II.—R. R., admitted November 14, 1907, a school girl, Russian, fifteen years of age. Family history was negative. There was no history of tuberculosis or syphilis obtainable. The mother had two miscarriages some years after the patient's birth, none before. From the personal history it is only necessary to state that the birth was normal. Three months after birth the patient developed sores on the head and neck, but on no other part of the body, neither on the palms nor on the soles of the feet. She had had croup at one and one-half years of age; measles at three years; diphtheria at ten years; no sequelæ excepting enlarged glands on the right side of the neck. When eight years of age patient had an attack of "brain fever" in Russia, which lasted one week, during which time she suffered from headache, fever, and vomiting. Ice bags were constantly applied to the head at that time. No paralysis followed this illness, nor did she have any ocular paralysis at that time. The girl was well until two years ago and was regular in her attendance at school. Since that period, however, she has been complaining of pains in the soles of both feet and in the calves of both legs. The upper extremities were not involved. She had occasional sore throat and tonsilitis. All these disorders would point to a rheumatic infection. For the past two years she has also been complaining of eye symptoms, of constant headache, dizziness, and of seeing red balls of fire before the eyes. Glasses were fitted for this condition at a Williamsburg Hospital, after which there was some slight improvement in the symptoms. One year ago the same symptoms returned and she again had her glasses changed. About a year ago, while reading, she suddenly complained of seeing balls of fire before her eyes. She ran to her mother who caught her just about as she was to fall. At that time her mother noticed that her mouth was drawn to the left. She uttered a moderately low cry as though frightened, did not bite her tongue, but was unconscious for one-half hour, after which she gradually recovered. There was no paralysis at that time and no similar attacks up to the present illness, although the family physician told the mother that such attacks might recur.

Twelve weeks before her admission to the hospital it was noticed that the patient twitched her left fingers and hand constantly. This twitching soon spread to the whole of the left upper extremity and about two weeks later the left lower extremity was affected in a like manner. These purposeless movements have gradually spread over the entire body including the head and neck. The patient was constantly making grimaces of all sorts. Up to four weeks ago she could talk with ease, but since then has been unable to talk or to feed herself. She has been fed on fluids by means of a feeding cup for the past four weeks. She understands everything spoken to her. She had no fever, no ear discharge, no cardiac or nephritic symptoms. On further questioning it was elicited that the patient had had a severe attack of sore throat one month before the onset of the present illness. Her menstruations have been regular but accompanied by excruciating pelvic and abdominal pains.

Examination made shortly after admission showed that she was a large, well nourished, well

developed girl. Has adenoid facies. Careful examination of the chest and abdomen was precluded by the constant throwing about of all the extremities, trunk and head. These movements were distinctly choreic in character and involved the muscles of both halves of the body equally. Patient understands and tries to obey such commands as to show the tongue, to close the eyes, etc., but is prevented from doing so properly by these uncontrollable movements. She cannot speak. Seems to hear well. Takes her nourishment with difficulty, although the act of swallowing seems unimpaired. There is no rigidity of the neck.

A few days after admission she developed a generalized scarlatiniform rash on face, ears, extensor surface of upper extremities, on chest, especially about the breasts, over the abdomen, over the knees and calves. This eruption is distinctly erythematous, the skin being very dry and warm. Dr. Lustgarten, who was asked to see the patient, made the diagnosis: toxic erythema. The pupils and ocular muscles were entirely normal. The lungs were negative and of the heart's action the note was made: "It was rapid, regular, and of good force; the first sound soft and barely audible; no murmurs. Pulses regular and equal." The condition of the deep reflexes could not be determined on account of the choreic movements.

The patient remained practically the same during her first week's stay in the hospital. The movements were temporarily controlled by hyoscin. There was some tenderness over the tip of the left mastoid, but Dr. Gruening, who was asked to see the patient, was of the opinion that there was no ear condition which could be held in any way responsible, either for the chorea or for the infection. A large abrasion had developed over the left elbow, and the temperature which since admission had varied between 101° and .04°, now rose to 106.8°. Repeated blood cultures were made and the results were entirely negative. From this time on the patient's condition remained practically the same. Under treatment the choreic movements became at times a little less intense but could not be well controlled by hyoscin or other drugs. On November 20 the choreic movements were distinctly lessened and the patient passed into a stuporous condition, from this into a state of coma with stertorous breathing, with high temperatures and with no further change in her condition until death ensued on November 27.

In this case the following reports were submitted by the Pathological Department:

First Blood Culture: November 15, 1907; 5 c.c. of blood were used; no bacteria were found.

Second Blood Culture: November 17, 1907; 15 c.c. of blood were used with a negative result.

Third Blood Culture: November 26, 1907; 15 c.c. of blood were used with a negative result.

The media in all these blood cultures consisted of glucose bouillon, both of these alone and with serum and glucose sugar and glucose serum agar. In the last blood culture all of the study was carried on anaërobically. The examination of the cerebrospinal fluid was negative.

Blood serum obtained by venesection just before death was inoculated into a rabbit by Dr. Strauss, 5 c.c. on one day and 8 c.c. on the following. No effect; rabbit lived two months. Second rabbit inoculated about the same time with cerebrospinal fluid obtained post mortem, 5 c.c. one day and 8 c.c. the following; intravenous injection, produced likewise no effect on the rabbit, it being still alive. Anaërobic cultures made of this cerebrospinal fluid show no growth.

The post mortem was made twenty-one hours after death, by Drs. Libman and I. Strauss. At that time a blood culture was made, using 2 c.c. of blood obtained from the heart. Streptococci were found in this culture. This streptococcus was found to be quite virulent for mice, and also for rabbits when inoculated intravenously. Joint changes were found only in the first animal inoculations. In that instance both knee-joints contained a moderate amount of clear fluid, all the joint surfaces showed no changes and cultures of the blood remained sterile. The streptococci differed culturally from the streptococci ordinarily encountered.

Dr. Strauss summarized conditions of the organs as follows:

Liver—Shows marked congestion and extensive parenchymatous degeneration with fatty infiltration.

Spleen—Shows very marked congestion and hemorrhage. No enlargement of Malpighian corpuscles.

Lungs—Marked congestion with hemorrhage into some of the alveoli.

Kidneys—Excessive congestion and acute nephritis.

Ovaries—Negative.

Heart—Verrucous endocarditis; slight evidence of parenchymatous change in the muscles and likewise one area of small round-cell infiltration found in one section, the infiltration being in the intermuscular fibrous tissue.

Brain—Section of post-central, precentral convolutions show degenerative changes in the ganglion cells, like those discovered as following upon acute toxic conditions. Similar changes are present in the Purkinje cells of the cerebellar cortex and in the anterior horn cells at different levels of the spinal cord. There is disappearance of the Nissl bodies, displacement of the nucleus in other cells, shrinkage of the nucleus, and in some total disappearance of the same. The contour of the cells is irregular, and in some instances cells appear to be swollen and stain diffusely.

Dr. Libman's summary is as follows: "The pathological changes in this case point to a marked general infection. There is a recent verrucous endocarditis, apparently due to bacteria that cannot be grown by ordinary culture methods. The streptococci found at the post-mortem examination must be looked upon as a post-mortem invasion, for the last blood culture taken only a few hours before death revealed no bacteria."

To these cases which have been given in full detail, a number of other fatal cases might be added from my own experience in hospital and private practice.

I might refer to a young girl of twelve, whom I saw about eighteen years ago, who had passed successfully through a number of severe attacks of chorea minor, but finally developed an attack with high, incessant choeric jactations, marked cardiac disturbance, ending, as I thought at that time, in death from exhaustion after a period of about two weeks.

Another case was that of a girl, R. B., eighteen years of age, who was admitted to my ward in the hospital, April 16, 1905, dying May 4, 1905. Her clinical symptoms were entirely like those of the two cases which I have detailed. She exhibited constant and universal choreic movements following upon what appeared to be an ordinary attack of chorea minor which was developed when she heard

the startling news that one of her brothers had been killed. She had never had St. Vitus' dance before this, and the movements after two weeks became so severe that she could not be controlled at home and sought admission to the hospital. She could not speak, although for a time she seemed to understand what was said to her. She gave assent when her name was mentioned, but beyond that we could not get any expression from her indicating that she was conscious of her environment. From April 20 on she began running irregular, remittent temperatures, suggesting the curve of a septic fever. She developed erythematous patches all over the body, but particularly in the face. She had to be fed through a cup or a tube. The choreic movements became more and more marked, until she passed from the condition of choreic restlessness into that of stupor and coma, and died about one month after the onset of the first choreic movements and eighteen days after her admission to the hospital. In this case no autopsy could be obtained.

It is useless, however, to increase the number of purely clinical histories. I prefer to base my conclusions upon the two cases with autopsy, and upon the bacteriological studies made in these cases. Reviewing this experience in an impartial spirit, the conclusion is inevitable that the grave chorea herein described was due in Case I to a general septicemia caused by the invasion of staphylococci, and in Case II to some organisms not yet determined. If we knew more about the elusive microbe of acute endocarditis we might have been able to shed more light on this case. The search for a single specific organism as the cause of chorea seems to me fruitless, and in view of what has already been discovered, entirely illogical. Some forms of chorea are evidently the expression of an acute general infection. There may be a number of different microbic agents giving rise to this condition, but it seems reasonable to suppose that certain bacteria have a special predilection for the motor neurons, while others exert their baneful influence over the sensory elements of the central and peripheral nervous system. Whether the infection be due directly to those microorganisms or to a toxin formed by them, it is not my province to decide. Other questions press for more immediate consideration.

First of all, is chorea the only form of motor disturbance, and is it the only distinctly cerebral symptom accompanying virulent forms of septicemia? Although the bacteriological evidence on this point is still incomplete, I believe that we shall find that acute grave delirium with its marked motor disturbance, some of the virulent forms of meningitis, possibly some of the post-puerperal forms of encephalitis, will be found to be allied, pathologically at least, to toxic chorea. Only a few weeks ago I was asked to see in consultation, a man of forty who had been well until he suddenly began to complain of slight ear symptoms with intense headaches and chills. In less than twenty-four hours there was loss of consciousness with incessant motor activity so that the patient could not be held quiet for an instant. Within forty-eight hours from the time of onset these agitations gave way to complete coma, and after a few hours more death resulted. Lumbar puncture was done revealing the presence of the *Streptococcus mucosus capsulatus* which Buerger and others have shown to be one of the most virulent forms of streptococci. The port of entry for the virulent organism in this case was, no doubt, the ear which had become diseased after what was supposed to be an ordinary attack of influenza.

Referring once more to the choreas as such, the question arises whether there is, after all, any relationship between what we have called septicemic chorea and ordinary chorea minor. The same nerve elements, assuming for the time that they are the motor neurons in the cortex and elsewhere, are affected, in the one case possibly in a purely functional manner as a result of exhaustion, in the other case by the poison acting upon these same neurons. The parts affected may be the same in both diseases, but the disease process would seem to me to be an entirely different one. Nor can one claim that septicemic chorea is merely an intensification of the morbid process giving rise to chorea minor. To my way of thinking a new and independent infection has been, or may be, superimposed, upon a preceding chorea minor. The nerve elements involved in the latter fall victim most easily to the influence of a toxin circulating in the system, and in this way we may account for the fact that in several of the cases reported mild attacks of chorea minor have preceded the grave attack culminating in death. We must not overlook the fact, furthermore, that the constant abrasions of the skin brought about by the frequent movements of the choreic patient yield easy and innumerable points of access for the invading organisms. We can also understand that grave chorea may be developed in an individual who has never been subject to choreic movements of any sort: but I shrink from mere theorizing.

We may infer from the previous review of the subject and from the arguments just adduced, that the bacteriological origin of chorea minor has not been firmly established. Bacterial cultures obtained post mortem cannot be accepted as satisfactory evidence of a bacteriemia existing during life. Taking only those cases into consideration in which the microorganism was found in the blood during life, we see that we have only one case of Heubner, one case of Cramer and Toebben, and the first of the two cases reported this evening, which prove beyond a doubt the existence of a septicemia in patients afflicted with acute grave chorea. In some of these cases streptococci have been found, in other staphylococci, and it is more than likely that in such a case as the second one reported this evening some other organism not yet determined will be found to be the cause of the disease. There is no reason to be astonished at the diversity of these findings, and there is no reason to expect that any one organism should be responsible for such a condition as denoted by the term septicemic chorea. If objection were to be raised to this term and the question should be asked why we speak of infectious or toxic choreas at all, I would say that we have no choice in the matter, and for the present must speak of these conditions in the term of the most prominent clinical symptom, but I have no doubt that in years to come we shall have further data and shall be able to speak of these same conditions as a general streptococcic or staphylococcic (or some other bacterial) infection or toxemia accompanied by choreic movements, but until the pathogenesis of this condition is more clearly and safely demonstrated, the only rational course to pursue is to retain such a term as septicemic chorea for the convenient grouping of cases allied to one another, symptomatically and etiologically.

It is manifestly impossible to close a discussion of this subject without endeavoring to classify the various forms of chorea, omitting from consideration the cases of post-hemiplegic chorea which are due to a gross cerebral lesion. We have, first, a not

inconsiderable percentage of cases of chorea minor which have, up to the present time, not yielded the slightest evidence of being due to an infection, and which we must, until further proof is forthcoming, consider as being due, for want of a better term, to an exhaustion of the nerve elements.

Next come the cases associated with endocarditis, with rheumatism, with fever; on the whole, a more severe group of cases than the first. Thayer's analysis of eight hundred and eight cases is of great interest. Some day when bacteriologists will have discovered the microorganisms of acute articular rheumatism and of the various types of infectious endocarditis, we shall have more light on this group of cases of chorea.

Chorea gravidarum constitutes a third distinct group, although it is possible that this may be due to some poison circulating in the system; just as Ewing, Williams and Strauss have shown that the vomiting of pregnancy is probably the expression of a toxemia; and if such patients give the history of having had previous attacks of chorea minor in early life, it simply goes to prove that the centers for choreic movements are especially prone to the influence of such poisons.

A fourth group would be the senile choreas, and possibly some of the so-called chronic choreas associated with marked arteriosclerosis, with nephritis, and with other degenerative changes. Whether or not these are toxic in character must be established by later researches.*

Lastly, we have the septicemic choreas which have been the main subject of this study, and for these we can at least claim that the microbic origin of the disorder has been established beyond reasonable doubt.

If we have had to shift our point of view from the consideration of symptoms to the consideration of general infective processes, we are keeping pace, it seems to me, with the advance in clinical medicine. The study of toxemia and of general infection looms up big in the future study not only of chorea, but of syphilis of the general nervous system, in the study of meningitis as well as in the researches now in progress on acute anterior poliomyelitis.

The prognosis of septicemic chorea would seem to be extremely grave, but I am not willing to believe that every such case must necessarily prove fatal.

As far as the treatment is concerned, it has been unavailing to the present time. Salicylates, sedatives, hypnotics, and the usual forms of hydriatric treatment have been employed. The good results that have been obtained in other severely toxic and infectious disorders by the use of appropriate antitoxins, leaves us some hope for the future. Meanwhile we must endeavor to eliminate, if possible, toxic products circulating in the body; the wisdom of such a procedure was shown in the recently reported case of Ewald and Witte.

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THEORETIC CONSIDERATIONS RELATIVE TO IMMUNIZATION BY MEANS OF THE TUBERCLE BACILLUS AND ITS PRODUCTS.*

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The problem of immunization in tuberculosis by means of the germ and its products has been prominently before the profession ever since Koch[1] in 1890 introduced his bouillon filtered product (old tuberculin) as a remedy for the treatment of the disease.† The elapsed years have, however, brought forth evidence to show that its sphere of usefulness is much more limited than originally believed. The original doses were probably too large and progression in dosage was made too rapidly, with the result that severe reactions were common. Immunization experimentally could, however, be produced so that animals failed to react to many times the original dosage. It was soon realized, however, that such immunization did not protect the animal against the invasion of the germ itself.

The old tuberculin contains the products elaborated by the germ when grown on glycerin-bouillon which is afterwards concentrated by evaporation to one-tenth the original volume. The germs are then removed by filtration. The filtrate, which is used, contains the products of the germ soluble in water and glycerin more or less modified by heat. Purified tuberculin is old tuberculin purified by precipitation with alcohol.

The bouillon filtrate of Denys[2] also contains the products of the germ when grown on bouillon. The germ bodies are removed by filtration. To the filtrate one-fourth of one per cent. of phenol is added and allowed to stand until the slight coagulation thus formed has settled out, when it is ready for use. This bouillon filtrate (B. F.) contains the water-soluble products of the germ *unchanged by heat*, and in this respect differs from the "old tuberculin." Its action is, however, practically the same as the old tuberculin and the purified tuberculin. These three products, old tuberculin, purified tuberculin, and bouillon filtrate, contain the toxic products of the germ, but probably none of the constituents of the germ body. A patient when injected with either of them shows increased agglutinative and opsonic power toward the germ. The protective influence of any of the filtrate products is largely antitoxic and not bactericidal. It would, therefore, seem that

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†The early attempts at immunization by Cornil, Leloir and Babes in 1883, Charrin in 1885, and by Daremberg in 1887, as well as by Hammerschlag, Jeffries, Hueppe and Scholl, Trudeau, and others, while interesting from the historical standpoint, do not require review for the purpose of this article. The early history of tubercle immunization is fully given in von Ruck's article in the Medical Record, January 20, 1906.

the use of the filtrate products would bring more benefit in cases suffering from pure tuberculous toxemia. Toxemia is not, however, a prominent feature of uncomplicated tuberculosis, at least in early stages. How important the toxic feature becomes in advanced cases, due to the absorption of the products of the tubercle bacillus in the body, remains to be settled. Without secondary organisms (influenza-bacilli, pneumococci, staphylocci, and streptococci) it is probable that toxic features with softening and dissolution of tissue, as we now understand the process, would be a much less important factor in the course of the disease.

All sorts of methods, mechanical and chemical, have been tried to separate from the germ body the poisonous properties of the cell, in the hope of inducing by injection in the treated individual antitoxic, bactericidal, and antiendotoxic immunity, but with varying degrees of success. Von Ruck[3] in 1896 washed the bacilli upon a filter until he had removed all water-soluble proteids, then extracted the fats, after which the germ residue was taken up in water. This watery extract, he claims, contains the specific immunizing substance of the cell body, the hindering substance to its liberation having been removed by the extraction of the fats. Von Ruck has had a most extensive experience in the past eight years in the employment of this bacterial product in suitable cases and his reports show a high percentage of recovery. Von Behring[4] evidently had the same object in view when he presented his work in 1898. He washed the bacilli, then extracted the fats, and again extracted the residue in glycerin and water at a temperature of 150° C. in the autoclave. Such a degree of heat, as Von Ruck and others have noted, must have modified chemically, if not destroyed, the resulting toxin. It has never been used clinically, to our knowledge. Von Behring's latest contribution to the subject was before the International Congress for Tuberculosis (Paris, 1905). He believes that the curative, immunizing property is inherent in the germ body, and that it can be obtained after extraction with water, then with ten per cent. solution of sodium chloride, and finally with alcohol and ether. The remaining residue is reduced to powder and injected subcutaneously. He calls this curative product T. C.

Koch[5] in 1897, by grinding masses of the dried germ for hours in a mortar, found that he could break up, more or less, the cell body. When reduced to a fine powder, distilled water is added and the solution centrifugalized. This throws down a cloudy mass, the supernatant fluid containing the water-soluble constituents (Tuberculin oberst, T.O.) being discarded, as it produces practically the same effect as the old tuberculin. The residue (Tuberculin rückstand T. R.) is ground and reground until all goes into solution. Koch claimed to possess in this product not only the properties of the cell, which would when injected bring about immunity against the bacillus itself, but also immunity against its toxin. He, in fact, succeeded in immunizing guinea pigs so that at later periods they were not susceptible to the injection of virulent cultures. *In the T. R. at least part of the water-soluble constituents of the cell are removed and discarded.*

In the next product to be described, the so-called Bacillen Emulsion (B. E., Koch, 1901[6]), the dried germs of known virulence are ground and reground for weeks, after which physiological salt solution is added and the suspension set aside to sediment, so that any particles of germ substance not completely disintegrated may be deposited. The resulting supernatant suspension, to which an equal amount of glycerin is added, is standardized so that it contains five mg. of ground germ substance per c.c. After standing for two or three months, and after testing by guinea pig inoculations to be certain that it contains no living tubercle bacilli, it is ready for use. *The B. E. may be said to possess all of the properties of the cell body itself.* Koch recommended this for treatment of patients as superior to T. R. because when injected into animals it produces a higher agglutinative power.

In attempting immunization it may be supposed that the effort should be directed in any given case toward not only the products elaborated by the germ, the toxins, but against the endotoxins of the cell body as well. This has been common knowledge for years, and was the idea Koch had in mind when he produced the T. R. and Maragliano,[7] his liquid F. (the filtrate product of tubercle bacilli on glycerin-bouillon to which has been added equal parts of watery tuberculin), and his Bacillary Pulp (germ bodies ground to destruction with clean, dry sand: cold distilled water is added and the product filtered). This cell filtrate, which is sterile, is supposed to contain all the water-soluble constituents of the germ body unaltered by heat. When prepared in the proportion of ten parts of water and one of bacilli by weight it is ready for use in combination with the bouillon product (Liquid F.) to produce immunity in cows by repeated injection. After the serum of the treated animals reaches 1,000 antitoxic units per c.c. it is used for therapeutic purposes. He endeavored to bring about passive immunity through the medium of bodies elaborated in animal serum.

Maragliano's work has been carried on in this country during the past two years at the Henry Phipps Institute, Philadelphia. Maragliano has reported many hundreds of cases cured or improved under the use of this serum. At the Henry Phipps Institute the results have been variable and the men who have used it are divided as to its efficacy.

The bacillary pulp of Maragliano probably contains more of the cell endotoxins, despite the fact that filtration of the suspension is employed, than any other product except B. E. The weak point, it seems to us, in his work lies in the unfortunate fact that his antiserum, however successfully made, was in the body of the animal, not in his patient, and experience has shown that such immunity cannot, for the tubercle bacillus, be successfully transferred. Maragliano has shown that in antitoxic value the serum of man is much greater than the serum of cow, goat, or horse, but in antibacterial power the serum of the calf, cow, and swine is greater than that of man. It would, therefore, appear that the attempt should be made in man to first increase the antibacterial value of the serum, since normally this value is lower than the relative immunity existing toward the products of the germ. In the early stages of tuberculosis, as before mentioned, the toxic effects are probably slight and in favorable cases the toxin is probably largely neutralized by the antitoxins elaborated in the blood serum under the stimulating effect of the absorbed toxin.

Vaughan and Wheeler[8] have more recently directed attention to the split products of the tubercle bacillus. They used a nonvirulent strain, first extracting the fats and waxes of the cell body with alcohol and ether; the remaining cellular substance is covered with absolute alcohol (two per cent. alkaline with sodium hydroxide) and treated for an hour at the boiling point. After three such extractions it is found that the substance is split into a portion soluble in the alcohol (designated the "cell poison") and an insoluble portion (the "cell residue"). "The 'cell poison' when given to healthy ani-

mals in very small repeated doses has no visible effect, but when given in very small doses to tuberculous animals it intensifies the tuberculous process and in all cases the treated animals die before the controls." The "cell residue" is the nonpoisonous group. It has the apparent effect of sensitizing guinea pigs to the tubercle bacillus. They conclude that if patients can be sensitized to the bacillus as well as the guinea pigs, "cell residue" may be of service in limiting the spread of an early localized tuberculosis; but, on the other hand, it may be a dangerous remedy when large numbers of bacilli exist in the body, since the specific bacteriolytic ferment produced under the influence of such a sensitizing substance may be sufficient to liberate from large numbers of bacilli a dangerous amount of toxin. The more the matter is considered the more do we believe, except in rapid fulminating types of phthisis or miliary tuberculosis, that pure tubercle toxemia is comparatively unimportant.

Vaughan and Wheeler have also obtained from the bouillon in which the germs were grown two split products, one poisonous ("precipitate poison") and one non-poisonous (the "precipitate residue"). The "precipitate poison" has a similar poisonous effect upon animals to the "cell poison." The "precipitate residue" sensitizes guinea pigs to the tubercle bacillus in much the same way as the "cell residue." They express the belief that "no preparation from the tubercle bacillus should be used in the treatment of tuberculosis until the poisonous cell proteids and the poisonous proteids in the media for the growth of the germ have been removed." The experience of many who have worked with the products of the tubercle bacillus and with certain constituents of the cell body (such as T. R.) as a means of inducing relative immunity does not correspond with this view; that is, from the clinical standpoint in selected cases not overwhelmed with extensive lesions.

Rosenau and Anderson,[9] who have done so much work on the problem of hypersusceptibility, have expressed the belief that resistance to disease may be largely a matter of hypersusceptibility at some time, and that the "phenomenon of hypersusceptibility to certain bacterial proteids is followed by a definite immunity against infection by the microorganism." They have also succeeded in sensitizing animals, by most minute doses, to other proteids, such as hemoglobin, egg albumin, and peptone. Such work on the bacterial proteids may have the greatest bearing upon the whole problem of bacterial therapy. When a sufficient sensitizing quantity of any strange proteid has been given to an animal a definite period must elapse between the first and second injection, otherwise symptoms of collapse supervene more or less rapidly and many of the animals die. They have shown that subsequent injections, properly given as to time, bring about with certain germs (colon, typhoid) immunity to the infection. This phenomenon is not universally true, however, since in the case of the anthrax bacillus immunity does not follow hypersusceptibility to its bacterial proteid.

To return to the tubercle bacillus, many other tuberculin preparations have been used in the treatment of the disease, but they all fall, theoretically at least, into one or the other of the two classes used below.

TUBERCULINS

1. Toxic Media Products...	Old Tuberculin, O. T. Koch. Bouillon Filtrate, B. F. Denys. Purified Old Tuberculin.	Productive of Antitoxic Immunity.
2. Endotoxic Cellular Products...	New Tuberculin, T. R. Koch (part cellular product) Bacillus Emulsion (total cellular product).	Productive of Antibacterial Immunity.

Practically all of them mentioned in the above classification, when suitably used, raise the agglutinative and opsonizing powers of the blood serum.

In any given case the difficulty lies in deciding which preparation had best be used. We refer to early nonfebrile cases or to favorable cases not manifesting a temperature of over 99.5° F. Denys and Trudeau have used extensively the B. F.; von Ruck, the watery extract; many others, including Wright, the T. R., while others have used the B. E. Trudeau,[10] and others have called attention to the fact that "the method of Wright takes no account of habituation by progression in dosage and the production of tuberculin immunity, but merely aims at keeping the patients' opsonic index as high as possible by properly spaced and indefinitely repeated doses of about the same amount of tuberculin." Trudeau believes that the proper way to produce tuberculin immunity is to very gradually increase the dose, if possible, to from one thousand to ten thousand times the dose used at the commencement of treatment. This should be done by using minute doses and very gradually increasing in order to avoid marked reactions (of which, from the opsonic standpoint, prolonged negative phases are to be considered a part) or any disturbance of the patient's health. Trudeau has mentioned the use of the B. F. and B. E., but never, to our knowledge, a combination of the two.

The part played by the opsonins in the production of immunity is but one of the factors probably necessary. We express the belief that no one of these products mentioned possesses all of the properties desired in the production of immunity; that is to say, the products elaborated by the germ as well as the entire cell body. The belief has been expressed in previous pages that, theoretically at least, the antibacterial elements (the constituents of the cell body) are more necessary in the early stages of the disease than the antitoxin elements (the media products of the germ).

This, of course, is more or less speculative, although considerable experimental data gives ground for this belief (see Maragliano).

One of us has had a certain measure of success through the use of a combination of T. R. and old tuberculin in the treatment of incipient cases, with results apparently better than he has previously been able to obtain by using the T. R. alone. The number of cases is, however, too small to draw even tentative conclusions. Two recent cases, typical of others, will be briefly mentioned. The first patient gained in weight from 107 to 123 pounds in two months; the few tubercle bacilli present in the beginning disappeared (probably in this case pure tuberculous toxemia); the secretion of HCl, which was in the beginning so diminished as to cause constant vomiting after taking food, approached the normal, and the vomiting ceased. The second patient, two months ago generally asthenic and bedridden, although the amount of lung involvement was slight and might be called incipient, has so much improved that whereas in the beginning she reacted severely to 0.5 mg. old tuberculin, she now withstands 0.5 mg. T. R. and 1.0 mg. old tuberculin in combination without temperature reaction or exaggeration of moist sounds, and for the past month has markedly gained in weight and is able to exercise in the open air without rise of temperature. Of course, such results are not uncommon in favorable cases with any form of treatment. We do not ascribe the benefit to the inoculations alone.

It seems to us, however, that possibly better results might be obtained by using a combination of

the B. E. and B. F. in treatment; that is, by beginning with small doses of, say, one ten-thousandth mg. of B. E. in combination with one ten-thousandth mg. of the B. F. and increasing the doses as rapidly as the clinical evidence warrants up to many thousand times the original dosage of each.

The following solutions will be employed, numbered one to ten each, of the Bacillen Emulsion and Bouillon Filtré. The dose to be given according to tolerance once or twice weekly will be 0.5 c.c. of solution No. 1 B. E. in combination with 0.5 c.c solution No. 1 B. F.

The progression in dosage will be made as follows: Ten injections in combination of Solutions No. 1, increasing gradually during the series of ten injections by tenths of a cubic centimeter (from the original dose 0.5 c.c. each of Solutions B. E. and B. F.), so that upon the completion of the series of ten injections one c.c. each of B. E. and B. F. is given, thereby approximating the initial dose of the next solution.

Then ten injections of Solutions No. 2, likewise increasing by tenths of a cubic centimeter (from the original dose 0.5 c.c. each of Solutions B. E. and B. F.), and so on until ten doses of Solutions No. 10 have been given. It will thus be seen that from six months to one year will be required for the complete series.

In computing the solutions each cubic centimeter of marketed B. E. suspension was, according to the standard usually adopted, figured to contain 5 mg. ground germ substance, and each cubic centimeter of marketed B. F. was figured to contain 1000 mg. of toxin. It seems to us that any method in which a certain number of drops are to be measured to obtain the dose desired is open to objection in dealing with such small quantities, since the size of the drop depends so much on the diameter of the dropping end. In measuring the dose for injection a syringe accurately marked in cubic centimeters should be used.

BACILLEN EMULSION.

(Solid Substance not Liquid Measure.)

Each 0.5 c.c. of Solution			*Standard Suspension*
No. 1 contains	$\frac{1}{10{,}000}$ mg.	=	$\frac{1}{50\,000}$ c.c.
" 2 "	$\frac{1}{5{,}000}$ mg.	=	$\frac{1}{25{,}000}$ c.c.
" 3 "	$\frac{1}{2{,}500}$ mg.	=	$\frac{1}{12{,}500}$ c.c.
" 4 "	$\frac{1}{1{,}000}$ mg.	=	$\frac{1}{5{,}000}$ c.c.
" 5 "	$\frac{1}{500}$ mg.	=	$\frac{1}{2{,}500}$ c.c.
" 6 "	$\frac{1}{250}$ mg.	=	$\frac{1}{1{,}250}$ c.c.
" 7 "	$\frac{1}{100}$ mg.	=	$\frac{1}{500}$ c.c.
" 8 "	$\frac{1}{10}$ mg.	=	$\frac{1}{50}$ c.c.
" 9 "	$\frac{1}{5}$ mg.	=	$\frac{1}{25}$ c.c.
" 10 "	$\frac{1}{0}$ mg.	=	$\frac{1}{5}$ c.c.

BOUILLON FILTRE.

(Liquid Measure.)

Each 0.5 c.c. of Solution			*Standard Filtrate*
No. 1 contains	$\frac{1}{10{,}000}$ mg.	=	$\frac{1}{10{,}000{,}000}$ c.c.
" 2 "	$\frac{1}{5{,}000}$ mg.	=	$\frac{1}{5{,}000{,}000}$ c.c.
" 3 "	$\frac{1}{2{,}500}$ mg.	=	$\frac{1}{2{,}500{,}000}$ c.c.
" 4 "	$\frac{1}{1{,}000}$ mg.	=	$\frac{1}{1{,}000{,}000}$ c.c.
" 5 "	$\frac{1}{500}$ mg.	=	$\frac{1}{500{,}000}$ c.c.
" 6 "	$\frac{1}{100}$ mg.	=	$\frac{1}{100{,}000}$ c.c.
" 7 "	$\frac{1}{10}$ mg.	=	$\frac{1}{10{,}000}$ c.c.
" 8 "	$\frac{1}{0}$ mg.	=	$\frac{1}{1{,}000}$ c.c.
" 9 "	10 mg.	=	$\frac{1}{100}$ c.c.
" 10 "	100 mg.	=	$\frac{1}{10}$ c.c.

It will be noted that the progression in dosage is more rapidly made in the solutions of B. F. than in the solutions of B. E., since it has been shown that B. E. habituation takes place more slowly and that there is more tendency to reaction. Of course, slight reactions will occur occasionally in the most carefully conducted case. The aim should be to increase the patient's tolerance to just short of the amount required to produce reaction. If signs of reaction occur, great care should be exercised in repeating the dose until evidence of reaction has disappeared.

It is proposed during the next two years to treat a series of cases after this method. One of us will have supervision of the preparation of the material and the other will watch the results clinically. Nothing new, except the method of its application, is ventured in the method suggested, it being merely what Koch had in mind when he developed the T. R. and the B. E., and also Maragliano when he used for immunization in the cow his Liquid F. and Bacillary Pulp in combination. We believe, however, that all of the preparations named (and there are many others not mentioned for the purpose of this article, such as Büchner's Tubereulo-plasmin, Landmann's Tuberkulol, etc.) lack when used alone one or other of the qualities desired when attempting to produce immunity by bacterial therapy. Autoinoculation in tuberculosis from the effect of exercise and the raising of the index thereby, together with other equally interesting features of the tuberculous process and its relation to resistance, will be fully considered in the work to be undertaken.

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HOW MUCH GYNECOLOGY AND ABDOMINAL SURGERY SHOULD THE GENERAL PRACTITIONER OF MEDICINE KNOW?†

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Two remarkable experiences within the past six months have forcefully brought to my attention a matter which fifteen years of post-graduate teaching in the Philadelphia Polyclinic had already strongly impressed upon me, namely, the importance of a general knowledge of pelvic anatomy and pathology for every man who attempts the practice of medicine. Especially do I emphasize the value of this knowledge of the pelvis and its viscera to those who are called upon to pursue their profession in country districts and smaller villages and hamlets where immediate access to a specialist and surgeon cannot be had, and a delay of some hours must ensue before radical help can be obtained. Frequently under such circumstances to recognize the condition in an urgent case and to know what to do means all the difference between life and death. In other words, my plea to-day is for the cultivation to the utmost of the diagnostic ability of each and every medical man in the country in preference to the acquiring of an extensive knowledge of surgical and laboratory technique, valuable as this may be in its proper place.

It was, I believe, my distinguished teacher, the great surgeon, Dr. D. Hayes Agnew, who formulated the axiom: "A good physician may make a good surgeon, but a good surgeon must be a good physician." I have always held that it is a deplorable mistake for a young man just graduating from a medical college or from his post-graduate hospital interneship to enter immediately upon a career as a specialist in any line of medical or surgical work. Much better is it for him to acquire first a practical experience in general medicine, together with a knowledge of how to deal with men, and then with this substantial foundation to insure success, to grow gradually into his chosen line of specialization. By adopting such a course he is broadened mentally, and his view of things as he sees them is deeper and larger than it would be had he limited his experience and thereby acquired the narrowness and mental strabismus that invariably results from an early specialization of one's work.

A few years ago I heard the distinguished Philadelphia Shakespearian scholar, Dr. William Henry Furness, in a notable address before the University of Pennsylvania and its friends, advocate that the well-read man is one who has a general smattering of information. I believe this to be true in a literary sense or from the standpoint of social cultivation, but it will be well for us to bear in mind that often from a professional point of view "a little knowledge is a dangerous thing." Therefore, while urging the value of a general knowledge of pelvic and abdominal pathology to every medical man, I have repeatedly recoiled and mentally protested upon hearing an able abdominal surgeon, carried away by his enthusiasm during the brilliant performance of a difficult celiotomy, remark to a class of post-graduate students: "Any one of you should be able to perform an abdominal section." This is not true. If each and every medical man in this broad land of ours should attempt to perform an abdominal operation of so great gravity as this I venture to affirm that the mortality records of that serious surgical undertaking would not be as it is now, one-half of one per cent. or less for a general laparotomy and one or two per cent. for hysterectomies and the graver abdominal operations, but would reach five or even ten per cent. or more for all abdominal sections. Such a course would work a twofold injustice. The operation itself and the surgeons as a class would be discredited in the eyes of the public, and the unfortunate victims of this necessarily imperfect surgery would be wronged beyond the possibility of correction.

It is not an impossible picture I am painting. Not so very long ago an aggressive, loud-voiced physician from a New England State remarked to me that he had then, when just completing a three-weeks' post-graduate course in gynecology, seen at first hand an even dozen abdominal sections, and that it was his intention on returning to his home the following week to do two similar operations upon patients of his. He further asked me whether I did not think he was able to do such work after that experience. I replied that that was a matter for him to decide for himself, but that I had *assisted* in over two hundred sections before I attempted my first operation.

"Experience worketh caution," and when it has been your unfortunate lot to see, in the hands of able surgeons, a woman bleed to death upon the operating table from a punctured cavernous fibroma of the uterus without the possibility of arresting the hemorrhage; a bladder torn almost entirely from its base; a dislocated ureter completely severed or enclosed in a hysterectomy ligature; a bladder adherent to the umbilicus and displaced by massive pus-tubes opened with the first incision; a pregnant uterus of four-and-a-half months removed by mistake for a myomatous tumor; the small intestine completely cut in two in a mass of fibrous lymph; and a bloody fountain squirting from an ectopic pregnancy ruptured far out near the pelvic wall, then do you grow cautious in action and reticent in prognosis, although in a sense you are a stronger and safer surgeon because you know the imminent possibilities with which you may have to contend. Such was not the man in the western portion of our own State who opened the abdomen of one of his women patients, clipped off the ovaries and tubes without ligation as he would spay an animal, and closed the incision—with what result within a few hours it is not necessary to relate.

Now, how much abdominal surgery and gynecology should a general medical practitioner know? As much as he possibly can without detracting from

*The earlier announcement of Maragliano's work was made at Bordeaux in 1895.

†Read before the Bucks County, Pa., Medical Society, at Newtown, Pa., February 12, 1908.

the general medical information which it is incumbent upon him to acquire. The weekly perusal of a first-class medical journal will furnish hints at diagnosis and treatment which will well repay the time consumed in reading them. Then, in a case of desperate urgency with no assistance at hand, I will endorse the statement of the surgeon I have quoted and will say that under such circumstances, and only then, should each and every medical man be able to perform an abdominal section. Do not forget this, however, as the well-trained medical men that you all are—for permit me to say that I have learned to admire and respect the ingenuity and self-reliance of the average country doctor, and his ability to recognize in most cases the gravity of acute though obscure developments—do not forget, I repeat, that there are terrible conditions that may be encountered in the pelvic and abdominal cavities, a few of which I shall touch upon at this time.

Internal Hemorrhage.—Thus, in the first place, every medical man should know by heart the symptoms of internal hemorrhage, which may result from rupture of an ectopic gestation-sac, the bursting of a pus-tube or of a cystic ovarian growth, or which may follow a traumatism or strain resulting in some visceral rupture, as of the stomach, spleen, or bowel. I have seen a patient, a man, bleed to death from an unrecognized complete vertical rupture of the spleen induced by a blow from a wooden leg received in a fight with the one-legged man. I have seen a man die upon the operating table four days after an extensive rupture of the bowel caused by violent efforts to save himself from falling beneath a wagon which had almost run into him while riding upon his bicycle. Early intervention in both of these cases would probably have saved life. Only this last summer I was hastily summoned by telephone to a town fifteen miles from my city to see a woman dying from rupture of an ectopic gestation-sac six hours after her physician had suspected that such an accident had occurred. Would any one of you wait six hours under such circumstances as this before opening the abdomen yourself or summoning the aid of a surgeon? I do not think so. Yet in this instance rupture had taken place at six o'clock Saturday evening, the condition not recognized or suspected until four o'clock Sunday morning, when the pulse-rate was 150 or more and the patient was blanched and shocked almost to unconsciousness, and the surgeon not summoned for another six hours, when it was too late to attempt an operation. An acute paroxysm of pain, followed immediately or shortly by collapse, with a pulse-rate of 120 or over—thready and collapsible, extreme surface pallor with perspiration, and loss of consciousness, should be a well-known picture to every medical man meaning one thing only—internal hemorrhage. The treatment is the same whatever the source of the bleeding, whether mesentery, spleen, bowel, or broad ligament. The important thing to know is that the abdomen must be opened at once, either by yourself or with the aid of an experienced surgeon—but if the diagnosis of concealed hemorrhage is not made, how can the appropriate treatment be instituted in time?

Ectopic Pregnancy.—It is gratifying to note that the possibility of the occurrence of an ectopic pregnancy is being very generally recognized by the profession at large. In my student days at the University of Pennsylvania we, as a class, were taught that there was a curious but exceedingly rare obstetric accident known as extrauterine pregnancy, but that so infrequently did this occur that in all probability not one of us—and that a class of over 140 men—would ever see a case of the serious accident. We now know that ectopic pregnancy occurs about once in three hundred gestations, and that every man in active general practice will probably sooner or later encounter a case of the kind. In fact, gentlemen, the first abdominal section that I was called upon to perform was for rupture of a repeated extrauterine pregnancy, the first operation having been made by my friend and teacher, Dr. B. F. Baer, of Philadelphia, just two years before. One of the abdominal surgeons of my city has said that on an average he operates upon twenty-five ectopic pregnancies yearly, and not a season passes for any one of us without several cases of the kind being encountered either in our own work or in that which is referred to us.

Appendicitis.—Again, in these days when appendicitis is either more generally recognized and differentiated from other obscure abdominal conditions, or is, as I believe, actually increasing in frequency, it is most important that an early diagnosis of the condition be made. A suggestion in diagnosis which has recently been published by that practical surgeon of New York City, Dr. Robert T. Morris (*Jour. Amer. Med. Assoc.*, January 25, 1908), is well worth emphasizing. You all know the position of McBurney's point (an inch and a half from the anterior superior iliac spine on a line extending from the spine to the navel) and its value in diagnosing inflammation of the vermiform appendix. Morris now claims that this point is only of secondary importance and must give place in significance to another point situated an inch and a half from the opposite end of this spino-navel line—that is, at a corresponding distance from the navel and about six inches distant from McBurney's point. This we may term the point of the right lumbar ganglia of the sympathetic nervous system. Tenderness over this spot, according to Morris, is of considerable significance, as follows: If the point shows tenderness to any degree, even if pressure over McBurney's point elicits no tenderness, there will inevitably be found a chronic or subacute inflammatory condition of the vermiform appendix, provided that the corresponding point to the left of the navel (the point of the left lumbar ganglia) show no tenderness upon pressure. If both right and left lumbar ganglia are sensitive upon pressure, then the trouble lies in the pelvis, in the Fallopian tubes or ovaries, while absence of tenderness over either of these ganglia in the presence of obscure abdominal symptoms will indicate trouble above the region of the appendix. If this statement be true—and Dr. Morris speaks with considerable assurance, after a careful study of the condition—then we have here an excellent addition to our means of diagnosis of pelvic and abdominal pathology, and one which we all should thoroughly acquaint ourselves with.

Given a case of suspected or of clearly recognized appendicitis, how long should palliative measures be continued and when should surgical aid be called in? A safe rule to adopt is this: In cases that are not immediately operable, as indicated by the gravity of the symptoms, apply the ice bag and continue the use of purgatives for twelve or fifteen hours, but do not administer an opiate of any kind. If at the expiration of this time the symptoms have not ameliorated or have grown worse, further delay in instituting operative measures is dangerous. If, on the other hand, the temperature falls gradually, the pain grows less severe, and the general condition of the patient is improved, the nonsurgical measures may

be continued for another period of twelve hours, while a close watch is kept upon the course of the disease. Right here, however, it is incumbent to bear in mind a very important truth. In the cases of fulgurant appendicitis, with the early development of gangrene just at the time of the onset of the gangrenous change there will frequently occur a sudden and almost complete arrest of the symptoms. The temperature will fall to the normal and the paroxysms of pain will cease, and the unwary physician may be deceived into a fatal inaction. Three years ago, at 11 o'clock at night, I was called by long-distance 'phone from Uniontown, Pa., and asked to take the midnight train for Pittsburg in order to operate upon a case of appendicitis the following morning. When I saw the patient, a woman of thirty-two years of age, at 10 o'clock that morning every symptom had disappeared. There was even no abdominal rigidity. I was impressed, however, by the remarkable appearance of the woman's face. Her expression was one of most intense anxiety, and this, coupled with the history of an acute suppression of the symptoms, decided me to proceed with the operation. In this case not only was the appendix for one and a half inches the seat of gangrenous change, but for two inches around the mesentery was hard and green. Had I been deceived by the apparent improvement in the patient's condition death would have followed in from twenty-four to thirty-six hours. The moral is obvious: All cases of appendicitis require incessant watching, prompt action when operative measures must be resorted to, and a thorough knowledge on the part of the attending physician of the symptoms of gangrene and perforation.

The abdomen is a fascinating field of study to me, and I could indefinitely continue my remarks upon its interesting and frequently dangerous pathology and the need of a sharpening of our diagnostic and observational powers in regard to it. Time will not permit me to do this, however, and I hasten on to mention next some important conditions that are very frequently encountered within the adjoining cavity—the pelvis.

Uterine Curettage.—In December last I was asked to see, in consultation with a physician of West Philadelphia, a young woman who had given birth to a baby just two weeks before. The history of the case was as follows: The labor had been normal and the puerperium also up to the morning of the day upon which I was requested to see the woman. That morning the nurse called the attention of the attending physician to a purulent discharge which was coming from the vagina. A specular examination was made, when the discharge was discovered escaping from the cervical canal. Now, gentlemen, note that the convalescence had been normal in every respect and without the slightest elevation of temperature. A vaginal douche of bichloride solution or of some other antiseptic material would have answered every purpose in this case. The physician, however, determined to immediately curette and flush out the uterine cavity, which he did, as he told me, most energetically, using after the curettage a copious douche of creolin. One-half hour after the operation the patient suffered a sharp uterine hemorrhage and at the same time experienced a severe stabbing pain in the right chest, together with considerable dyspnea and a marked rise of temperature. The physician, who was hastily summoned, was unable to count the radial pulse, and I was sent for. I found the young woman conscious and quite alert to all that was going on around her. Indeed, as I leaned over her she whispered interrogatively, "Operation?" At her radial pulse only a thrill could be detected, but upon listening over the precordia I was able to count 98 beats to the half minute. Here was a patient with uterine hemorrhage, a temperature of 104½° F., a pulse rate of 200 beats per minute, a sense of oppression, with moderate dyspnea, no cyanosis, and a severe pain in the right chest—these symptoms all developing within half an hour after a curettement and intrauterine douche at the end of the second week of the puerperium. The diagnosis was plain. The condition was one of pulmonary embolism, due to dislodgment and escape into the general circulation of a small placental clot. Fortunate was it for the patient that the embolus was minute. Had it been a little larger death would probably have been almost instantaneous. As it was the clot had been swept into the pulmonary artery and thence had found lodgment in one of the end arteries of the lung, where it had doubtless given rise to a small infarction in the lung tissue. Under the careful use of strophanthus, quinine, absolute rest, and the ice cap, a complete recovery resulted in three days. My friend, Dr. Richard C. Norris, to whom I related this interesting occurrence, said he had met with a similar experience one year ago in the hands of another physician, that patient also recovering from the alarming condition. When I had quietly remonstrated with the physician because of his unnecessary invasion of the uterine cavity, he replied that he had thought it perfectly safe to curette the uterus at the end of the second week, as by that time he believed the organ had thoroughly involuted. He was greatly astonished when I told him that it required six weeks for involution to be accomplished under the most favorable circumstances.

The truth I would have impressed upon us all by this case is this: Even such an apparently simple procedure as intrauterine curettement is not unattended with danger, and the axiom, "look upon the uterine cavity and the bladder as forbidden territories," is one well worth propagating throughout the profession. At a meeting of the Obstetric Section of the American Medical Association at Saratoga a few years since it was stated by one of the distinguished surgeons that the operation of dilatation and curettement of the uterus as done by medical men at large was attended by a mortality of two per cent., and the surprising statement was endorsed by other eminent abdominal surgeons. This mortality results from septic infection, perforation of the uterine wall, and rupture of the cervix and lower uterine segment with hemorrhage from the circular artery of the cervix. In my own interesting case a fatal termination almost resulted from pulmonary embolism, the clot coming from the placental site. In my own work rarely do I find it necessary to enter the uterine cavity after labor, and in the few cases in which this procedure is indicated, the finger, placental forceps, or the dull curette carefully manipulated will answer every purpose. Especially is it incumbent upon us to remember that at least six weeks must elapse before a puerperal uterus returns to its normal size, and that during this period puerperal sepsis, uterine hemorrhage, embolism, and posterior displacement of the heavy organ may follow indiscretions on the part of the patient or of her attending physician.

Posterior Displacements of the Uterus.—Next, let me urge upon you all the great importance of recognizing displacements of the uterus at as early a period as possible, together with the need of an immediate correction of the malposition. Here is

a phase of gynecology with which every medical man in the country without exception should be acquainted. I have frequently been astounded at the statements made to me by physicians in general practice that they never make vaginal examinations. Thousands of women throughout the country suffering from varying degrees of retrodisplacement of the uterus are treated by prescriptions and plasters for backaches, headaches, and nervousness, when a half minute's work would correct the primary cause of the symptoms and bring incalculable relief to the sufferers. Why this general antipathy to vaginal exploration should exist I cannot imagine. This I do know, however. This neglect on the part of the physicians has been responsible in many instances for the turning of worthy patients over into the hands of the Christian Scientists and osteopaths, who by their suggestion and deep massage have afforded a temporary relief from the sufferings, but necessarily not a cure of the organic condition. Believe me, it is as impossible to diagnose uterine and pelvic trouble without such examinations as it would be to recognize lung changes by percussion over a thoroughly clad chest. The index finger of every physician should be trained to detect the position and size of the uterus as well as any gross pathological change in the surrounding pelvic viscera, such as tumorous formations and ovarian displacements. In other words, it is necessary to recognize the site of the trouble. Then, if you feel that other experience than yours is needed, call in the necessary aid for consultation and advice. The inability to make a thorough diagnosis of pelvic disease in any given case should not be a cause of mortification to any conscientious man, for even the frequent making of vaginal examinations does not mean the making of a correct diagnosis in every case. Thus, a few years ago a woman physician in my own city, whose practice was then extensive, but who has now departed to her final rest, treated in her office a poor woman twice weekly from October until March for retrodisplacement of the uterus, for the correction of which condition she had introduced a Smith-Hodge pessary. At each visit the doctor assured the woman that she was much improved, but as the symptoms persisted and the suffering even grew more severe, the woman, in March, came to my clinic for relief, claiming that she was no longer able to pay the price of the office visit. On examining her I found an acutely anteflexed uterus, behind which lay a greatly enlarged, prolapsed, and adherent right ovary, which I ultimately removed. This body had been mistaken by the physician for the retrodisplaced fundus of the uterus. Here was an egregious error for which it is difficult to find an excuse; but let me assure you that we all are subject to errors in diagnosis—even the best of medical men—and this, as brethren, we may condone. What is incomprehensible to me, however, in the case I have quoted was the assurance of steady improvement which was given the poor woman at each visit when under the circumstances this improvement did not nor could not be.

It is remarkable how quickly relief will be afforded by restoring a displaced uterus to its normal position. Headaches, depression, and backaches frequently disappear as if by magic, and patients have returned to my office within five minutes of their departure to tell me they have not felt so well for years. Every gynecologist will bear similar testimony. The explanation for this relief is to be found in the removal of pressure from the network of sympathetic nerve plexuses which is lodged in the sacral hollow, and in the removal of the obstruction to the pelvic circulation, which must invariably result from a twisting, however slight, of the broad ligaments.

Cancer of the Uterus.—Finally, permit me to conclude this address with a few words upon that *bête noir* of medical men, cancer of the uterus. There is prevalent throughout the profession as well as among the laity a very common and a very serious misconception of facts concerning the menopause. Let me say at the outstart that the menopause is never normally accompanied by flooding. Either is the menstrual life abruptly ended for good—which is unusual; or the woman experiences a steady and gradual diminution in the quantity of the menstrual flow until it is finally suppressed—which is more common; or she passes through the well-known "dodging period," missing the flow one month to have it return the next month in its usual form, and repeating this process for six months or a year until the flow permanently disappears—which is most common. If at the age when the change of life should be expected there is experienced a sudden and unusual discharge of blood, a pathological condition exists. Trouble is to be anticipated, and in the vast majority of cases this will take the form of a malignant change in the cervix or more rarely in the fundus of the uterus. A vaginal and specular examination now becomes imperative, and occasionally an intrauterine curettement, and any delay, even for a week, on the part of the woman's medical adviser becomes reprehensible. Thousands of lives have been lost and terrible suffering inflicted upon the unfortunate women through the adoption of the temporizing plan. When these poor creatures do come upon the examining table it is often found that it is too late to do anything in the radical line of treatment. The vaginal wall, bladder, and broad ligaments have become invaded by the cancerous change and total extirpation of the growth is impossible. I would that every practitioner of medicine could have this truth indelibly branded upon his memory. Hardly in any other pathological condition to which the body is heir is the need for early intervention so urgent. Flooding at the menopause, then let me repeat, and return of the bloody discharge after it has once been arrested for a year or two, almost invariably spell malignancy.

In this paper I have merely touched upon topics on each of which papers, and even volumes, could readily be written. If in so doing I have been permitted to plant some new impression that may bear good fruit, or even if I have brushed up some forgotten point or awakened some latent memory, my work will not have been in vain. How much gynecology and abdominal surgery should each medical man know? Just enough to save life and to afford to those who come to them for relief the best possible chance for the recovery of the health which is so dear to each of us.

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Acute Pemphigus of Childhood, with Especial Regard to Etiology.—A. Longo gives an account of his experiments to determine the etiological factor in the production of acute pemphigus in children. It is generally admitted that the disease is contagious, and in the majority of cases in which the exudation from the bullæ has been examined *Staphylococcus aureus* has been found. The occurrence in children so much more frequently than in adults seems to be due to the greater vulnerability of their skins. The author examined the fluid obtained from the bullæ of four children observed by him. In all of them he found a pure culture of *Staphylococcus aureus*. The author concludes that the presence of staphylococci in the bullæ is not accidental, but has to do with the cause of the disease.—*Rivisti di Clinica Pediatrica.*

THE DIAGNOSIS AND TREATMENT OF THE MORE COMMON DISEASES OF THE SKIN.*

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In selecting the title of this paper our worthy president had in mind that Dermatology is the youngest of the specialties, that its classification is not perfect, and that the diagnosis of cutaneous lesions previous to 1896 was confusion confounded. The writer was present at the International Dermatological Congress held in London in September, 1896, to which cases were sent by visiting dermatologists from all parts of the civilized world. Forty per cent. of these cases were found to be the same disease classified differently by Germans, English, Americans, and French. In Berlin three years ago, and in our country the past summer, a large number of clinical cases were shown, which no doubt will result in still further clarifying dermatological nomenclature.

I should like to continue along this line of thought a little further, but as our president has restricted my paper to a discussion of the cutaneous cases seen in consultation that should have been diagnosed by the general practitioner, I must forbear.

In dispensary practice I find that the cutaneous manifestations of scabies, pediculosis corporis, and pediculosis pubis are readily recognized. In private practice, however, I know of no other group of cases that is so often wrongly diagnosed.

In scabies, the multiform lesions resulting from scratching may disguise the real trouble. For that reason there is hardly a skin affection that may not appear to be present. The following points always present in a case of scabies will, if memorized, aid greatly. Examine carefully between the fingers for the burrows, also about the wrists. Note especially the nipples in the female, and, in the male, the penis. In babies the papulopustular eruption of the heels and the soles of the feet is typical. For class or office demonstration the Acarus can be obtained by introducing the point of a fountain pen into one of the burrows; the ink will follow in the wake of the parasite, and if a needle be pushed to the bottom of the canal and then slowly withdrawn, the Acarus may be found on its point.

The pediculi corporis feed on the body, simply utilizing the clothing for a lodging place. The long scratch marks on the shoulders, loins, and buttocks, the numerous denudations with a central small blood clot, the charactertistic pin point blue spots, "maculæ ceruleæ," due to the minute hemorrhages as a result of the bite, the finding of the pediculi in the clothing, all point to but one diagnosis.

The pediculis pubis, or crab louse, attaches itself to the hairy portion of the trunk, especially in the pubic or axillary regions. A careful examination will reveal its presence, and that of the nits.

Cases of erythema annulare, "a sub-division of erythema multiforme," pityriasis maculata et circinata, and a circinate syphilide have frequently been referred to me, diagnosed as tinea circinata or ringworm of the body; the physician stating that the case puzzled him on account of its stubbornness in responding to the treatment usually recommended for the ringworm.

Erythema annulare is generally preceded by constitutional symptoms, pain in the head, back, and limbs; the temperature is 100° to 104°, and a history of gastric disturbance is usually elicited. Most, if not all, of the acute symptoms have disappeared before the case comes under the observation of the dermatologist. Erythema annulare presents typical rings, from a dime to a dollar in size, with a clear erythematous center. The border is raised, perceptible to the touch and eye, and is not scaly. The patients complain more of a burning than of an itching sensation.

A ringworm commences as a papule, soon becomes scaly, enlarging at the periphery, clearing up in the center, the rings never coalescing or even touching. Pruritus, although not marked, is present. The patient never complains of a burning sensation. It is at this stage that the diagnosis is made, and that tincture of iodine, formaline, or other drug, is applied, setting up a dermatitis, so disguising the original lesions that the consultant is momentarily at sea. In erythema annulare, pityriasis maculata et circinata, and the majority of cutaneous diseases, new lesions which will aid us in our diagnosis are always found if carefully looked for.

A circinate syphilide, the third of the ring group, is made up of individual papules arranged in semicircles or complete rings. The rings *may touch* and *may overlap;* there is a well defined induration and a slight redness between the papules which completes the ring. The neck and face are the favorite site for tinea circinata and a circinate syphilide.

The rings of tinea circinata are never broken, they do not overlap, and are always scaly and itchy. The reverse is true of the syphilide, in which the rings may be broken, they do coalesce, and there is an absence of scales and pruritus.

Tinea tonsurans, or ringworm of the scalp, alopecia areata, and alopecia syphilitica make up a group of scalp affections that deserve more time than is at my disposal. The lesions of ringworm and alopecia areata are generally circular. The ringworm presents broken hairs or stubs, and the base is more or less scaly, depending on the presence of the small or large spores.

On epilation, the root of the ringworm hair is always seen to be swollen. Itching is a prominent symptom, and the onset is gradual. The reverse of the picture is true of alopecia areata. The floor is pearly white, there is entire absence of scales and pruritus. A history of neuralgic pain, preceding the appearance of the bald spot by several days, may be elicited. The shaft of the hair is not affected, but the root is found to be atrophied instead of swollen.

The moth-eaten appearance of the scalp showing the lesions of alopecia syphilitica is so typical that to mistake it for ringworm or alopecia areata would be almost unpardonable—and yet this error is of frequent occurrence. If the picture of a hen-pecked husband, or as the scalp would look after an hour's seance with an angry hen, is kept in the mind, and compared with the round, scaly, and broken stubby hair, itchy lesions of ringworm, or the smooth, circular, non-itching one of alopecia areata, the mistaking of one for the other will be less frequent. It goes without saying that the prognosis and treatment depend on the diagnosis.

Impetigo contagiosa, pemphigus neonatorum, and a pustular syphilide are three of the skin diseases of early childhood that are not so clearly defined in the minds of general practitioners as I should wish.

The acute lesions of impetigo contagiosa are always discrete. The base is slightly erythematous, the contents of the vesicle are clear, but soon be-

*Read before the Harlem Medical Association, November, 1907.

come purulent. If the vesicle is not ruptured it dries up in a few days leaving a green scab, which soon falls off, leaving a red base. The favorite sites are around the mouth, chin, nostrils, and occiput; as there is more or less pruritus, the pus organism may be implanted by scratching on any part of the cutaneous surface.

Pemphigus neonatorum and a pustular syphilide are often diagnosed impetigo contagiosa. I saw two syphilitic patients in which this diagnosis was made too late to avoid a fatal termination. Pemphigus neonatorum is not always a syphilitic manifestation, as some dermatologists believe. The eruption appears about the second or third week of life, generally on the palms of the hands and the soles of the feet, also about the thighs and buttocks. The lesion is a bulla, not a vesicle as in impetigo contagiosa. There are very slight if any areolæ.

Pemphigus syphiliticus may also appear during the first week of life. The contents of the bullæ are always pustular. It attacks the fingers in preference to the palm. The classical figure of infantile syphilis is often present, and if recognized makes an error in diagnosis impossible.

Eczema pustulosum, the last of the pustular group to be differentiated from impetigo contagiosa, is a dermatosis in which the entire thickness of the skin is involved, and not the epidermis only. The pustular is the third stage of eczema, being preceded by an erythema. The formation of vesicles and oozing of infected serum cause pustulation. Impetigo is pustular almost from the first.

Eczema infantile, intertrigo, and dermatitis seborrhœica are found more often in infancy than all other cutaneous diseases. According to Crocker's statistics they form about 60 per cent. of all cases. The necessity of a correct diagnosis is obvious, and if our treatment is successful, two-thirds of the dermatological cases that are brought to us will be relieved, greatly to our honor and satisfaction, and to the relief of patients and friends.

The lesions of infantile eczema do not differ from the acute eczema of the adult. Erythema papules and vesicles are always present, the escaping serum from the ruptured vesicles forming crusts familiar to all.

An intertrigo is generally superficial and is due to local irritation by acid urine or feces, or confined perspiration in fat children. The erythema is always deeper in the folds, gradually disappearing towards the periphery. The exudation is thin and does not stiffen linen, differing in this respect from that of an eczema. An eczema may develop in an intertrigo, and it then assumes all the characteristics of a true eczema.

A congenital syphilide of the buttocks may be mistaken for an intetrigo. An intertrigo is generally limited to the site of the napkin. The erythema of a congenital syphilide may extend down the legs even to the soles of the feet.

Eczema seborrhœicum, especially of the buttocks, is seldom, if ever, moist, and only slightly itchy, differing in these two points from eczema. The erythema is more pronounced at the periphery than at the folds, the advancing border resembling that of a ringworm, it being raised and scaly. To repeat: In eczema the discharge stiffens linen, the discharge of an intertrigo does not. The erythema of intertrigo is deeper in the folds, fading towards the periphery; the reverse is true of eczema seborrhœicum. If the recognized treatment for one is applied to the others, great tribulation and not cure is the result.

Tinea barbæ or sycosis parasitica, sycosis non-parasitica, and eczema of the beard are often mistaken one for the other. The primary lesion of tinea barbæ is always scaly. It soon becomes indurated, and the lumpy or boggy condition so typical of ringworm soon appears. In sycosis non-parasitica the hair stands in the center of a small lake of pus. The hair is easily extracted, and without pain, while epilation in ringworm is always painful. Eczema pustulosum of the beard is always a secondary infection. The ever present primary lesions of eczema, vesicles, papules, and weeping are to be found here as elsewhere. In eczema and sycosis the sensation is a burning one, while in tinea the patient complains of a severe pruritus. In tinea barbæ the lesions are lumpy, scaly, and itchy. In sycosis and eczema, they are pustular, not scaly, and may be covered with crusts.

Tinea versicolor, chloasma, and leucoderma are often confounded. Tinea versicolor, or the so-called liver spots, is due to the presence of the vegetable parasite *Microsporon furfur*. It appears as yellowish brown spots, irregular in shape, which may spread over the entire body. They are found chiefly on the trunk, although the neck and flexor surfaces may be affected. The pruritus is moderate. If the disease is not treated it may last an entire lifetime. If tincture of iodine is applied to the tinea it stains the spores a mahogany brown.

Chloasma is due to an increase of the normal pigment. It may be found along the forehead, cheeks, angle of the eyelids, upper lip, and cheek, and is of a dark brown color. There are no subjective symptoms.

In leucoderma there is an entire absence of pigment. It appears as one or more white spots on a level with the surrounding skin. There is no scaling. The spots, which are sharply outlined, are surrounded by an abnormally dark pigment, which gradually fades into the healthy skin.

In closing the subject of diagnosis, kindly pardon one suggestion: The microscope is of great aid in the study of skin diseases; by its assistance in the majority of the cases that I have presented this evening for your consideration the differential diagnosis could have been made.

Treatment.—Babies and adults affected with scabies or pediculosis should be bathed in warm water, to which borax and tincture of green soap have been added, and allowed to soak for half an hour. After drying, a two per cent. unguentum hydrargyri ammoniati applied night and morning for a week is all that is necessary to effect a cure.

Babies and children should have an ointment of balsam of Peru, ʒii; precipitated sulphur, ʒi; rosewater ointment, ℥ii, applied twice a day. For adults an ointment composed of naphthol, gr. lxxx; green soap, ʒvi; rosewater ointment, ℥ii. ʒii to be thoroughly rubbed into the skin twice a day, will result in the death of the parasite in one week. The patient is then to take a second bath, put on clean underclothing, and report. Two teaspoonfuls of precipitated sulphur sprinkled between the bed sheets is a useful adjuvant.

The subjective symptoms of erythema annulare respond quite quickly to

℞
Sodii salicylatis ʒv.
Misturæ rhei et sodæ, ℥iii.

M. Sig.: A teaspoonful in a wine-glass of water every three hours. A lotion of pulveris calaminæ precipitatæ; zinci oxidi, aa ʒii; acidi phenici, ♏xxx;

aquæ rosæ ℥iv, will relieve the objective symptoms.

A circinate syphilide commences to resolve after a few hypodermic injections of salicylate of mercury, gr. i. One or two gentle applications of formaline to the ringworm of the body is all that is necessary for a perfect cure.

The cure of tinea tonsurans demands long and persistent treatment. The patient should wear a muslin nightcap and be isolated. The hair is to be clipped, thirty or more hairs to be epilated daily, and the following ointment rubbed in with a stencil brush twice a day:

℞

Ung. hydrarg. ox. rub. ℥iss
Ung. sulphuris, ℥iii
Ung. aquæ rosæ, ℥i

Our alopecia areata patients should be treated systematically, and an application of pure phenic acid made every two or three weeks. As soon as the new growth of hair appears a daily massage with 30 grains of salicylic acid in one ounce of olive oil will complete the cure.

The physician should remove the crust or open the moist lesions of impetigo contagiosa himself and apply to the base of each lesion peroxide of hydrogen to be followed by an ointment consisting of Ung. hydrargyri ammoniati 5 per cent., or ichthyol same strength, in Ung. zinci oxidi. This is to be rubbed in twice a day until the patient is cured, the nurse being instructed in the modus operandi. Bandaging the parts will aid greatly.

The pustular syphilide responds very kindly to lotio nigra externally and tablets of mercury and chalk internally. Of vital importance is the care of the baby's nutrition.

Pemphigus neonatorum non-syphiliticus requires the same careful watching as the luetic form. The calamine and zinc lotion applied every three or four hours is very acceptable.

As an intertrigo is generally due to acid urine, feces, or confined perspiration, by removing the cause, separating the contiguous parts, and the application of ℞ Magnesiæ carb., ℥ii; zinci oxidi, ℥ii; aquæ rosæ, ℥iv, our patient is relieved.

An application of one dram of resorcin in three ounces of water, or of rosewater ointment to the advancing border of dermatitis seborrhœica will check it.

Epilation is our sheet anchor in tinea barbæ. This should be done by the physician, the parts being thoroughly cleansed with hydrogen dioxide, and the ointment recommended for tinea tonsurans applied. The patient is to apply the same night and morning. After the hairs of sycosis non-parasitica have been removed, an ointment of ichthyol 30 per cent. in rosewater ointment has given satisfaction.

Eczema of the beard yields very slowly to treatment. The application depends on the stage of the disease. A chronic eczema requires a stimulating ointment, as oil of cade, one dram to the ounce of zinc oxide ointment; or, if moist, diachylon ointment; if inflamed the more soothing lotion of calamine and zinc is to be preferred.

Leucoderma we can do very little for, except to stain it with walnut juice to correspond in color with the surrounding skin.

It has been the writer's experience that the more one treats a case of chloasma, the larger the lesion grows. If it is due to internal or constitutional troubles, these conditions of course should be treated.

Tinea versicolor responds quickly to the application of green soap allowed to remain in contact an hour or more, then washed off, and a solution of hyposulphite of sodium, ℥i, in rosewater, ℥iv, thoroughly applied daily. If any part is overlooked, a reappearance is sure to follow.

156 West One Hundred and Nineteenth Street.

A RATIONAL METHOD OF TREATMENT IN CHRONIC ENDOMETRITIS.*

By JOSEPH M. RECTOR, M.D.,

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An advancement in the treatment of this disease should be a sufficient apology for calling attention to a generally neglected subject. Little thought has been recently spent upon it by the profession at large and few general practitioners or postgraduate students have any degree of practical knowledge concerning its exact condition, or its possible mode of relief. It has seemed wise to me that I should fully explain this method of treatment, in the hope that your time spent here tonight may prove of manifold advantage in your routine gynecological work. There is no disease peculiar to the female in which neglected or improper therapeusis will do so much harm to the patient or cause so much dissatisfaction to the physician.

Taking as a basis for my work a paper writen by Dr. A. H. Goelet, and read before the Gynecological Section of the American Medical Association in 1899, I have perfected the treatment which I shall here describe. The main objective symptom to which your attention is called and for which relief is sought, is "symptomatic leucorrhea." The presence of a discharge at the vulva, within the vagina, or at the external os uteri, will necessitate the determination, first, of its exact location, and, second, of its positive cause.

The mucous membrane of the body of the uterus is but one to two millimeters thick, resting smoothly upon the musculature of the organ, without any creases, folds, or projections. Many tubular glands with a single canal, spirally placed, and having a funnel-shaped orifice, open directly upon the surface. The interglandular structure is composed of connective tissue fibers, with many round, flat, star, and spindle-shaped cells. The secretion is normally alkaline and only sufficient in amount to keep the cavity moist. The epithelium is cylindrical and ciliated.

The mucous membrane of the cervix differs somewhat; it is thicker and more sharply divided from the muscular layer. Upon the anterior and posterior wall the membrane is thrown into transverse folds, after the manner of the ribs of a leaf and is often called the "palmæ plicatæ." The glands (glands of Naboth) are tubular with single canals, but having many lateral processes or projections with mouths opening into the valleys of the transverse folds. The mucous secretion is normally alkaline, of a thick, tenacious character, filling the canal and often projecting from the os externum. The round cells are fewer in number. Long and slender spindle-shaped cells are present. The epithelium is cylindrical and ciliated.

Continued passive congestion and infective disease are responsible for the pathological changes in the corporeal and cervical mucosa; with the one

*Read before the North Hudson County Medical Society.

follows the disturbance of correlation between vascular supply, innervation, and mutual relationship with other structures: with the other follows congestion and inflammation, plus the peculiar characteristics of the individual disease.

Simple catarrhal or congestive endometritis or hyperemia of the endometrium, results in a hypersecretion with a thin, watery, odorless, and non-irritating discharge. As the cervical mucosa becomes involved and its secretions are intermingled, we find the milky, albuminous leucorrheal discharge of a thick, ropy, and viscid consistency, mucoid at the cervix and opaque when passing into the vagina. With the correction of the congesting cause these symptoms disappear and the parts will return to their normal condition, provided this functional derangement has not resulted in pathological changes.

Long continued irritation and congestion bring about the changes found in the chronic form of this disease, to wit: primary infiltration and proliferation: secondary hyperplasia of muscle, glands, and connective tissue. Congestive endometritis and constitutional endometritis, subacute or chronic, are the familiar types of this disease. Proper care and adequate treatment must be instituted before the pathological process entirely obliterates the normal state. Here, as in other portions of the body, nature's trend is toward recovery, and our duty ceases when we have relieved the exciting cause and applied the proper treatment.

With the advent of infective disease, the leucorrheal discharge becomes creamy or yellowish, greenish or brown, or mixed with small quantities of blood: mucopurulent or purulent, odorless and non-irritating, or profoundly offensive and scalding: itself alkaline in reaction, but acid when intermixed with the acid products of inflammation and the decomposing secretions of the vagina. The amount varies from continuous moisture to a constant excessive discharge, requiring the continual use and constant change of the toilet napkin.

The first principles of modern therapeusis, as applied to diseased conditions affecting mucous surfaces, may be described as (*a*) frequent cleansing of the surface with a non-astringent, non-irritating solution, for the purpose of removing the adhering secretion; (*b*) opening the mouths of the glands, thus relieving any retained secretions and prevent germ propagation; (*c*) stimulating glandular activity directly, or indirectly through the secretory nerves; (*d*) replacing the normal equipoise between vascular supply, innervation and mutual relationship.

This is the exact purpose of the treatment I am about to describe and I have accomplished the same by means of the galvanic current, using the negative pole within the cavity of the uterus, and a simultaneous irrigation of a non-astringent, non-irritating solution.

Massey described the general action of the galvanic current as having the power of direct cellular stimulation to muscular tissue, glandular and secretory organs, independently of the innervating or trophic nerves, and this general tissue stimulation influences nutritive repair, lymphatic activity, and tissue metabolism. The negative pole has the power to dilate canals and increase moisture and drainage. Thus by interuterine negative galvanism, dilatation, irrigation, and drainage, I have fulfilled the requirements.

With the patient in the dorsal position and the dispersing (positive) electrode upon the abdomen, a speculum is placed in the vagina, with its blades generously separated. This brings into view the cervix and the adjacent parts. The active (negative) electrode is introduced into the uterus and a constant current of five to fifteen milliamperes turned on. Stronger currents are not to be used, for fear of the soft liquefaction and stricture which may follow its caustic action. The surrounding muscular tissue softens, by reason of abstraction of water from the tissues, bubbles of hydrogen gas will be seen issuing from the os uteri, and a copious watery or mucoid discharge flows readily from about the now loosened electrode.

After an application of five to ten minutes the sounds are removed and the irrigator, which is also an electrode, is inserted in their place. While the current is still passing the cleansing solution is allowed to flow. Upon withdrawal of the irrigator, the canal will be found softened, patulous, and free from discharge. The dilatation will remain a sufficient length of time to allow any additional application to be made to the cavity of either uterus or cervix and without any muscular interference.

To begin with, your source of supply and class of current must be perfect and absolutely under your control, positively free from any interruptions of current, sudden stoppage, or increased milliamperage. The milliampere meter must register accurately the amount and constancy of the current passing. The wires, binding posts, and electrodes must be properly insulated. The current must not be turned on until the electrode is in position, and must then be raised slowly to the required strength. The current must be slowly reduced before the electrode is removed. These precautions are advised because of the adverse mental effect that any disturbance will have upon the apprehensive patient. If the woman suffers any considerable amount of pain, burning sensation, or sudden electric shock, she will become frightfully nervous and insist upon ending the treatment.

It is well nigh impossible to obtain good work from a current generated by a collection of cells, because of the constantly changing cell power, by reason of improper care and the general ignorance of the ordinary physician regarding their management. Every community now has electric power for commercial use, and the company furnishing the same will willingly count you among its patrons. If the current supplied is a constant one (direct current) it can be carried directly to your cabinet, which must be wired to a corresponding voltage. If the current is an interrupted one (indirect current) it must first be used to operate a motor. The motor is connected with a dynamo from which will be generated the necessary direct or galvanic current to operate the office cabinet.

In beginning the dilatation, the size of the uterine electrode is selected which will readily pass into the canal without giving any pain: in the same gentle manner and with the same aseptic precautions as you would pass a uterine sound for diagnostic purposes. The electrode, which is best made of copper, and properly insulated, is passed onward until the collar which marks the beginning of the insulation, presses against the external os. The length of the exposed electrode is shorter than the canal, as I have found that when the tip of the electrode rests against the fundus of the uterus, the patient often experiences a disagreeable (temporary) attack of painful uterine contractions.

As the canal gradually dilates and softens, electrodes of increasing size are used, until the entire canal is sufficiently dilated to admit freely the irrigating electrode. As soon as the irrigator is in proper position and the desired current is passing,

the cleansing fluid is allowed to flow and freely wash the entire mucous surface. Thus we have the concurrent action of the passing current and the irrigating solution. It is well gently to move and rotate the irrigator during its use, as it facilitates the cleansing by bringing every part of the mucous surface under the action of the solution.

I have found one-half to one per cent. solution of the tincture of iodine to act best as the cleansing agent.

The dispersing electrode, 6 x 8 in., is made of copper, covered on its under side with felt and its upper side with rubber. Before making the contact, it should be well moistened with warm water and freely soaped.

The vaginal electrodes are made of copper, 11 inches long, have the usual pelvic curve, and vary in diameter from that which will penetrate the "pinhole os," to one which will give free dilatation. The entire length is insulated by being covered with vulcanized rubber to within two inches of the tip, in the smaller sounds, and two and one-half inches in the larger sounds. These larger instruments are used in the large subinvoluted uteri. An opening in the copper at the insulated extremity acts as the binding post.

The irrigator is 12 inches long, has a central hollow tube, ¼ inch internal diameter at the distal end, and 1-16 inch internal diameter at the uterine end. It has the usual pelvic curve. Beginning 2 inches from the uterine end, the tube is fenestrated on all sides. The fenestræ about the sides are larger than at the end. Around and about this irrigating tube are 4 small wires, which act as bridges and prevent the mucous surface from closing around the tube. They begin 4 inches from the uterine end and pass over it to be brought together ¼ inch beyond its extremity. The wires are raised from the tube along this entire length. The external diameter of the irrigator at the distal end is ⅝ inch and at the uterine end is ⅛ inch. The binding post is 1½ inch from the distal end. The irrigator is insulated by being covered with vulcanized rubber to within 4 inches of the uterine end.

Preferably a trivalve speculum is used, as the sides of the vagina are thus best kept apart. Beneath the handle a triangular pus basin is placed, which will catch all the return irrigating fluid or discharge, thus preventing the patient's clothing from becoming soiled.

In most instances, each application continues about ten minutes and is used every day or every other day, depending upon each individual case. The entire length of time under treatment will depend upon the progress made.

In the purulent forms of chronic endometritis, when the hyperplasia or hypertrophy has resulted in outgrowths or projections from the surface of the mucosa; or, when fungoid, polypoid, or hemorrhagic endometritis is present, the preliminary use of the curette is indicated.

EXAMPLES OF CHRONIC PRODUCTIVE INFLAMMATIONS IN EARLY LIFE.

By ROLFE FLOYD, M.D.,

NEW YORK.

THE chronic productive inflammations occurring so frequently in late middle life and old age are regarded by many observers as senile changes or replacement fibroses. Others, however, look upon this large group of connective-tissue changes as true inflammatory processes, due, like other inflammatory changes, to some irritant cause.

One argument in favor of the latter view, and one which seems very convincing to me, is the occasional occurrence of these changes in early life, before there is any senility, and before it is reasonable to suppose that the wear and tear of existence could wear out the parenchyma cells of the organs, and so prepare the way for the process of replacement fibrosis.

Another argument in favor of the inflammatory view is the fact that these changes seem, in some cases, to be due to the poisons of syphilis, of gout, or of alcohol.

I have three early examples of these chronic productive inflammations to report, two in the second decade, with no evident etiological factor, and one in the third decade preceded by three years of hard drinking.

CASE I. *Pulmonary emphysema, accompanied by hemoptysis, the symptoms beginning at the thirteenth year.*—Male, Russian, tailor by trade, 16 years old. Came to the Vanderbilt Clinic November 1, 1904. Three years before he began to spit blood on and off, to have a cough, to raise a little phlegm, and to have dyspnea on exertion. One year ago he had a few night sweats which did not recur. For five months he has been worse and has spit blood nearly every week. He has not lost flesh though he feels weak. He says he has had no fever. He has some headache at times. His appetite has been good and he has kept at work throughout.

Examination.—His general nutrition is fairly good. The percussion note is high pitched and of vesiculo tympanitic quality all over both chests. The breathing is of altered vesicular quality and obscured by sonorous and sibilant râles. A few fine râles are heard low in the right axilla. Neither I nor the Board of Health could find any tubercle bacilli in his sputum. He spat blood in my presence; it was bright and evenly mixed with mucus.

This patient was under observation at the clinic for 14 months. As his bronchitis and asthma improved somewhat under treatment, the sonorous and sibilant sounds diminished and the characteristic breathing of emphysema with its altered quality and prolonged expiration all over both chests became very distinct. No other changes occurred in the physical signs. There was always some bronchitis. There was never any localization of signs.

He spat blood at intervals through the entire period of observation, seldom going a month without this symptom.

He gained in flesh and strength in the spring of 1905, on the syrup of iodide of iron. He never lost any appreciable amount of weight, he never had fever, chills, or sweats and his general health remained fair. He did not stop working. Subsequent examinations of the sputum failed to reveal tubercle bacilli. January, 1906, I found him in substantially the same condition as when he first came under observation. After this he was lost sight of.

It should be stated that pulmonary emphysema is here regarded as a chronic productive inflammation of the lung, because, whether the lungs are enlarged or diminished in size, whether the air spaces are dilated or obliterated, the one essential pathological change in all cases of primary pulmonary emphysema is a proliferation of the connective tissue framework of the lung parenchyma.*

The above case, then, is an example of a chronic productive inflammation of the lungs occurring in early life and causing definite and gradually increasing symptoms.

*See Delafield's recently published "Lectures on the Practice of Medicine," Part II., page 396.

Case II. *Arteritis, discovered accidentally in a boy sixteen years old.*—Male, American, clerk by occupation; came to Bellevue O. P. D. on December 13, 1907, complaining of a dry cough of 3 or 4 weeks' duration. His father and mother are both living and well. He has three brothers and one sister, all well. Two children died in infancy, one from "pneumonia." His own health has always been good.

Examination.—Well nourished and well built; weighs 150 lbs. No evidences of hereditary syphilis. The mucous membrane of the throat is considerably thickened and somewhat congested. The lungs are normal. The heart is of normal size. Its action is good, regular, but rapid (from excitement); the sounds are normal, and there are no murmurs.

Both radial arteries are distinctly thickened, the left a little more than the right. There is no increased tension. The pulse corresponds to the heart action. The right temporal artery can be easily felt, while the left is scarcely palpable.

The urine has a specific gravity of 1.022. There is no albumin and no sugar. There are 10 grs. of urea to the ounce. After centrifuging, two or three hyaline casts were found.

This is an example of a chronic productive inflammation of the arteries occurring in early life and, as often, causing no symptoms whatever.

Case III. *Cirrhosis of the liver, with fatal hemorrhage at the twenty-fifth year of age.*—Male, American, butcher by trade, 25 years old; entered Roosevelt Hospital January 2, 1900. Three and one-half years ago he began to drink hard and did not stop until 6 months ago. Never had syphilis or rheumatism. Has always been well except for an attack of jaundice 12 years ago, which lasted 4 weeks and was not severe. Two years ago he began to suffer from morning vomiting and retching, which continued till he stopped drinking. One year ago he vomited about 2 quarts of dark blood in 24 hours and passed a considerable amount from the rectum. No pain was associated with this attack, but he felt pretty weak from it.

The same symptoms recurred one month later, but this time he only vomited about one pint of blood.

For the last 6 months, since he stopped drinking, he has felt well, his appetite has been good, and his bowels regular.

He never had a chronic cough, never had swelling of the legs or abdomen, no cardiac or renal symptoms, no bilious attacks. Occasionally has headaches, and lately often has nose bleeds.

At midnight last night he vomited 8 ounces of blood. He felt sick this morning but went to work, and vomited three more times—about 32 ounces in all. He has very little nausea and no pain, but slight abdominal discomfort. The blood he vomited was dark at first but bright the last time. His bowels have not moved since yesterday. He felt very weak after losing the blood, but feels stronger now that he is in bed.

Examination.—Color and nutrition good, tongue clean, some blood on the lips. Pulse regular and of good force—artery very slightly thickened, not contracted. Abdomen normal, no local tenderness. Extremities normal. Temperature 99° F. Pulse 118. Respiration 24. Urine specific gravity, 1.032, no albumin, a considerable number of pus cells.

He was given two rectal saline injections of one pint each. He was comfortable through the afternoon, but began to bleed from the mouth and rectum in the evening.

At 7:20 P. M. he vomited 12 ounces of blood; at 8:15 4 ounces; at 8:50 he expelled the saline solution from the rectum with about 16 ounces of tarry blood. Between 9 and 10 P. M. he lost 23 ounces by the mouth and 5 more from the rectum.

Between 10 P. M. and midnight he lost 12 ounces by the mouth. His pulse became weak and his skin and mucous membranes much blanched. There was very little or no air hunger and his mind was clear. He was given a saline venous infusion of 60 ounces. Between midnight and 6 A. M. on January 3 he lost 95 ounces in all. He became pulseless with irregular respirations and broke into a cold sweat. His mind was clear nearly to the end. He died at 6 A. M.

The pulse rate of 118 when he entered the hospital rose till it reached 140 at midnight; after this it could not be counted accurately. The respirations rose from 24 to 36. The temperature rose from 99° F. to nearly 101° F.

According to the figures here given he bled 207 ounces. This is a very large bleeding, even after allowing for inaccuracies in his own statement, the nurse's measurements, and the fact that the 60 ounces of saline which was put into his veins probably reappeared as blood. Besides this large external bleeding the stomach and intestines were found full of blood at autopsy.

Post Mortem Examination, done 12:30 P. M., January 3, 1900. Liver enlarged, surface irregular, on section shows extreme cirrhosis. Esophagus shows a pinhead aperture in a varicose vein 2 inches above the cardia. The veins in this region are considerably enlarged. Stomach and intestines contain fluid and clotted blood. Spleen is enlarged and firm. The pulp is of normal appearance.

Kidneys are enlarged. Show chronic diffuse nephritis. There is a retention cyst and a white infarct in the right.

Here, then, is a case of chronic productive inflammation of the liver causing death in the 25th year.

129 East Sixtieth Street.

Experimental Contribution to the Study of the Etiology and Pathogenesis of Rickets.—Antonio Iovane and Salvatore Forte have carried out experiments on animals with a view to finding out some of the etiological factors in rickets. Believing that intestinal autointoxication was one of the principal causes of the changes in the bones they injected into animals watery and alcoholic extracts of the feces of babies suffering from rickets, dyspepsia, and gastroerteritis, and produced in them disturbances of nutrition that seem to be identical with those found in rickets. The bony alterations were in outward appearance identical with those of rachitic children. The epiphyses were increased in size, and the long bones showed the same curvatures, the animals wabbling in their walk and the stomach hanging down to the ground. There was a marked softening in all the bones, the cartilage was thickened, and cartilage cells were found infiltrating the spongy bone. All the other histological lesions greatly resembled those in rachitic children. The amount of lime salts in the bones was diminished. The authors believe that one of the principal causes of rachitis is the absorption of the products of bad digestion. While the condition is not solely due to this cause and may result from several factors, this is an important one in producing it. They believe that the process is a sort of arrest of function in the forces which produce the transformation of materials into bone substance.—*La Pediatria.*

MEDICAL RECORD.

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THE SIGNIFICANCE OF THE GASTRIC MUCUS.

A NORMAL fasting stomach contains very little or no mucus, as the secretion of the latter is principally connected with the digestive period. After a test-meal, therefore, we should always find a moderate amount of mucus in the gastric contents under normal conditions, while any deficiency of it at this time must be considered abnormal.

In the February number of the *American Journal of the Medical Sciences* J. Kaufmann discusses the significance of the lack of mucus after test-meals, basing his views on the examination of several thousand cases. He has found that the amount of mucus is not proportional to the amount of gastric juice. In certain cases of achylia gastrica he found increased quantities of mucus and in others none at all. On the other hand, although cases of hyperacidity, as a rule, showed a lack of mucus, he observed cases of hyperacidity with increased mucus. The familiar symptoms of gastric irritation (burning, gnawing sensation, etc.) which usually occur in patients suffering from hyperacidity he found most pronounced in persons whose stomach contents were entirely free from mucus after a test-meal. When he found in other cases the same symptoms, with no excess of acidity, or with even subnormal acidity, together with a lack of mucus, he became convinced that the latter played a role in the etiology of the symptoms in both classes of cases. He relieved all the patients of their symptoms with silver nitrate lavage (using solutions from 1-5000 to 1-1000) and found the mucus increased after treatment, while the acidity remained the same, became lower, or at times even higher. This was further evidence that the lack of mucus accounted to some extent for the suffering, and that silver nitrate, as demonstrated by Pawlik years ago, increased the flow of gastric mucus.

No matter what the cause of the lack of mucus, whether due to diminished secretion, or whether it is dissolved or digested after secretion, Kaufmann holds that the lining of the stomach is thereby deprived of its protective agent. He believes the latter causes no symptoms if there is no gastric juice or gastric juice of low acidity, but if there is an active gastric juice or one of high acidity it will cause symptoms. He contends that the lack of mucus is one of the primary disturbances in the development of gastric ulcer, depriving the mucosa of its protection against harmful influences, particularly agaist the digestive activity of its own secretions. Kaufmann, while not underestimating the dietetic and medicinal treatment of simple ulcer, does believe that a treatment (silver nitrate lavage) which brings about an increase of gastric mucus helps to cure the ulcer. His findings corroborate clinically what Turck observed experimentally. The latter studied the factors concerned in the healing of artificially produced ulcers and demonstrated a great increase of mycogen cells during the process of repair.

RADIAL ARTERIOSCLEROSIS.

THERE has been much discussion as to what inferences one is justified in drawing with regard to the condition of the general arterial tree or of special central vessels, from the condition of the radial artery. To gain information on this point Thayer and Fabyan (*American Journal of the Medical Sciences*, December, 1907) undertook the study of the radial arteries in a series of consecutive post mortems in cases which had previously been observed clinically, at the same time examining bits of aorta just above the valves, and at a point just above the origin of the mesenteric artery, as well as a piece of the mesenteric vessel itself just below its point of origin.

Their material consisted of sixty-one cases, the ages of the subjects at death varying from fifty-six days to eighty-three years. They found the radial artery varied greatly in its general characters at different ages, the microscopical picture altering progressively with the age and growth of the individual. The changes were especially striking in the intima and most marked in the fifth decade when there was firm connective tissue in the intima and media. We thus see that it may often be difficult to draw a sharp line between the normal and the pathological radial artery, for what is normal at fifty would be pathological at thirty. They found that the radial was usually palpable after the twentieth year and became a firm tube after the fiftieth year. In the majority of cases in which they found anatomical thickening they had previously diagnosed it clinically, showing that a thickened vessel becomes evident to the palpating fingers.

Although the normal structure of the aorta and mesenteric artery is in some respects different from that of the radial, Thayer and Fabyan found the changes in their intima and media in the main identical with those in the radial. The connective tissue thickening was also especially noticeable in the fifth decade. In the mesenteric artery they found calcification less frequently than in the radial, but they encountered there plaques with fatty softening of the deeper layers of the intima and superficial proliferation, which were never found in the radial. In the aorta regressive changes were particularly prone to be in the form of necrosis with fatty changes and softening.

As a result of these studies one may say that when one finds an undue thickening of the radial artery, analogous changes will usually be found in the mesenteric artery and aorta. An unduly palpable radial indicates a strong possibility of the existence of regressive changes (calcification, atheroma) in some other part of the body, and it thus may be regarded as a signal of danger.

RATS.

In Great Britain and in its colonies and dependencies the rat is to be proceeded against without mercy. The league formed recently in London having as its object the extinction or perhaps it might be wiser to say the suppression of vermin, directed chiefly against the rat, is an imperial idea. The aims of this ambitious society were well set forth by that eloquent orator Sir James Crichton-Browne, the gist of whose declamations were "*delendus est mus decumanus.*" Unremitting war is to be waged against the brown rat, for in these days the black rat is almost a negligible quantity.

The Public Health and Marine Hospital Service of the United States is always prompt in investigating new sanitary measures likely to be of general benefit, and if such are found to be really good, of recommending their adoption. This has been the case in regard to the rat. The crusade against this dangerous rodent in San Francisco has been particularly vigorous, poisons of various kinds having been employed freely. There should be favorable opportunities in San Francisco to give trials to some of the bacteriological methods which are widely lauded in Europe, but which as yet have not been sufficiently put to the test to warrant any definite statements as to their efficacy. It is not only in San Francisco itself that energetic action has been taken against the rat. Oakland, Point Richmond, and Emeryville, Cal., are making equally strong efforts to oust the offending rodent and to provide effective defensive measures against its ingress. Buildings and stables are being rendered rat proof, and the use of metal garbage cans, in place of wooden utensils, has been enjoined.

Now that it has been proven that rats are in more ways than one a real menace to the health of the community, it is right and fitting that no reasonable and feasible steps should be spared, which are calculated to abolish or abate the pest of rats. Perhaps there are few, if any, who will believe that rats can be wholly extirpated, but, on the other hand, it is obvious that their numbers may be greatly decreased. They are always a nuisance of the first order, and as carriers of plague a source of public danger. From the standpoint of health they possess no redeeming qualities and the more quickly a great diminution in their numbers is effected the better it will be for everybody. It only remains now to discover the most effective means of wholesale destruction of those dangerous animals.

Traumatic Appendicitis.

Among the multifarious causes that have been alleged as being operative in the etiology of appendicitis, direct trauma has not received a great deal of attention. Still not a few cases are on record in which blunt violence in the neighborhood of the appendix has been immediately followed by inflammation of the organ, though various opinions are held as to the precise manner in which this effect was produced. In ten cases collected by Neumann it was found at the operation that nine of the patients had harbored fecal concretions in their appendices and this fact has been regarded by that author as of great significance in the causation of the inflammation, the assumption being that as the result of the sudden rise in intraabdominal pressure about the appendix the concretion occasioned a lesion of the mucous membrane through which infection readily took place. Sonnenburg is more inclined to regard the trauma as the incidental factor which causes a previously latent process to become active and is furthermore of the opinion that fecal concretions discovered at a subsequent operation are probably a secondary result of adhesions forming in consequence of the injury and giving rise to stagnation of the contents of the appendix. Sprengel also holds the view that the trauma calls into activity a preexisting process and that the concretions are of little etiological moment. The most recent case of this sort reported is one described by Ebner (*Berliner klinische Wochenscrift*, March 2, 1908), in which a young man who previously had been entirely free from any abdominal symptoms suddenly developed an acute appendicitis immediately after having received a violent blow in the right iliac region from the handle of a tool he was using. At the operation some weeks later an encapsulated abscess was found with a concretion lying free in its cavity. After an elaborate analysis of the possibilities, too long for reproduction, the author reaches the conclusion that the appendix was previously healthy but contained a concretion which on the occurrence of the trauma injured the mucosa and permitted the entry of microorganisms leading to the acute inflammation.

Nutmeg Poisoning.

Poisoning by the oil of nutmeg is a comparatively infrequent occurrence, although perhaps not so rare as is commonly supposed. Dr. Wallace, a few years ago, made somewhat extensive investigations into the matter, and concluded that cases of poisoning resulted exclusively from the use of the crude nutmeg or mace. Prof. A. R. Cushny gave an address on the subject before the Therapeutical and Pharmacological Section of the British Royal Society of Medicine on January 28, in which he said that as far back as 1576 Lobelius related a case in which a woman was rendered delirious by the ingestion of nutmeg, used probably as an abortifacient, although, according to Prof. Cushny, it does not seem to have this action. The symptoms are drowsiness, stupor and diplopia; delirium is often present, and on occasions the first symptom is burning pain in the stomach, precordial anxiety, or giddiness. In the case of a boy who died from the effects of eating two nutmegs the symptoms resembled those caused by cannabis indica. The speaker demonstrated that a powerful poison was contained in the oil of nutmeg, and stated that from experimental work he had come to the conclusion that the symptoms were to be attributed to the action on the central nervous system. This is depressed but exhibits some indications of stimulation in the form of restlessness, slight convulsive movements, and tremor. The oil also exerts a marked local action, whether given by the mouth or hypodermically. Another speaker, Dr. J. Gray Duncanson, was of the opinion that the oil of nutmeg might act as an abortifacient, and mentioned the case of a woman who aborted after taking, among other things, a nutmeg ground and suspended in gin. Nutmeg poisoning is given very scanty recognition in British medical literature, and is not very fully discussed in American works on toxicology. However, the subject is interesting from its very infrequency, as well as from the fact that opinions are divided with regard to the action of the substance as an abortifacient.

The Pathogenesis of Gallstones.

In 1905 Gerard showed that when the acid bile salts and cholesterin were added to artificial media, and the latter were inoculated with typhoid or colon bacilli, the cholesterin was precipitated. Since then other investigators have made similar experiments and obtained analogous results. In an article in the *Wiener klinische Wochenschrift*, of February 13, 1908, A. Exner and H. Heyrovsky, endeavor to show the reason for this precipitation. Various samples of filtered and sterilized human and ox bile were inoculated with colon bacilli. A chemical examination before and five days after inoculation showed that the acid bile salts were considerably diminished after inoculation, *i.e.* were partly decomposed and that cholesterin had been precipitated. The same occurred after a bouillon-bile mixture was inoculated with colon bacilli. Remembering that cholesterin is soluble in the acid bile salts they concluded that the decomposition products of the latter did not dissolve cholesterin. Therefore the more of the acid bile salts that was decomposed the more cholesterin was precipitated. They made further experiments to ascertain to what degree the various bacteria caused the disintegration of sodium taurocholate and glycocholate. They found that at the end of five days the typhoid bacillus had decomposed more acid bile salts than proteus, pyocyaneus, *Bacterium coli, Bacterium friedländer, Staphylococcus aureus,* or streptococcus. In the order mentioned each of these decomposed a little less of the acid salts than the other, the streptococcus being the least powerful in this respect. As most gallstones consist mainly of cholesterin, and as precipitated cholesterin tends to the formation of stones, it becomes clear that those bacteria which cause the greatest disintegration of the acid bile salts will play the most important rôle in the formation of gallstones. The bacteria, on the other hand, which cause but little decomposition of these salts are probably not the cause of gallstones. Thus the streptococcus, when present in the bile of cholelithiasis cases, must be considered the cause of a secondary infection rather than an etiological factor in the formation of the stones.

The Opsonins in Diagnosis.

Although the determination of the opsonic index has not proved either as necessary or as practical for purposes of control in vaccine therapy as it was at first expected, the method is one that has many theoretical bearings and forms an important step in the investigation of the problems of immunity. It has already established itself as a useful adjunct to the resources of the laboratory worker and will probably be found of use in various directions not at first contemplated. For example, Schottmüller and Much point out in the *Münchener medizinische Wochenschrift*, March 3, 1908, an application of the method which has not yet been very widely adopted, viz., its use as diagnostic measure in disease, and as a means of differentiating closely allied groups of microorganisms. Inasmuch as the index of an individual suffering from infection with a definite organism is either higher or lower than that of a normal person, and this peculiarity is specific, if infection with a certain bacterium is suspected it suffices to determine whether or not the patient's index for this organism is different from the normal. The principle may also be reversed and used for determining the identity of a given organism by testing this with serum from a patient suffering from a known infection. The authors have employed this reaction with great advantage in several instances of obscure gastrointestinal and other infections and say that it is very useful clinically since it appears early in the disease and in very mild cases, that is, before the agglutination reaction is available, and in instances where this would be very slight. By its means they have been able to determine the pathogenicity of an intestinal organism culturally extremely close to the colon bacillus, and have demonstrated the harmlessness of the so-called Jäger form of the diplococcus of meningitis.

The Problem of Disinfection.

Prof. H. Kenwood, a recognized British authority on disinfectants and on disinfection generally, recently read a paper on the subject in London. Among other valuable information he gave was the fact that there is an advantage in the use of disinfectants in a warm condition. The physical conditions under which germicidal tests are made are of greater importance than is usually thought. The atmospheric temperature is of great importance. A precise temperature, 20° C., has been fixed by the Lister Institute as of necessity, if strictly comparable results are to be obtained. In regard to disinfecting rooms which have been occupied by persons suffering from infectious diseases, Prof. Kenwood appeared to be in agreement wth the custom followed in some parts of America not to disinfect rooms at all unless the patient had been detained in them for a long period. From the standpoint of efficiency there can be little to choose between different methods of disinfection, provided that it is recognized that they represent but one step of several which are necessary for the complete disinfection of the room and its contents, and that the most important of these steps are the washing down with soap and a disinfecting solution of all those surfaces on which dust, and with it germs, can settle, and the removal, for steam disinfection, of all articles into which germs can penetrate. It is somewhat curious that as yet we have no exact knowledge as to the efficiency of various disinfectants, nor indeed with regard to the exact value of disinfection in general. So far as the disinfection of rooms is concerned, there is considerable doubt with respect to its value as a means of preventing the spread of disease. Probably it is not money wasted to disinfect rooms, and as long as there is a doubt on the subject, it will be best to be on the safe side and to continue to disinfect.

News of the Week.

The State Anti-Tuberculosis Exhibit. — The Rochester Public Health Association will conduct an anti-tuberculosis campaign from March 30 to April 3 inclusive. The traveling tuberculosis exhibit of the State Department of Health will be held free in Convention Hall, and each day there will be lantern lectures at 3 and 8 P. M. Among the lecturers will be Mrs. James E. Newcomb, president of Stony Wold Sanatorium; Dr. John B. Huber, Dr. Lewis Gregory Cole, Professor George M. Forbes, Professor C. W. Dodge, Dr. J. Franklin Bock, Dr. Albert C. Snell, Dr. A. C. Root, Dr. Francis E. Fronczak, Miss Sophia F. Palmer, Dr. S. A. Knopf, Health Commissioner E. H. Porter, Mr. Homer Folks, Dr. W. R. Taylor, and others. All the lectures will be free and open to the public. The secretary of the association is Dr. M. E. Leary.

For a Public Health Institution in Baltimore.—A large delegation from the Medico-Chirurgical Faculty of Maryland was given a public hearing last month by the legislature at Annapolis in favor of a bill appropriating $100,000 for the erection of a public health institute and medical library building in Baltimore.

Folsom Fund of Harvard University.—The fund collected by the friends of the late Professor Charles Follen Folsom of the Harvard Medical School amounts to more than $10,000, and will probably be used to found in the school a fellowship in hygiene or mental diseases. Professor Folsom was graduated in 1862 and for nearly twenty-five years was a member of the faculty. From 1891 to 1903 he was one of the board of overseers.

New Isolation Building of German Hospital.—Last Saturday the new isolation building of the German Hospital for the care of patients with contagious diseases was formally opened. The building is a two-story structure containing sixteen rooms and was erected at a cost of $30,000, the greater part of which was given by Jacob Ruppert. The rooms are divided into groups of three, each group having its own bathroom, pantry, kitchen, nurse's room and telephone. They can be washed from floor to ceiling with hose and disinfectants, and each room has its own ventilating flue communicating with a chimney in which the air is sterilized by heat before being allowed to escape.

Protest Against Quarantine.—Governor Magoon is said to have announced his intention of protesting against the establishment of an American quarantine against Cuba on April 1 on the ground that it is a violation of the convention between the United States and the Latin-American republics. This provides that no quarantine shall be established unless yellow fever is reported within five days of the sailing of a vessel.

American School Hygiene Association.—The second annual congress of this society will be held in Atlantic City on April 17 and 18, 1908, and a long list of topics relative to the welfare of school children has been prepared for discussion.

Lumières Process of Color Photography.—In its issue of March 10 the *Münchener medizinische Wochenschrift* supplies as a colored supplement to an article on the above subject by Wilms and Eggenberger reproductions of two plates made by this process. One picture is of a cancer *en cuirasse*, and the other of senile gangrene of the leg, the reproductions being made by the ordinary three-color process. The merit of the procedure as applied to illustrative purposes consists in the fidelity with which the colors of the subject are reproduced, and in the simplicity with which the colored picture to be copied is obtained.

Street Railway Fatalities.—The report of the Public Service Commission shows that during February there was a considerable decrease in the number of persons killed as the result of street railway accidents. For this month the total number of those injured was 2,157, as opposed to 2,500 for January and 1,937 for December. The number of killed was 26, while for the two preceding months the figures were 44 and 51 respectively.

Death After Tonsillotomy.—The death of a four-year-old child from hemorrhage after tonsillotomy is reported from one of the special hospitals in this city.

Christian Science Healers Held.—A coroner's jury after investigating the circumstances attending the death of a farmer dying at Ramsey, N. J., while under the care of two Christian Science healers from this city, held the men responsible for the death and they were arrested. At a hearing before the county judge in Hackensack they were released under $500 bail each.

Christian Science in Maryland.—After a long contest the Maryland State Senate on March 19 passed a bill preventing Christian Scientists or faith healers from practising in Maryland without the diploma of regular physicians. The bill has already passed the House.

The Gibbs Prize of the New York Academy of Medicine has been awarded to Dr. Norman Edward Ditman for an essay on the Etiology, Pathology, and Therapeutics of Diseases of the Kidneys.

Against Opium in China.—As a part of its campaign against the habitual use of opium the Chinese government has issued an imperial decree ordering the governors and viceroys to restrict the cultivation of opium in consideration of the reduction of importations of the drug from India.

American Medico-Psychological Association.—The sixty-fourth annual meeting of this organization will be held in Cincinnati, Ohio, May 12 to 15, 1908, under the presidency of Dr. Chas. P. Bancroft. The secretary is Dr. Chas. W. Pilgrim of Poughkeepsie, N. Y.

Western Massachusetts Homeopathic Medical Society.—At a meeting of this organization, held in Springfield on March 18 the following officers were elected: *President*, Dr. E. W. Capen of Monson; *Vice-Presidents*, Dr. S. A. Lewis of Springfield, and Dr. T. P. Putnam of Springfield; *Secretary and Treasurer*, Dr. J. B. Comins of Springfield.

Otoe County (Neb.) Medical Society.—At the annual meeting of this society held in Nebraska City on March 7 the following officers were elected: *President*, Dr. A. P. Ginn; *Vice-President*, Dr. M. M. MacVean-Edmonds; *Secretary and Treasurer*, Dr. Frank S. Marnell.

Autauga County (Ala.) Medical Society.—This society, at its annual meeting held in Prattville on March 7, elected the following officers: *President*, Dr. J. E. Wilkinson, Sr.; *Vice-President*, Dr. J. W. Hagler; *Secretary and Treasurer*, Dr. J. E. Wilkinson, Jr.

Yellowstone County (Mont.) Medical Association.—The officers of this society elected at the meeting held in Billings on March 8 are as follows: *President*, Dr. James Chapple; *Vice-President*, Dr. Andrew Clark; *Secretary*, Dr. L. W. Bishop; *Treasurer*, Dr. Carl Shulin.

Northeast Arkansas District Medical Society.—The following were elected as officers at the meeting of this organization held in Jonesboro on March 11: *President*, Dr. L. H. Hill of Greenway; *Vice-President*, Dr. W. J. Robinson of Portia; *Secretary*, Dr. Olive Wilson of Paragould.

Ontonagon County (Mich.) Medical Society.—The annual meeting of this society was held in Ontonagon on March 4, and the following officers were elected: *President*, Dr. J. S. Nitterauer; *Vice-President*, Dr. E. J. Evans; *Secretary*, Dr. E. W. Knowles; *Treasurer*, Dr. W. B. Hanna.

Silver Bow County (Mont.) Medical Association.—The following officers were elected at the meeting of this society held in Anaconda on February 26: *President*, Dr. W. L. Renick; *Vice-President*, Dr. T. C. Witherspoon; *Secretary*, Dr. Phoebe Ferris; *Treasurer*, Dr. N. Smetters.

Wharton and Jackson County (Tex.) Medical Association.—This association elected the following officers at its annual meeting held in Wharton on February 23: *President*, Dr. W. B. Huvey of El Campo; *Vice-President*, Dr. G. L. Davidson of Wharton; *Secretary and Treasurer*, Dr. A. L. Linecum of Louise.

The Cincinnati Academy of Medicine at its annual meeting held on March 2 elected the following officers: *President*, Dr. Wm. Gillespie; *Vice-Presidents*, Dr. R. B. Hall and Dr. Stephen C. Cone; *Secretary*, Dr. Mary Keyte Isham; *Treasurer*, Dr. A. G. Drury; *Librarian*, Dr. Arch. I. Carson.

American Gastroenterological Association.—The eleventh annual meeting of this organization will be held in Chicago June 1 and 2, 1908, under the presidency of Dr J. P. Sawyer of Cleveland. The secretary is Dr. Charles D. Aaron, 32 W. Adams avenue, Detroit, Mich.

Obituary Notes.—Dr. William Bradford Eaton of Haverford, Pa., died at Bryn Mawr, Pa., on March 17 of septicemia acquired at a post-mortem examination, at the age of thirty-nine years. He was graduated from Wesleyan University in 1889, and from Haverford College in 1890. He pursued medical studies in the University of Berlin and later became pathologist to Jefferson Hospital and to the Bryn Mawr Hospital. He was registrar to the Board of Health of Delaware County.

Leonardo Da V. Judd died at Philadelphia on March 18 at the age of sixty-seven years. He was graduated from Jefferson Medical College in the class of 1877.

Dr. Frank B. Bysfield of St. Louis died on March 9 at the age of sixty years. He was born in Rocheport, Mo., and served through the Civil War in the Ninth Missouri Cavalry.

Dr. E. H. Lathrop of Hastings, Mich., died on March 7 of nephritis at the age of sixty-nine years. Dr. Lathrop served through the Civil War and for eleven months was a prisoner in Andersonville. He had practised in Hastings since 1871.

Dr. E. F. Richardson of Onaga, Kan., died on March 12 at the age of forty-five years. He was born in Smith County, Va., and was graduated in medicine in Kansas City in 1887. In that year he began practice in Onaga and remained until his death.

Dr. J. M. Sadler of Montgomery, Ala, died suddenly of apoplexy on March 7 while attending a meeting of the Montgomery Medical Society. Dr. Sadler was born in Rockhill, S. C., in 1850, and received his medical education at Tulane University, New Orleans. He practised for a time in Uniontown, Ala., but removed to Montgomery in 1895.

Dr. Charles F. J. Kennedy of Springfield, Mass., died on March 12 of gastric ulcer at the age of forty-one years. He was born in Philadelphia and was graduated from the University of Pennsylvania Medical College in 1891, and at once began practice in Springfield.

Dr. Frank L. Benedict of Portsmouth, N. H., died on March 14 at the age of fifty-two years. He was a native of Great Barrington, Mass., and was graduated from the New York Homeopathic Medical College in the class of 1879 and had practised in Portsmouth for twenty-three years.

Dr. John C. Cook of Chicago died on March 21 at the age of fifty-eight years. He was a native of Kentucky and was graduated from the Northwestern University Medical School in 1880, since which time he had practised in Chicago.

Dr. S. M. Carrigan of Hope, Ark., died suddenly on March 9 at the age of fifty-two years. He was graduated from the Missouri Medical College at St. Louis in 1807 and was president of the Arkansas State Medical Association.

Dr. John A. Wilson of Nickerson, Kan., died on March 1 at the age of fifty-seven years. He was a native of Ohio and was graduated from the Kentucky School of Medicine at Louisville in 1881. He had practised in Nickerson since 1887.

Correspondence.

OUR LONDON LETTER.

From Our Special Correspondent

ROYAL SOCIETY OF MEDICINE—FIRST ANNUAL MEETING—INFLUENZA—MEDICAL INSPECTION OF SCHOOL CHILDREN—STATE REGISTRATION, NURSES, MIDWIVES—OBITUARY.

London, March 6, 1908

The Royal Society of Medicine held its first annual meeting on Tuesday and the report may well gratify the advocates of amalgamation. The total number of Fellows is now 2,025 and there are more than 600 members of sections. The treasurer's report is just as satisfactory—surplus of assets over liabilities £39,683, excess of income over expenditure during the six months £778. During the last three months 317 Fellows have been elected who had not been previously connected with either of the amalgamating societies. A vote of thanks to the president, Sir William Church, for his services in establishing the society on the present basis and his conduct in the chair, was unanimously adopted.

Influenza continues to claim many victims, and the recoveries are often characterized by protracted convalescence, to say nothing of relapses and the many complications. The epidemic seems to have spread over the whole country. Reports from the large towns are constantly issued, but I also hear frequently of small villages providing a number of cases. Here in London there has been a steady increase for a couple of months, and pneumonia, as would be anticipated, has caused more deaths than the average. At the same time, those from bronchitis have been below the average, though the numbers have in some weeks been above. The mortality from influenza during the last four weeks has been 32, 34, 84, 126.

The Board of Education seems to have a curious idea of what medical inspection of children means. The schedule issued by this authority for the guidance of the doctors comprises the family history, while the personal condition of the child is required to be examined according to the points laid down in twenty-four separate paragraphs. The board considers that the "inspection of each child should not occupy on the average more than a few minutes." Yet the board says the inspection should "take account of the following matters: (1) Previous disease; (2) general condition and circumstances—height, weight, nutrition, cleanliness, as well as clothing; (3) throat, nose, and articulation; (4) external eye diseases and vision testing; (5) ear disease and deafness; (6) teeth; (7) mental capacity—normal, backward, or defective, and (8) present disease or defect."

I should like to make the person who drew up this program accompany me to a school and write down to my dictation the remarks I might make on each point and see how many minutes it took him to do so.

Registration, notification, and State regulation are still advocated by many as panaceas for the troubles of doctors as well as patients. The profession was induced to advocate the registration of midwives. At any rate, consulting obstetricians urged the scheme and many general practitioners who could afford to give up midwifery followed their lead. Others, who saw objections and had reason to fear loss of income, were too apathetic to organize resistance and are now complaining that the certificated midwives are taking no small part of their practice. Moreover, they declare that this new order of practitioner, under the control of the Central Board, on which eminent accoucheurs sit, is interfering with the treatment of patients and undermining the authority of the family doctor when he is called in. I have heard some remarkable instances of this, which make me think that the doctors have not

such great cause for rejoicing at the result of the midwives' registration.

Another cry of the kind is now being raised, viz., for the State registration of nurses. It is said and may well be believed that all the self-governing associations desire registration, though when its advocates add that the whole medical profession is in favor of it some doubts may be entertained. The apathy of the majority may again allow the enthusiasts to carry out their scheme, and it is possible, too, that in such case not a few vain regrets will be expressed when it is too late.

There was a public meeting recently to advocate registration "as a matter of national importance" and to support the bill which has been brought into Parliament for this purpose. At this a letter was received from Sir Victor Horsley expressing sympathy with the movement, and Dr. Langley Browne, a direct representative of the registered practitioners on the General Medical Council, attended and spoke in its favor. He professed he could not understand the opposition to it as the only way by which trained nurses could distinguish themselves from the untrained and unfit. There are, nevertheless, many who do understand the opposition and who ask whether a hospital training is a guarantee of character and an assurance that the nurse will obey the doctor instead of circumventing him. On the whole, I cannot admit that Dr. Browne really represents his constituents. Still less that another medical man who followed him was justified in saying that the profession has "plumped" for registration.

Dr. Hyslop, the resident physician of Bethlehem Hospital, spoke of the claim of mental nurses to separate recognition in any scheme of registration, and related how, as recommended by the select committee of the House of Commons in 1905, the Medico-Psychological Association had taken steps to provide a register of asylum-trained nurses, though he added that some form of registration of asylum nurses had been in existence for many years. The training for the association's certificate extends over three years and must be in not less than two institutions. He claimed for asylum nurses recognition as specially fitted for the care of mental cases.

It should be observed here that Bethlehem and some other institutions have admitted nurses trained in general hospitals who desire to add to their knowledge by some experience in mental disorders, and it is obvious that a general hospital training affords no guarantee of efficiency in the care of the insane.

There was yet another special claim put forward at this public meeting, viz., one for nurses in fever hospitals. The question of their efficient training is of no slight importance, but if specialties in nursing are to be multiplied is the scheme for general registration feasible? The opposition, too, are saying that with these specialists we might be worse off than we are.

Dr. Mapother, formerly president of the Royal College of Surgeons in Ireland, died on Tuesday, aged 72. After a very distinguished career in Ireland he came and settled in London in 1888. He was a graduate of the Royal University, 1857, with highest honors and the gold medal, and took the F.R.C.S.I. in 1862, became consulting surgeon to St. Vincent's Hospital and St. Joseph's Hospital for Children, professor of physiology at the college, examiner at the Queen's University, and president and vice-president of several Dublin societies. He was surgeon to the Lord Lieutenants of Ireland from 1880 to 1885. He took the Carmichael prize in 1868. His "Manual of Physiology" ran through three editions, and his "Lectures on Public Health" was as successful. He was recognized also as a learned dermatologist, his lectures on that subject reaching a second edition in 1875 and a further series of "papers" on it in 1899. Among other contributions I may name the articles on skin diseases in Quain's Dictionary of Medicine.

Mr. Reginald Harrison died on Friday at the age of 70. He was a Bart's alumnus, took the M.R.C.S. in 1869 and the Fellowship in 1866. He had been surgeon to the Liverpool Royal Infirmary and lecturer on anatomy and surgery in the school. He had also been professor of clinical surgery at the Victoria University. He became Hunterian professor of pathology and surgery of the Royal College of Surgeons, a member of the Council, and in due course served as vice-president. He had also been president of the Medical Society of London, vice-president of the Medico-Chirurgical Society and Honorable Fellow of the American Surgical Association, the Chicago Academy, and some foreign societies. He was consulting surgeon to St. Peter's Hospital and other charities. His work on "Surgical Disorders of the Urinary Organs" passed through several editions, and his works on lithotomy, lithotrity, the prostate, and allied subjects are well known. He was a contributor to several important works, including *Ashurst's Cyclopedia* and the *XXth Century Practice*, *Liverpool Reports*, and the *Clinical Journal*.

Sir Alfred Cooper, another vice-president of the Royal College of Surgeons, died on Tuesday at Mentone, aged 70. He was consulting surgeon to the West London, St. Mark's, and the Lock Hospitals, surgeon to the Royal Society of Musicians, had been surgeon to the late Duke of Edinburgh (Saxe-Coburg and Gotha), and a surgeon-major in the volunteers. He qualified in 1861, took F.R.C.S. in 1870, and was vice-president in 1903. His work on "Syphilis and Pseudo-Syphilis" went through two editions, as did his "Diseases of Rectum and Anus." He contributed various papers to the journals, served as president of the West London Medico-Chirurgical Society and vice-president of several other associations. He was an honorary member of the St. Petersburg Medical Society and was made chevalier of the Order of St. Stanislaus, Russia, in 1874. In 1902 he was knighted.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE CONJUNCTIVAL TUBERCULIN REACTION—COLD AND TETANUS—GASTROENTEROSTOMY WITH A PERMEABLE PYLORUS.

PARIS, February 5, 1908.

AT the meeting of the Académie de Médecine, Calmette urged the advantages of his conjunctival reaction in tuberculosis, and emphasized its value in the combat against tuberculosis as a disease of the masses. He stated that the procedure sufficed to determine with almost absolute accuracy the existence of tuberculous lesions at a period before any clinical signs were apparent. The tuberculin used should have been purified by three precipitations with alcohol, followed by drying in vacuo. The powder thus obtained was redissolved in physiological salt solution in the proportion of 1 to 100. A single drop of this solution placed at the inner angle of one eye produced the characteristic reaction in tuberculous individuals. For use in children, a 0.5 per cent. solution was preferable. In describing the reaction, he said that it varied very much in intensity, sometimes being very evident in four or five hours, and disappearing within twelve or sixteen hours. Sometimes it did not appear until twenty-four or forty-eight hours had elapsed, and it then lasted for five, or even six, days. It had been tried on thousands of cases, and seemed to have demonstrated its reliability and harmlessness, while the simplicity of its application entitled it to adoption by clinicians. It was, furthermore, useful in facilitating the decision as to what should be done with a patient, and afforded the best of arguments for requiring either his isolation or his removal to the country or a sanatorium. The method would also be useful in dealing with the children of tuberculous patients, and there was no doubt that it would be of the greatest value in the restriction of the disease among the population at large.

This paper was followed by an animated discussion, in the course of which Prof. Delorme criticised the speaker's conclusions. He considered that Calmette's views should not be accepted, as they involved many disadvantages and might even be dangerous. The ophthalmo reaction had no value except as one feature of a series of symptoms and frequently gave rise to errors in interpretation. Its use by military surgeons was contraindicated, and while the ocular complications sometimes caused were rare, they were sufficiently serious to restrict the applicability of the procedure. In replying to Delorme, Calmette said that he considered that the diagnosis of tuberculosis should not be concealed either from the patient or from his family, particularly now that, thanks to new methods, it might be made sufficiently early to afford a maximum chance of cure. He quoted the results obtained in 14,000 cases, reported by clinicians of many different countries, which showed that the reaction is positive in 92 per cent. of cases of undoubted tuberculosis, in 61 per cent. of the suspicious cases, and in 18 per cent. of individuals apparently healthy or suffering from supposedly nontuberculous affections. As for the rare local complications, they could not in any respect be ascribed to the procedure itself, for very simple precautions sufficed to avoid them. Delorme replied to this that the ocular reaction to tuberculin was not specific. Arloing of Lyons had shown by recent experiments which were well in accord with observations on the human body that other toxins than that of the tubercle bacillus, such as the toxins of the typhoid bacillus, the diphtheria bacil-

lus, and the staphylococci, might give rise to positive reactions. Furthermore, the test was not infallible, and in a third of the cases was very disagreeable, an important reason for not employing it in the army, which was not organized to serve as a proving ground for experimental medicine.

Vincent presented an interesting paper on the influence of cold on the etiology of tetanus. Numerous observers had described cases of tetanus occurring in persons exposed to prolonged chilling, even though no traumatism was caused. Until now, no experimental evidence was available to explain this action of cold in favoring the development of the disease. Vincent had found that exposure of the entire body to cold was not a potent predisposing factor in dealing with large animals. For example, in order to obtain positive results, it was necessary to reduce to 28° C. the internal temperature of guinea-pigs. While general chilling had only a slight influence on the etiology of tetanus, the case was different with local exposure to cold. If the hind leg of a guinea-pig was held for one or two hours under a stream of cold water while the rest of the body was kept warm, and tetanus spores were then injected under the skin of the limb, the disease appeared after a very short period of incubation and killed the animal with great promptness. Local peripheral chilling, therefore, had a powerful effect on the etiology of tetanus, while the exposure of the entire body to cold seemed of little importance. This matter, therefore, might have considerable significance in regard to the origin of infectious diseases in general. Such disorders could not always be explained as the results of simple inoculation, for the pathogenic microorganism was an essential but not an all-sufficient causative factor. In studying the pathogenesis of the infectious diseases, it was necessary to accord considerable importance to the influence of various secondary factors, such as prolonged fatigue, intoxication of exogenous nature, autointoxication, traumatism, or impairment of the hepatic functions. All of these conditions, by themselves or associated, as well as cold, had an unfavorable effect on the leucocytes, restraining their normal activity and preventing them from engulfing the pathogenic microorganisms, and, therefore, permitting these to flourish.

At the meeting of the Societié de Chirurgie, the subject for discussion was the efficacy of anastomoses between the stomach and intestine when the pylorus was permeable. Pierre Delbet presented the stomach of a dog that had been subjected to gastroenterostomy. Mechanically, the operation was perfect, but in the living animal no food or liquid escaped from the stomach through the artificial opening. This observation, which had been made in all the animals subjected to the operation, but with a permeable pylorus, explained why it was that in cases of moderate stenosis of the pylorus in man, gastroenterostomy did not always afford the expected relief. This was usually thought to be due to some error of technique, whereas it was really a physiological phenomenon.

An animated discussion followed the reading of this paper. The first speaker was Ricard, who thought that Delbet's observations showed that it was advisable to restrict gastroenterostomy to those cases in which the pylorus was not patent. Under these conditions, the procedure would be of service. He considered that the best method for performing the operation was that of von Ackere. The opening should be large, and be made at a point as near the pylorus and as low down as possible. Souligoux thought that the experiments reported showed clearly that in a muscular organ with longitudinal and circular fibers the contents always tended to take a longitudinal direction. After a gastroenterostomy, if the pylorus was permeable the longitudinal fibers continued to drive the food toward the pylorus, while the circular fibers tended to close the new gastrointestinal opening. Guinard thought that gastroenterostomy brought great relief and often a cure to patients suffering simply from pyloric spasms.

Monprofit, on the other hand, thought that it was not necessary for the pylorus to be obstructed in order to have gastroenterostomy prove effectual. He described several cases in which new growths or ulcers were situated on the lesser curvature, leaving the pylorus uninvolved, but in which gastroenterostomy alleviated the symptoms. Legueu had also been able to study a patient who, two years previously, had been subjected to gastroenterostomy for an obstinate dyspepsia unaccompanied by any symptoms of pyloric stenosis. The Roentgen ray examination of the stomach had shown that all of the food which was ingested was passed out of the stomach through the new opening, and in spite of the fact that the pylorus had remained permeable, nothing whatever passed through it into the intestine, everything taking by preference the new route which had been opened by the operation.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

CONJUGAL DIABETES—DENTAL DISPENSARIES FOR SCHOOL CHILDREN—LARGE FAMILIES AMONG THE WORKING CLASSES—ROENTGEN RAY TREATMENT OF CHRONIC BRONCHITIS AND ASTHMA—VESICAL PAPILLOMATA.

BERLIN, February 15, 1908.

At the meeting of the Society of Internal Medicine, Senator delivered an address on conjugal diabetes, which was especially interesting for practitioners. He said that the statistics so far available were not sufficient to elucidate the question of the transmissibility of the disease. For example, in 1890, Schmidt had found twenty-six diabetic married couples among 3,200 diabetic patients, Naunyn had found 18 among 775, Poisimeau about 50 among 5,000, while he himself had found 9 among 770 private patients, and 15 among 897 dispensary patients. In gathering further statistics a point should be made of determining what was the proportion of married persons among diabetics, and, furthermore, what was the period of incubation. In the couples observed by Senator, the interval before the first patient's partner developed the disease varied from one to fifteen years. That it is possible for several cases of diabetes to have a common cause was shown by various reported instances. For example, Senator had seen a physician who had become diabetic after amputating the thigh of a patient having the disease, and not long afterward five cases appeared in the same street of a small city, the patients being an innkeeper and four habitués of the inn. That infection is possible in diabetes was shown by animal experiments, in which the disease was caused in animals by the injection of diabetic urine, gastric contents, and feces. As all of these facts, however, had no decisive value, it was desirable that practitioners should gather new statistics in reference to the question.

The suburbs often surpass Berlin itself from the standpoint of social hygiene; for example, the first forest school was founded in wealthy Charlottenburg, and this city has also been the first to establish a dental dispensary for school children. Three dentists have been appointed to give free treatment to children whose teeth are defective and whose parents are in poor circumstances.

The province of social medicine is also involved in a very interesting address delivered before the Society for Social Medicine by C. Hamburger on the question of the prevention of conception in the families of the poor. He said that every conception which did not result in increasing the number of self-supporting persons by one unit represented a loss to the nation. In order to obtain satisfactory population statistics, it was, therefore, necessary to determine in how many instances the products of conception did not become individuals reaching an age at which they were able to yield a return for what they had cost. At present an answer to this question was impossible, as adequate figures concerning abortion were not available. Every premature death and every still-birth or abortion was a drain on the resources of the workingman's family through the reduction in the mother's strength and in the buying capacity of the family, owing to the expense for midwives, funerals, and other necessaries. He himself had found that 1,042 wives of workingmen had 7,261 conceptions representing an average of 7 for each marriage, whereas among the well-to-do it was 3.5. Among the working classes, more than half the infants died prematurely, a third through death and the rest through abortion, and not quite 50 per cent. attained the sixteenth year of life. In the German Empire, in order to maintain the number of survivors constant, three conceptions per marriage would be required; four conceptions per marriage would increase the population annually by about four hundred thousand. In the combat against infant mortality, under present conditions, the most effective measure was the reduction of conceptions. Less broad measures, such as encouraging mothers to nurse and the better care of infants, while important, in the long run would be ineffectual, for the regular increase in loss corresponding to the increase in the average of conceptions proved that the support of the children exhausted the resources of the parents. The dogma of the benefits of large families should disappear, for it was evident that every increase in the ratio of conceptions was attended by still greater increase in infantile mortality. A restriction of conception would involve no danger for the State, for the diminution in births was more than compensated for by the reduction in mortality.

Immelmann read a paper before the Medical Society on the treatment of chronic bronchitis and bronchial asthma by means of the Roentgen rays. He had found that both the acute asthmatic attacks and the associated bronchitis were very favorably modified by the use of the Roentgen rays. In many cases only a few treatments were required in order to effect the desired result. He agreed with Schilling in believing that the rays influenced the mucous cells. The patients are treated twice a week, no diaphragm being used. It is probable that the effect is to cause the cells to evacuate their contents more rapidly than usual, but there is also the possibility of some connection with the eosinophile cells and the Charcot-Leyden crystals.

Before the same society, Casper spoke concerning recurrences of vesical papillomata. In sixty-four cases he had seen recurrence sixteen times. In nine of these the patients had been operated on by other surgeons, sometimes several times. In these the operation had been done by suprapubic incision, and multiple papillomata had appeared. It might be assumed that when the operation was done this way the tumor cells were squeezed into the freshly opened lymphatics, and, therefore, recurrence was more likely than when an endovesical operation was done. Accordingly, the latter seemed preferable, and he had performed it in sixty-four cases with good result. Even though recurrences occurred when this method was pursued, they could more easily be dealt with.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

MYCOSIS FUNGOIDES—ACTINOMYCOSIS OF THE LUNG—PRESSURE TREATMENT IN GENITOURINARY AFFECTIONS—OPSONINS.

VIENNA, February 12, 1908.

PROFESSOR EHRMANN presented before the Society of Physicians a patient suffering from erythrodermia. The condition had persisted for about nine months and the patient showed the following state of affairs: There was almost continuous diffuse uniform reddening of the entire surface of the body which was less pronounced on the palms, soles of the feet, and the extremities, while it was entirely absent about the genitals. The color was deep red with a shade of blue about the extremities. On inspection, and still more plainly on palpation, it was evident that the skin was edematous, slightly swollen, and moderately infiltrated. Over the chest and back it was tense, devoid of the normal markings, and somewhat shiny. On the inner surface of the thighs, in the axillary region, and about the elbows, it was thrown up in coarse plump folds and the markings were very pronounced, so that in places areas were seen resembling alligator skin. The same condition existed about the back of the neck. There were palpable glands in the inguinal, axillary, and cubital regions, as well as in the supraclavicular fossa. The hair of the head and of the pubic region had to a large extent fallen out. Physical examination showed no abnormalities, and the Calmette and von Pirquet tuberculin reactions were negative. The blood picture, however, was remarkable. At the end of October, the red cells numbered 3,900,000, the leucocytes, 21,000, the hemoglobin was 85 per cent., and the differential count showed 72 per cent. of polynuclears, 9 per cent. of eosinophiles, 3 per cent. of basophiles, and 16 per cent. of eosinophilic myelocytes. At the end of December, the red cells were 2,800,000, the leucocytes 20,000, the polynuclears 55 per cent., eosinophiles 32 per cent., lymphocytes, 11 per cent., and large mononuclear leucocytes 1.7 per cent. The pathology of the erythrodermias is still far from clear, and depends somewhat on the question of the relationship between true leukemia and the various forms of pseudoleukemia. One group is probably associated with tuberculosis; namely, Hebra's type of pityriasis rubra. A second series is composed of diffuse or circumscribed erythemas and scaliness with infiltration of the skin with leucocytes, combined with the blood picture of true leukemia. Finally, there are varieties which are difficult to classify, and include pseudoleukemia, and forms in which there is a leucocytosis but no leukemia as in the present instance, which, however, differs from most of the cases in the comparatively large number of eosinophiles, and must, therefore, be regarded as a probable example of mycosis fungoides.

Haudek has reported a case of primary actinomycosis of the lung. The patient was a cook, aged thirty-seven years, who had been sent to the hospital with a diagnosis of pulmonary tuberculosis. Both the history and the physical signs were suggestive of this condition, but on the right side of the thorax there was moderate swelling and pronounced dullness. There was also evidence of aortic compression. Roentgen ray examination showed that there was infiltration of the right upper lobe and the adjoining portion of the lower and middle lobes, and enabled the possibility of aneurysm to be excluded. In the profuse bloody sputum neither tubercle bacilli, tumor cells, nor actinomyces granules could be found. While under observation, the patient remained free from fever, a circumstance which, together with the absence of tubercle bacilli, was against the diagnosis of tuberculosis. In the course of six weeks, the swelling on the right side of the chest wall constantly increased and became very hard and tender. Later the flat surface of the swelling became red in the neighborhood of the fifth intercostal space, softened, and a fluctuating abscess the size of a walnut formed. On incision, a small amount of thick bloody pus was obtained, containing actinomyces granules, while the sputum also revealed the characteristic organisms. The patient was transferred to the surgical division for treatment.

Kornfeld has devised a method of applying pressure treatment in urology, and has demonstrated his apparatus for use in cases of prostatic affections and urethral strictures. In treating the prostate, he introduces a heart-shaped or violin-shaped colpeurynter into the rectum in the collapsed condition, and then fills it with air by means of a syringe. In doing this, by suitable manipulation of the piston vibratory or percutory impulses may be transmitted to the prostate. In place of air, water or mercury may be used. The treatment of urethral strictures is as follows: A bougie is, if possible, passed through the stricture and allowed to remain two or three minutes. It is then replaced by a similar instrument, over which a very thin rubber bag has been stretched. After this has been placed in position, the bougie is very carefully removed, so that the bag alone remains in the stricture. The latter is then very slowly filled with water or mercury by means of a syringe under only moderate pressure. The opening of the bag is clamped and it is left in the urethra for ten or twenty minutes. The effect is often evident even on the next day. In six cases of enuresis, Kornfeld applied this method with exceedingly good results.

H. W. Abelman of Chicago, by invitation, presented before the Society of Internal Medicine a discussion of opsonin determinations, in which he spoke highly of the value of this diagnostic aid, and described in detail the technique of its application.

VEGETARIANISM.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—An editorial in the MEDICAL RECORD on vegetarianism some time ago was reproduced in the newspapers and caused discussion. Races and individuals differ in internal construction to an amazing extent. For instance, the small intestine varies in different races and individuals as to its size, structure, strength, and length. One man may require vegetable food with little meat; another may fare best on meat with little vegetable food, still another may live on animal food (milk or eggs) alone, but no race exists on exclusive vegetable diet. Absolute vegetarianism is impossible in man. The necessity for animal food is so great that people under stress of its need eat grubworms. In parts of China a dead cow disappears more completely than from an onslaught of wolves and vultures, for the bones are consumed as a last morsel.

Individuals capable of unusual endurance or extraordinary digestion may be accidental racial variations or "throw backs," reversions in digestion and musculature to subhuman types. Such individuals are not products of any system of dietetics. This may account more or less for the endurance tests on vegetables with little animal food. A pigeon differs in digestive apparatus from a chicken-hawk. A pigeon may live almost entirely on grain, while the hawk eats meat alone. As a rule, carnivorous animals bolt food, while the herbivora masticate thoroughly.

Why is it that some individuals subsist on skim milk, while an Esquimaux eats at one sitting ten pounds of blubber or sea moss? Nature, through instinct, appetite, experience, and the common senses, teaches every living thing what food is best. Else why are smell, sight, and taste set as guards to the portals of digestion. It is too trite to say what is one man's food is another man's poison, and it will be many a year before science finally charts out a safe system of dietetics. Medical observation teaches that the stomach often has more sense and judgment as to selection and ejection that its owner.

NEW YORK. NORBURNE B. JENKINS, M.D.

TOBACCO AMBLYOPIA

To the Editor of the Medical Record:

Sir:—Anent the views expressed by writers in recent issues of the medical and secular press on the effects of tobacco upon the human subject, it may be pertinent to suggest further inquiry on the by no means well-established toxic effects of tobacco. It is hard to say why tobacco has been selected as the general agent for inciting what is called toxic amblyopia. Is it not a fact that various toxic agents are said to be attended by varying degrees of amblyopia, and that some writers, apparently eager to ignore the effects of alcohol, have taken up the consideration of central and peripheral lesions of the optic nerve, clearly due to prolonged local disturbances of the vasomotor system, from various kinds of excesses and mechanical obstruction to nutrition, even including tuberculosis, to set forth an exaggerated view of the by no means well-established toxic effects of tobacco? In Turkey, where tobacco is inordinately used by both sexes and among all classes, the so-called tobacco amblyopia, according to competent observers, is almost unknown, and yet the daily consumption of tobacco by this portion of the Musselman race is enormous. Carefully made assays show that the smoke from Turkish cigarettes (which the Turk draws directly into the lungs) contains about double the percentage of nicotine and carbon dioxide that is found in cigars made from Havana tobacco. Does not the Moslem law religiously interdict, among other things, the use of alcohol in any form, and exact from the faithful strict observance of bodily cleanliness by morning and evening ablutions?

In a series of clinical observations which the writer reported to the Kentucky State Medical Society in June, 1895, there will be found some cases in which it was clearly apparent that the amblyopia was not caused by tobacco, but was due directly to retrobulbar neuritis. Similar cases clearly establish the fact that the symmetrical scotomata are neither diagnostic of tobacco amblyopia nor constantly present in otherwise apparently well-established cases. Is there a physician who at some time in his medical career has not been taught that the "exact symmetry of this affection is one of its marked features"; does one "always find the same amount of defect in each eye," and achromatopsic phenomena fairly attributed to tobacco alone? Are these scotomata for certain colors due to toxic influences or structural changes? It is not unreasonable for one to be more inclined, taking into consideration environments and the "eccentric" character of patients, who are said to suffer especially from this form of amblyopia, to favor some mechanical obstruction to nutrition, inflammation excited by tuberculosis, the reflex phenomena in cases of megrim, to keep well to the front the neurological elements, and not make tobacco alone chargeable for certain undeveloped or over-exaggerated types of amaurosis. A shock to the nervous system from a railroad accident has been said to be followed by the so-called tobacco amblyopic indications.

What physician, no matter how large his experience or favorable his surroundings to the proper study of the aberrations found in eye troubles, can say he is safe in the recognition and differentiation of anesthetic retinitis coincident with locomotor ataxia, the retinitis of anemia, and the multifarious forms of toxemia alone with "tobacco amblyopia"—for is it not a fact that in the majority of instances we are unable to assign a cause?

All the conspicuous symptoms of the so-called tobacco amblyopia are, in a great measure, identical with those visual disturbances which arise from axial neuritis, observed in poisoning by sulphur, bisulphide of carbon, stramonium, cannabis indica, iodoform, quinine, alcohol, and even in starvation. Is it not a fact that similar lesions and visual disturbances exist in varying degrees, more or less prominent, in nearly all organic lesions of the brain and spinal cord, in embolism, loss of blood, dementia paralytica, traumatism, syphilis, tuberculosis, epilepsy, dysmenorrhea; various forms of nephritis, miasmatic fevers, anemia, rheumatism, podagra, and grippe?

Can we so readily differentiate the varying forms of amblyopia and not be startled when we hear it stated or see it set forth in print, describing certain trophic neuroses that are unmistakably distinctive types of disease—as "characteristic effects" of the use of tobacco? Is it fair to assume, therefore, that the so-called tobacco amblyopia has any distinctive characteristics? The habit of smoking is now at its apogee. It may be taken as a rule that almost every man smokes who by idiosyncrasy is not disabled from indulgence. It may be prudential to infer that some, reasoning from their anti-tobacco standpoint, in assuming that the "weed" is responsible for a certain form of amblyopia, and, in their haste to satisfy themselves with a cursory examination, even to the ignoring of the physiological aspect and, to further their reasoning in contradistinction to anatomical facts, are sacrificing themselves on the altar of duty rather than promulgating their belief.

New York. William B. Meany, M.D.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 12, 1908.

Diagnosis and Treatment of Exophthalmic Goiter.—The paper of J. M. Jackson and L. G. Mead is an analysis of 85 cases personally treated. Of this number 80 were women and five men. Nothing unusual is presented under the heading of diagnosis, but the authors claim that many cases are not recognized until they have become advanced. Their favorite remedy has been the more or less continuous use of the neutral hydrobromide of quinine, first proposed by Forchheimer. The acid salt does not act as well. The neutral salt is given in five-grain capsules three times a day and this is as much as can ordinarily be borne, although the authors have found patients who could take four capsules a day for a long time without the unpleasant symptoms of tinnitus. On the other hand they occasionally find a patient who cannot take more than one or two capsules a day. At the beginning of treatment patients are told that no marked effects may be seen short of a month and they must be prepared to continue it for at least two years. Great stress is laid upon this because patients become very easily discouraged if no immediate results are obtained. Usually after a week or two of treatment the pulse rate will be slowed, the thyroid diminished, and the sweating and tremor lessened. It should be continued until all the symptoms have disappeared, which may be in four months or as long as three years. The order of disappearance of the symptoms seems to be, first, the tachycardia subsides, then the sweating, then the thyroid gland diminishes, and finally the exophthalmos and tremor, the last two after only a prolonged course of treatment. In a few instances the goiter and exophthalmos persisted more or less marked after all other signs had disappeared and the patient was practically well and at work. They have never seen any bad permanent effects follow from the administration of the quinine, and the only unpleasant effect is occasional tinnitus, especially if large doses be given. It is advisable to continue the drug in small doses, one capsule three times a week during the second year, and the patients are cautioned to immediately return to former doses at the first indication of any reappearance of their old symptoms.

New York Medical Journal, March 14, 1908.

Indicanuria.—G. M. MacKee presents a general review of this subject under the heading of etiology, diagnosis, pathogeny and treatment, and adds a copious bibliography of literature, ancient and modern. The test preferred by the author is a modification of Obermayer's. The reagent consists of a stock solution of chemically pure ferric chloride in pure hydrochloric acid. Five cubic centimeters of this reagent are added to the same volume of urine in a test tube; 1 c.c. of chloroform is added to this mixture, and the tube inverted several times. If indican is present the chloroform, which rapidly settles to the bottom of the tube, will assume a blue color, the intensity of which depends upon the amount of indican in the urine. Occasionally the splitting of the potassium indoxyl sulphate is delayed, so in all negative cases it is advisable to allow the mixture to stand for several minutes before venturing an opinion. In mild reactions better contrast can be obtained by replacing the urine with water, leaving the chloroform at the bottom of the tube, or the urine may be clarified by filtration after the addition of a few drops of a saturated solution of lead acetate. Occasionally one will obtain a purplish or red, instead of a blue, reaction. This is probably due to the presence of skatoxyl compounds. The significance is the same, providing the patient has not been taking potassium iodide, which will give a red reaction with this reagent. Any doubt can be cleared up by the addition of a few crystals of sodium hypophosphite. Under the head of treatment, the author expresses a favorable opinion as to the value of sour milk, and considers that the commercial buttermilk answers every purpose.

Winter Diarrhea and Infant Feeding.—E. K. Shelmerdine believes that some cases of diarrhea occurring in infants during the winter months are due to changes produced in the milk by freezing which produces small curds floating on the top. Straining removes all this and in one case in the author's experience cured the diarrhea in half a day. The freezing is hard to avoid in winter from the ordinary method of domestic delivery. The author

says that where the milk is frozen the water in it is congealed into ice, the perfect solution of the casein in the water is disturbed, and there results a clumping of the proteid molecules which lose their solubility; on the reduction of the frozen mass to a liquid, the curds, through some chemical change brought about by the freezing, are incapable of acquiring the solubility which they formerly possessed. These minute curds cannot be broken up by pouring the milk from one jar into another, by agitation, or by heating, and are present in the final mixture. The diarrhea caused by frozen milk is not as severe nor as debilitating as that of the summer season; neither are the number of stools as great. Six to twelve stools a day is the average. There is distressing colic. The stools are green, acid, watery, and contain small cheesy masses of undigested casein; the buttocks are generally excoriated from the irritative effects of the acid stools. Treatment consists in taking the child off the milk diet for twenty-four hours, cleaning out the bowels, and giving barley water in the interim. If the condition is recognized early, correction of the underlying cause will produce a prompt subsidence without the necessity of stopping the food.

Acute Double Miliary Tuberculosis of the Conjunctiva.—A case is reported by H. F. Hansell, whose patient was a Lithuanian of 37 years, entering the United States in 1906. He had always been healthy and stated that he had had no trouble until about two months before coming under observation, when he presented to superficial external examination the characteristic appearance of trachoma. The skin of both upper lids was discolored and the lids were swollen and drooping. On the palpebral surface the resemblance was equally marked. Scattered over the conjunctiva of both upper and lower lids were numerous yellow, isolated swellings that might at first glance be mistaken for trachoma follicles. Close inspection showed that the yellow patches were not granulations or enlarged follicles. They were round or oval, the size of a grain of wheat, circumscribed and sharply separated from the adjacent membrane, yellow in color, as though they contained pus or caseous matter, slightly raised above the surface of the membrane and covered by epithelium. They were shallow, not penetrating as far as the tarsus. The pathological laboratory collected some of the material from the surface of the conjunctiva by gently scraping and reported the presence of numerous tubercle bacilli. Examination of the contents of one of the little caseous elevations had been commenced, but not completed. No signs of general tuberculosis could be detected by examination of the lungs, sputum, or urine. The preauricular or cervical glands were not enlarged. The eye grounds were healthy. V = 6/6 with — .75s. The author adds some remarks on conjunctival tuberculosis. He says that Calmette's suggestion of diagnosticating and treating such cases by applying tuberculin directly to the conjunctival sac and then determining by the reaction the presence of tuberculosis is not, in his limited experience, dependable. It was tried in the case cited with negative results; also in fifteen or twenty individuals known to be suffering with general tuberculosis the reaction was present in only one fourth.

Journal of the American Medical Association, March 14, 1908.

The Chemical Control of the Body.—E. H. Starling points out that recent investigations have proved that administration of drugs for the cure of disease is only imitating the methods employed by Nature, and that a large share of the coordination of the activities of different organs of the body is due to the production and circulation of chemical substances, strictly analogous to the drugs employed in the treatment of disease. As an illustration of this fact, he refers to secretin, the chemical substance that excites the pancreatic secretion when the food passes into the duodenum. This body can be regarded as the type of a whole group of chemical messengers, which, formed in one organ, travel in the blood stream to other organs of the body and effect correlation between the activities of the organs of origin and the organs on which they exert their specific effect. To these chemical messengers has been given the name "hormone." The chemical agents acting on the organism have been divided by Ehrlich into two classes, which may be designated briefly as the toxins and the drugs. There is one marked distinction between the two groups: The toxins cause the formation in the organism of antibodies, tending to produce immunity, while in the case of the drugs, though with some, as with morphine, a limited degree of tolerance may be produced, there is no evidence of the production at any time of antitoxic substances. The hormones, acting constantly as chemical messengers from one organ to another by way of the blood, can not produce antibodies that would abolish their function, and must necessarily, therefore, belong to the class of drug substances. Their action must also, in all probability, be ranked with the purely chemical processes. Other functions are correlated by these chemical messengers, such as stimulation of the respiratory center by carbon dioxide in the blood, the action of adrenalin on the blood pressure. Our knowledge of other hormones is as yet incomplete, but facts indicate their existence as shown in the effects of the internal secretions of the pituitary, thyroid, and sexual glands in which the relations existing between the activity of certain organs and the development and functions of others are most clearly manifest, though the chemical nature of the hormone has not yet been revealed.

Endometritis.—B. M. Anspach has critically examamined every case in which a histological examination of the endometrium was made in the gynecological department of the University Hospital from October, 1899, to October, 1907, classing the endometrium as normal only when there was no anatomical alteration recognizable grossly or by the microscope. There were 2,280 gynecological patients during this time, among them 337 cases of diseased mucosa, but only 94 occurred as clinical entities, and 243 were associated with more serious conditions requiring operation. He concludes, therefore, that one should be very guarded in promising a patient that a given uterine disease will be cured by a curettage, and that the non-operative treatment of leucorrhea by the direct application of antiseptic or caustic solutions to the uterine cavity is seldom justifiable. In the case of a uterine discharge for which no pelvic origin is apparent, general tonic and hygienic treatment should be given a fair trial before resorting to curettage or to any intrauterine manipulations.

Delirium in Tetanus.—C. W. Burr remarks on the rarity of mental symptoms in tetanus; the toxin does not usually appear to disturb the intellectual functions and the emotional control, considering that the patient's usual knowledge of the seriousness of the disorder, is commonly better than might be expected. When mental symptoms do occur, therefore, the question arises whether they are accidental complications occurring simultaneously with the tetanus and in no way caused by it; or due to the medicines, or to the direct result of the exhaustion produced by the disease or of a secondary infection set up by the primary action of the tetanus toxin. In a large experience with tetanus, he has himself seen delirium in only three cases which he reports. In one of these, Burr can find no cause save exhaustion and the influence of fever in a susceptible person. In some persons, slight fever is a distinct cerebral stimulant and a high temperature may cause wild delirium. In another of the three cases, he thinks that the delirium was entirely due to intoxication by the heroic doses of bromides and chloral employed and the third was in a person naturally unstable mentally, emotionally weak, lacking in self-control and a victim of alcohol. Any other severe and sudden stress would probably have been equally likely to disturb the mental equilibrium.

A Typhoid Epidemic from Milk.—C. N. Haskell gives an account of an epidemic of typhoid fever, occurring in Bridgeport, Conn., in August and September, 1907. In fifteen cases, thirteen positive and two doubtful, milk was consumed which was sold by one dairyman, who obtained his supply from nine different sources. Each case was carefully investigated as to history of illness, methods, samples of blood and well water, etc., but with negative result except in one case. On one farm supplying milk to this dealer there evidently had been at least one case of typhoid, and without much doubt several others unrecognized, as five persons who were or had been members of the family during the season gave a positive Widal reaction, and three of these had handled the milk. Still closer investigation traced the infection, in all probability, to a boy boarding at the farm during July and August who had probably had a mild attack of typhoid, mistaken for malaria, a year or two before. The epidemic ceased after the stoppage of milk from this source.

Operation on the Brain Without Anesthesia.—H. M. Thomas and Harvey Cushing give an account of a case of subcortical brain cyst, under the postcentral ascending convolution near its top, which was removed after a series of operations necessitated by the patient's condition, his intolerance of anesthetics and the difficulties of operation due to the high location of the lesion. The case is of interest surgically on several accounts; the situation of the lesion and consequent difficulties of operation; the occurrence of a post-operative extradural clot; the absence of cortical adhesions on the second opening of the dura; the occurrence of Jacksonian epilepsy with a subcortical tumor;; the possible origin of the cyst from a degenerated glioma, but the most important and suggestive fact is that the last operation in which the dura and postcentral convolution were incised, the cyst discovered and shelled out, was performed without anesthesia, the patient being per-

fectly conscious, but feeling no sensation whatever from the cutting and manipulation even when the dura was being incised. An experimental tension on the dura caused slight momentary discomfort, but this and the putting in the scalp sutures at the end of the operation, with the possible exception of the chance sponging of the edges of the incision, was the only part of the operation that caused any sensation whatever. The entire procedure lasted about three hours, the patient being interested, asking frequent questions and being engaged in conversation most of the time. Cushing has since had another similar experience of a second-stage extirpation operation without anesthesia in a young child. He says that, while further investigations in this direction are needed, this experience suggests that we may have to modify, in some respects, our notions as to the cause of intracranial pain, just as we have had to change our ideas of what causes visceral pain in the abdominal cavity. The dura, like the peritoneum may be sensitive only to tension or pressure and not to surgical incision. The article is illustrated.

Anthracite Coal Ash as a Surgical Dressing.—W. Irving Clark, Jr., recommends the use of anthracite coal ash as a surgical dressing in cases in which frequent changes of dressings are necessary, and in which the question of expense is of importance. It is readily obtainable, is neutral in reaction, and on careful analysis is found to contain no irritating substances. When freshly taken from the furnace it is aseptic, though not antiseptic. The only preparation required is sifting through a flour sieve; it can then be put on a piece of well-washed cloth, which is folded over it, making a poultice, which can be rapidly prepared and will be found soft, compact, and absorbent. It is readily molded to any part, and, while not so quickly absorbent as gauze, it draws the pus better up into the pad instead of spreading it over the skin as gauze frequently does. His conclusions are given as follows: 1. In cases in which gauze can not be obtained or the expense is too great, ash pads form a good substitute. 2. In freely discharging sinuses and suppurating wounds the discharge will be well taken care of. 3. When the discharge is thick and gummy, or when weight and bulk of dressing is contraindicated, they should not be used. 4. They are particularly applicable to discharging wounds of the axilla, popliteal space and palm of the hand, because they fit snugly and tend to splint the part. They are also well suited to varicose ulcers and discharging sinuses of the abdomen.

Non-fatal Serum Reaction.—A. P. Ohlmacher reports two cases of severe reaction to therapeutic serum injections. In both cases the contingency of hypersusceptibility had been considered and attempted to be met by administering several "immunizing" injections during the first eight or ten days of what is shown by animal experimentation to be the sensitizing interval. In both cases, the more common "accelerated reaction" of the serum disease, as defined by von Pirquet and Schick, *i. e.* urticaria, joint pains, and fever, failed to appear. It seemed as if these more usual manifestations accumulated and took the form of one grand explosion. The first case was that of a woman, expecting confinement in a short time, who was suffering from a chronic polyarticular rheumatism. For this she was given injections of antistreptococcic serum, 10 c.c. daily, for three days, and then at longer intervals. There were no evidences of serum reaction until the seventh injection on the fifteenth day of the treatment, when there was a sudden attack of very pronounced edema, cyanosis, feeble rapid pulse, severe apnea, and unconsciousness. After what seemed several minutes, but, of course was less, gasping inspiration occurred, followed by a rapid recession of the edema and cyanosis, with spasmodic breathing, moaning, and gradual return of consciousness. As soon as the patient was able to talk she complained of chilliness, and severe rigors occurred, with vomiting, which together lasted about fifteen minutes. Following the chills the cutaneous surface took on a bright red hue and fever gradually developed, reaching a maximum of 103° F. in about three hours. All had subsided by the next morning; the woman expressed herself as feeling perfectly well, and for a week or two the rheumatic joints were much more comfortable. Ohlmacher says the good results following the injection of horse serum in chronic rheumatism are due to the periodic hyperemia in the affected joints by the "accelerated serum reaction." Some fears were felt for the child *in utero*, but all went well. In the second case, that of an adult man, the cumulative reaction was not so severe, principally differing in that the apnea was less prolonged and consciousness not entirely lost. There was also a longer interval (three minutes between the injection and the appearance of the symptoms, but in other respects the cases were similar, even to the relief of the rheumatic symptoms.

The Lancet, March 7, 1908.

Warning Against the Indiscriminate Use of the Ophthalmo (Calmette) Reaction in the Diagnosis of Tubercle.—A. M. Ramsay refers to the case of a girl of 12 years admitted to the Glasgow Royal Infirmary suffering from superficial vascular ulceration of the right cornea. There was a history of a similar attack in the left eye two years before, and though careful examination revealed no sign of tubercle in the lungs or the abdomen both cervical and submaxillary glands were much enlarged. On the 10th one drop of a 1 per cent. solution of tuberculin was instilled into the left eye which was at that time perfectly free from inflammation, although there was a faint nebula on the cornea, the result of the previous attack of ulceration. Within 24 hours there was violent mucopurulent reaction, the discharge being very abundant and accompanied by marked swelling of the lids and thickening of the palpebral conjunctiva. The inflammation could not be influenced by treatment, and progressed till the cornea quickly became vascular and abraded over the central area. On the 20th 0.25 cubic centimeter of a 1 in 1000 solution of Koch's old tuberculin was injected subcutaneously. This was followed by a rise in temperature and resulted in great improvement in the condition of the right eye though the left remained unchanged. Subsequently the old tuberculin was again injected twice, the first time to the amount of 0.25 cubic centimeter and the second time to the amount of 0.5 cubic centimeter, and by the end of November the right eye was almost quite recovered, while in the left the discharge had begun to lessen. After that date the improvement in the latter was steady but there remains as a result of the Calmette instillation a considerable opacity of the center of the cornea, and in consequence the vision is seriously impaired.

Egg Poisoning.—A. T. Schofield states that while egg poisoning is not rare he has been unable to find any record of cure. He reports the case of a boy of 13 years whose parents stated that he could not eat eggs in any form without poisonous symptoms. In the attacks there was first of all free secretion of saliva, the lips burned, the boy felt sick, itched, and was soon covered with an urticarial rash. He swelled all over, with puffy eyelids and lips, tight red swollen skin, and could hardly breathe from a sort of asthmatic condition. Raw egg would blister his skin. The author endeavored to remove this susceptibility and commenced his treatment by the constant administration of egg with a little calcium lactate added to stop the transudation. Pills were made containing two grains of the calcium salt and one ten-thousandth part of a raw egg. No eggs were permitted in his food and he was not allowed to know there was any egg in the pills. The egg proportion was gradually increased until in the course of six months he was able to consume an egg daily in his food, the pills being discontinued. The author says that some may think a great deal of trouble was taken to cure this idiosyncrasy, but when we remember that it was not connected with some rare food such as pineapple, which could easily be avoided, but with an article that enters into nearly all a schoolboy eats, and that his life had been more than once in danger from such food, it will be seen that the trouble taken was amply justified.

Seven Years' Experience of Finsen Treatment.—J. H. Sequeira gives a statistical report of his experience with this agent in 599 cases of various maladies. Of this number 429 were cured, 107 improved, 23 failed, 25 preferred other treatment, while 15 died. The list of cases includes 68 of lupus erythematosus, 14 of rodent ulcer, 5 of cutaneous nævi (all improved), a few of pigmented mole (all failures), one of leucodermia (failure), a few of keloid (all benefited), and some of telangiectasis in *x*-ray scars (all benefited). The author goes quite extensively into the physics and apparatus of the agent employed. In 23 cases the treatment had to be abandoned on account of the great extent of the disease, the rapid spread of the malady in spite of all efforts and extensive involvement of mucous membranes. At times it was found that every application of the light would lead to the formation of an ulcer. The author believes that such cases always present mixed coccal and tuberculous infection. As a rule such cases respond well to the simple *x-ray*. In certain extensive cases the Finsen treatment was discontinued in favor of the *x*-rays as it was found that the former was unable to keep pace with the rapidly extending surface. Again, some limited cases of lupus of the extremities and trunk, where the character of the scar was immaterial, were treated by excision after the light treatment had been started.

British Medical Journal, March 7, 1908.

The Reduction of Displaced Internal Semilunar Cartilage.—H. W. Jacob says that the following method

is simple, absolutely painless, and if the patient has not himself already manipulated the joint or endeavored to walk is practically unattended with synovitis. The patient lies on a bed or couch, the surgeon standing on the outer side of the limb affected, with his face towards the patient's foot; the patient then raises his leg off the couch in the semiflexed condition, the surgeon grasps the patient's leg in both hands, and using his own thigh as a fulcrum, by means of a steady pulling movement draws the patient's leg outwards while the surgeon's thigh keeps the patient's femur in a fixed position; directly this movement is effected the patient must steadily extend the limb, and the displaced cartilage will probably go back with a slight click; if the first movement of extension is not successful the maneuver must be repeated without any hurry or unnecessary force, and after a few attempts the cartilage can usually be felt to slip in without pain or inconvenience. The author believes that the levering outwards of the patient's leg reduces the resistance to the backward passage of the semilunar cartilage, which then slips back into place with the aid of gravity.

Sugar Headaches.—T. M. Allison believes that many of the so-called "bilious" attacks are due to an excessive intake of sugar. The sugar standard of nature is the quantity found in milk. The excess taken in food (not alone as sugar, but also as starch, which in body metabolism becomes sugar) is converted into lactic acid, which irritates the terminations of the gastric vagus and sets up the well-known but badly-named "bilious attack," with its distressing symptoms of "megrim," of which the commonest is hemi-headache, generally referred to the left eyeball and relieved by pressure, together with vomiting, giddiness, and depression. The author says that if sugar were expensive instead of being cheap, there would be many less puzzling cases of headache for which eyestrain, hereditary, and various other factors are assigned.

A Typhoid Carrier of Twenty-nine Years' Standing.—The patient of G. Dean was a physician who had had, twenty-nine years ago, an attack of typhoid fever. Since that time he has had many attacks of what he regarded as biliary colic. They were generally associated with over-exertion, long bicycle rides and irregular meals. Jaundice occurred in some of them. Between attacks his general health was good and he was able to carry on his professional duties. It was suggested to him that he might be a typhoid carrier and the proof of this assumption was demonstrated by the customary bacteriological tests. So far as was known he had never infected anyone, and this fact points, says Dean, to the conclusion that with educated people in fairly hygienic surroundings, and where personal hygiene is carefully attended to, the risk of infecting others is not so great as might be imagined. The very definite history of the first attack of biliary colic in a young man occurring three months after typhoid fever, strongly suggests that the calculi were the result of the infective processes. Agglutination tests with the patient's own serum were made, and it was found that with the bacillus ordinarily used in the author's laboratory for the Widal test the patient's serum gave an agglutination in a concentration of 1 in 25, but failed to do so in 1 in 50, and 1 in 100. With the patient's own bacillus the serum failed to produce agglutination even in 1 in 25. That the absence of this reaction with the patient's own serum is not due to the lack of suitable receptors in the bacillus is proved by the fact that it was capable of being agglutinated by immune horse serum.

A Case of Actinomycosis (Streptothrichosis) of the Lung and Liver Successfully Treated with a Vaccine.—The case of W. H. Wynn is of importance because it adds one more to the number of infections which have been successfully treated with a specific vaccine prepared from the infecting organism. The patient was a schoolboy of fourteen years, who developed a fluctuating swelling below and to the left of the nipple in the sixth intercostal space. About eight ounces of offensive pus were evacuated and a ragged cavity could be felt with the finger running up toward the axilla and apparently in the lung itself. The main portion of the paper following the history of the case refers to the bacteriological and culture tests and the manufacture and use of the "actinomycotin" serum. There was not much difficulty in preparing the serum, as the organism was isolated and grown in pure culture. The boy had suffered all his life from bronchitis. The case emphasizes the importance of the systematic importance of the sputum, especially in cases resembling tuberculosis in which no tubercle bacilli can be found, and of the pus in all cases of empyema, especially those which show a perforative tendency.

The Diathesis; the Personal Factor in Disease.—Dyce Duckworth notes that one result of modern study is to lead us to regard men as living units with an exact bodily conformation, a uniform trophic system, and tissue metabolism, and to disregard textual peculiarities, definite proclivities, and variants of intimate metabolism. Such a view is evolved in the laboratory, but is contradicted at the bedside, for the clinician is always faced with the personal factor in each patient. We may recognize from special types of body, arthritic, scrofulous, or lymphatic, nervous, and bilious. Those who are subjects of the arthritic type plainly show their liability to rheumatic infection, which the author terms *exogenous*, and no less to the onset of gout, a malady which he regards, in the absence of exact proof to the contrary, as due to endogenous toxins, derived from perverted metabolism in the individual. He notes that some English authorities are disposed to regard the toxic element of gout as generated from intestinal microbes, but as there are people who under provoking conditions do not become rheumatic, so with reference also to gout. Many of the arthritic diatheses are resistant to tubercle. Duckworth declares his belief in the existence of a distinct scrofulous type. Scrofula for him is not tubercle. The nervous type is shown by those of an over-sensitive and delicate nervous system, with a tendency to instability, to the several neuroses, and to mental aberration. The term "bilious" is suggestive of hepatic overactivity, but the main incapacity of such subjects lies in the digestive system and in many instances is due rather to hepatic inadequacy. We often meet, as may be expected, with blends of this constitution with others, as in the case of neurobilious or bilious arthritic subjects. One striking peculiarity of this tendency is the toleration for, and beneficial influence of, mercury in many of the ailments suffered by persons of bilious habit. No other drug can replace mercury in such cases. This is in marked contrast to its effects on persons of the scrofulous constitution who bear it badly.

Berliner klinische Wochenschrift, March 2, 1908.

Myelogenous Leukemia.—Lehndorff and Zak discuss the nature and pathogenesis of leukemia in the light of a case observed by them in which a clinically and hematologically well marked myelogenous leukemia occurred in a person of advanced age, the marrow of whose long bones had been converted into a fibrous tissue having practically no specific marrow cells, whereas the spleen showed a high grade of myelogenous change. This state of affairs is difficult to explain on the basis of the ordinarily accepted theory of disease, which is usually accepted as a primary overgrowth of the bone marrow. The authors point out, however, that it has now been definitely shown that under pathological conditions of the most varied nature, and also in leukemia, myelogenous tissue appears in numerous organs such as the spleen, liver, lymph glands, etc., either through hyperplasia of preexisting areas or as the result of metaplasia of the lymphoid cells. It is, therefore, not necessary to assume that in myelogenous leukemia there is a primary disease of the bone narrow, but the affection may be regarded as a disease of the entire hemopoietic lymphatic system. Ordinarily the bone marrow responds most actively to the stimuli of the morbid process, but the changes in this tissue are not themselves essential to the picture, and such instances as that under consideration are simply examples in which the bone marrow has been less extensively involved, without, however, altering the true character of the disease.

Münchener medizinische Wochenschrift, March 3, 1908.

The Hemolytic Action of Ankylostoma Duodenale.—Preti tested the hemolytic properties of this parasite and obtained results somewhat similar to those reported by Talqvist in regard to the *Bothriocephalus latus*. The worms were washed out of the feces and then triturated in salt solution, the resulting cloudy fluid being used for the experiments. It was found that the worms contained a substance which was hemolytic for the corpuscles of many animals, such as man, the dog, rabbit, ox, and guinea pig, but that this was insoluble in salt solution and was retained by the filter on filtering the suspension. It was, however, soluble in alcohol and in ether. The substance is thermostable and its activity is not impaired by three hours of heating in a boiling water bath. At a temperature of 0° it is still active though but slowly. The addition of lecithin increases the potency of the hemolysin, but without the formation of a true lecithid, and cholesterin does not neutralize this. Trypsin digestion liberates the hemolysin and renders it water soluble. The alcoholic ex-

tract of the worms possesses neither tryptic nor antitryptic properties. In order to hemolyze one c.c. of 5 per cent. corpuscle suspension 2.5 mg. of moist worm body are required.

Saponin Inhalations in Diseases of the Upper Air Passages.—Zickgraf says that W. Freudenthal was the first to point out the significance and frequency of simple dry catarrhal conditions of the upper air passages. While it has been well known that the last stages of such conditions, the true ozena, predispose to pulmonary tuberculosis, it is also true that from the first the forerunners of these trophic changes are of importance from this standpoint. For the treatment of such atrophic mucous membranes he recommends quillaja or soap bark. At first he employed this in the form of irrigations, and later of inhalations of a one per cent. decoction, but he now finds that the most satisfactory method of application is by inhalation of saponin solution. In milder cases a one per cent. solution is used and in severer ones a two per cent. solution. The inhalation is effected by means of a suitable nebulizing apparatus and is kept up for three to five minutes. The effect of the vapor is to cause a very active secretion of mucus and a thorough cleansing of the nasal passages, the patients frequently expelling crusts that are casts of almost the entire cavity. The atrophic mucous membrane becomes filled with blood and grows moist, while the fetor is promptly relieved so that the patient is no longer an objectionable member of society. Mild cases can be cured in this way, and the severe ones greatly relieved. In some instances it appears as if under the treatment there is a slight return of the long-lost sense of smell.

French and Italian Journals.

Thermal Medication in Gynecology, Obstetrics, and Urology by the Bock-Samovar and Its Accessories.—Nicholas de Plantier describes the construction and use of the Bock-Samovar, an arrangement by which the hot water for a vaginal douche can be kept hot for an hour or more while it is slowly allowed to flow out. The heating is maintained by means of a charcoal block placed in a slide at the bottom of the douche pan. This is lighted after the hot water has been introduced into the can and is kept alight during the douche. The patient is able to lie at ease and is not obliged to rise to refill the bag with hot water. The value of hot water applications is due to the keeping of the water at a uniform temperature of about 45° to 50° for a considerable length of time. These requirements are fulfilled by the Bock-Samovar. The instrument is furnished with cannula for the vagina, rectum, and uterus. The vaginal cannula has a double current, and is of porcelain, which is easily sterilized and is a bad conductor of heat. A thermometer serves to regulate the temperature of the water. The author has synthetized the salts of various springs so that they can be used with this apparatus. It is recommended for treatment of puerperal infection and metrorrhagia postpartum, the cannula being arranged in such a way that it is impossible for any fluid to remain in the uterus. It is made of different sizes, smaller for abortions under six months, and larger for labor at term.—*Annales des Maladies des Organes Genito-Urinaires*, November 1, 1907.

The Reaction of Bordet and Gengou in Its Relation to the Streptococcus in Scarlatina.— C. Foix and E. Mallein have applied the reaction of Bordet and Gengou to scarlatina. It has been shown that it is possible to prevent the hemolysis of a mixture of complement, sensibilizer, and red blood corpuscles by fixation of the complement. This fixation is obtained by the use of a counter mixture obtained from bacteria and antibodies. The authors made a mixture of sensibilizer from the serum of the rabbit injected with human blood. The complement was furnished by serum of a guinea-pig. The streptococcus was furnished by successive bouillon cultures of scarlatinous exudation of the throat. They examined twelve cases of scarlatina, from the fourth to the thirty-eighth day of the disease. The reaction became more delicate as the age of the disease increased. Ten of the twelve patients gave positive results, the hemolysis being markedly delayed. The conclusions given are these: the serum of scarlatina contains antibodies directed against the streptococcus. This occurs as early as the fourth day and as late as the thirty-eighth day. It remains to prove whether this reaction occurs with all sorts of streptococci or only with scarlatinous streptococci. This reaction may be made use of in serodiagonsis.—*La Presse Medicale*, November 30, 1907.

Pathogenesis of Acute Laryngostenosis in Measles.—Alfredo Villa describes an epidemic of measles occurring in Genoa in 1905 in which there were many cases of acute laryngeal stenosis, with several deaths. The epidemic increased for some six months. A relatively frequent complication was laryngeal stenosis and there was a resulting high mortality. There were three different periods of the disease in which the stenosis was observed; at the beginning, at the time of the eruption, and at the time of convalescence. The author believes that the stenosis was connected with an exanthema of the glottis, the eruption affecting the mucosa. This was a pure complication of the disease and not a mixed infection. When it occurred late in the case it was the result of a return of the measles eruption, if not of a renewed infection. The total number of cases observed in this epidemic was 269, in 45 of which the laryngeal complication was observed. Of these 32 occurred before or during the external eruption and 13 after it had passed away. The author describes two cases of great severity in one of which death occurred and an autopsy showed membrane in the larynx. This was examined and found to contain no Klebs-Loeffler bacilli, but only *Staphylococcus albus*. This appears to be an observation of importance, since if there is no true diphtheria present in such cases the little patients should not be exposed to diphtheria in a ward for the treatment of that disease.—*La Pediatria*, December, 1907.

Dystocia Due to Placenta Previa Aside from Hemorrhage.—Vincenzo Caliri says that there are many other causes of dystocia besides hemorrhage involved in the occurrence of placenta previa. The prognosis for the mother is rendered bad by many factors. The presentation of the fetus may be anomalous. The principal complications in this direction are breech and shoulder presentations. Earlier than this the malinsertion of the placenta, combined with the muscular contractions of the uterus, predisposes to abortion or premature labor. In most cases of placenta previa some sort of operative interference is required to effect delivery before the patient is exsanguinated by hemorrhage. All these procedures endanger the life of the mother, and render her liable to contract sepsis. Another cause of sepsis is incomplete contraction of the uterus due to inertia, and the formation of clots and thrombi in the uterine sinuses. Manual extraction of the placenta and membranes is another source of danger. Anemia is a source of mortality. Add to this the prematurity of the fetus, and we see that we have a formidable array of dystociæ aside from hemorrhage.—*Annali di Ostetricia e Ginecologia*, January, 1908.

Congenital Syphilis.—L. Tissier and Girauld have examined the forty suspected cases of syphilis confined during three months at the St. Louis Maternity. Of these there were nine abortions, twenty labors resulting in the delivery of fetuses dead and macerated, seven in which the infant was born alive in undoubted syphilitics, and three with living children in doubtful cases. These cases with examinations of the liver in dead children and the placenta in living children are tabulated by the authors. In none of the cases of abortion were the spirochetes found in the liver, although in cases of seven and eight months' gestation they are easily found. In macerated fetuses the spirochetes may disappear by autodigestion. Still eight times out of twenty-one macerated infants the organisms were found in the liver. They were never found in fetal or maternal placenta.—*Bulletin de la Société d'Obstetrique de Paris*, February 15, 1908.

Acute and Chronic Mastoiditis.—M. A. Broca says that otitis media is frequent with scarlatina, measles, and grippe. The ears of all children affected with these diseases should be carefully examined whenever there is a rise of temperature unconnected with the initial rash, or evidences of pain in the head. To prevent these complications the throat and nasal fossæ should be kept as nearly as possible in an aseptic condition by irrigations. When these cavities are affected the inflammation gains admission to the ear by the Eustachian tube and thus to the mastoid process. In the upper portion of the tympanic cavity which contains the long apophyses of the bones is found the aperture of the mastoid cells. This portion of the cavity is called the attic. Whenever you have cleansed the middle-ear and still see pus welling out from the attic you may be sure that it comes from the mastoid cells. In a subject with ottorrhea even slight tenderness on pressure over the mastoid process is an indication for operation, although there may be no swelling or redness of the postauricular region. The severity of the symptoms is not an index of the gravity of the bone caries. Neglect of slight mastoid symptoms exposes the patient to septic accidents and fatal intracranial lesions. In some cases formation of new bone occurs and the tympanic cavity is lessened in size by a protective process designed to obliterate the cavities of the apophysis. In every case of chronic otitis with mastoid symptoms the opening freely of all the cavities of the ear is demanded.—*Le Bulletin Medical*, January, 1908.

Book Reviews.

A Text-Book of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1907.

This work is intended as a bridge between the anatomy usually taught in the first and second years, and the clinical work of the last two years of the medical course. As such it will be of service to the busy practitioner, who will be glad to have the surface anatomy and surgical and topographical anatomy brought clearly before him. This branch of the subject is as interesting as the ordinary first year anatomy with its interminable memorizing is dry and unattractive. The illustrations are an important feature of the work, and they are mostly original and are uncommonly well done. Further, the descriptive text, while adequate, does not overpower the illustrations. The book is one of the most serviceable of those dealing with this subject. It appeals to all—students and practitioners; physicians, surgeons, and specialists.

Technique Oto-Rhino-Laryngologique, sémiotique et thérapeutique a l'usage de l'Étudiant et du Médecin praticien. Par E. Escat. 322 Figures dans le Texte. Paris: A. Maloine, 1908.

This elaborate treatise is the result of thirteen years' experience of the author as a teacher of the practical side of ear, nose, and throat diseases. His object has been first to initiate the student into the special methods of investigation utilized in the diagnosis of ear, nose, and throat diseases, so that he may intelligently take up the clinical management of patients in this special field, and, second, to unfold to him the special therapeutic principles involved and acquaint him with the special surgical procedures. The ground covered is naturally familiar, but it may be said that the volume represents the very latest advances in this field. Escat has always had the reputation of being a clinician fertile in resources and very few will read his work without getting valuable diagnostic and therapeutic suggestions. The Table of Contents is very complete and any special topic can be easily referred to, but the addition of a good index would add greatly to the utility of the book.

On the Mechanism of the Physiological Action of the Cathartics. By J. B. MacCallum, M.D. Berkeley: The University Press, 1906.

This monograph of the recently deceased author contains an account of a long series of experiments made to determine the action of saline purgatives. The question concerning the exact seat of action of the purgative salts remains still unanswered. Whether, upon being absorbed into the blood, they act on the central nervous system is not known. There is no evidence to show that this is the case. It seems, on the other hand, from the experiments described, that they undoubtedly have an action on either the peripheral nervous mechanism or on the muscle cells themselves. It is impossible to prove that there is no action on the central nervous system, and at present it seems impossible also to prove whether the peripheral action is directly on the nerves or on the muscles.

The Operating Room and the Patient. By Russel S. Fowler, M.D., Professor of Surgery, Brooklyn Postgraduate Medical School; Chief Surgeon, First Division German Hospital, etc. Second edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company, 1907.

The second edition of this book has been enlarged by the addition of several chapters on the after-treatment of surgical patients. The course of aseptic wounds, of infected wounds, and of wounds of special tissues is briefly followed, and appropriate treatment is suggested for the complications that may arise in each case. It is to be regretted that advantage had not been taken of the reissue of the book to correct some faults in its older portion. For instance, boiling is still the only method mentioned for the sterilization of instruments and gloves, rectal anesthesia, so useful in many operations on the head and neck, is not described, and pure ethyl chloride is not mentioned among the anesthetics. Barring these minor faults, however, the book deserves favorable notice, as a useful guide to the operating room nurses, to the internes, and to the general practitioner, who may be called upon to carry out the after-treatment of surgical cases.

Diseases of the Nose. By Ernest B. Waggett, M.A., B.C. (Cantab.). Surgeon to the Throat and Ear Department of the Charing Cross Hospital, etc. London: Henry Frowde, Oxford University Press, 1907.

Diseases of the Larynx. By Harold Barwell, F.R.C.S. Surgeon for Diseases of the Throat, St. George's Hospital. London: Henry Frowde, Oxford University Press, 1907.

Both these works are issued in the list of "Oxford Medical Publications." They are printed on good paper, the illustrations are clear and they treat of their respective fields in a strictly up-to-date manner. They are among the best manuals for students beginning rhinology and laryngology it has ever been our pleasure to look over. The student will certainly get the impression that he is seated before his patient and that at his elbow is a friend who is telling him what to look for and how to use his special instruments to the best advantage, and, above all, how correctly to interpret what he sees. Both the writers are among the active teaching clinicians of London and their pages show that they have sought to emphasize the points which their experience as teachers has impressed on their own minds. We unhesitatingly commend these manuals to those who are taking up this special branch of clinical work.

Die Salzäuretherapie. Von Prof. Dr. Hans Leo. Berlin: Verlag von August Hirschwald, 1908.

In the present work Professor Leo gives his extensive experience with regard to the therapeutic efficacy of hydrochloric acid. He is a warm advocate of this medicament and considers it essential in conditions of subacidity of the stomach and principally in achylia gastrica. He always administers the hydrochloric acid in combination with pepsin, which he gives in large quantities. According to his experience patients with achylia gastrica do much better with the hydrochloric acid pepsin medication than without it. The book is very well written and can be warmly recommended.

Labyrintheiterung und Gehör. Von Dr. Heinrich Herzog. Mit 8 Tafeln und 28 Abbildungen im Text. München: J. F. Lehmanns Verlag, 1907.

In the space at our disposal it is difficult to review thoroughly this scholarly monograph on a topic in otology which is receiving much attention. The work opens with a general consideration of labyrinthine troubles, noting the difficulties in collecting facts regarding the early stages of suppurative disease, as cases are not then fatal and stating that reliance has had to be placed on cases fatal in the late stages because of some intercurrent malady which has generally been tuberculosis. Then follow chapters on the detection of unilateral deafness, etiology, pathological anatomy, clinical conditions found, and finally a summary of general conclusions. Some of these are herewith given, but the entire book is well worth the reading.

The destruction of audition by inflammation of the labyrinth results in a progressive narrowing of the tone-perception from the lower to the higher limits. Hence, in the diagnosis of a threatened labyrinthitis the determination of the lower tone-limit is most significant. Labyrinthine suppuration always causes complete deafness. An infection here begins as a diffuse serous or sero-fibrinous lesion. Retention of hearing always excludes a labyrinthitis. Circumscribed labyrinthine suppuration with retained hearing does not exist.

A Study of the Brains of Six Eminent Scientists and Scholars, belonging to the American Anthropometric Society, together with a description of the skull of Professor E. D. Cope. By Edw. Anthony Spitzka, M.D., Professor of General Anatomy, Jefferson Medical College, Philadelphia. Philadelphia: The American Philosophical Society, 1907.

The brains selected for special study were those of five eminent physicans and a naturalist of note. Microscopic appearances are considered. The general and special architecture of these brains is carefully studied and profusely illustrated by means of drawings and photographs. The weights of 137 brains of notable men and women are collected from records. A chapter is devoted to an exposition of the interrelation of brain and mind and the stages of its evolution. Some of the essayist's conclusions respecting *élite* brains are, in general, that the cerebral surface of such brains shows more numerous and prominent gyres; that the parieto-occipito-temporal area is, as a rule, most redundant; that the cerebrum is relatively more massive, the cerebellum relatively reduced, and that the callosa are larger than in ordinary brains. Marked individual differences between the six brains the essayist attempts to reconcile to prominent individual traits exhibited during life.

Society Reports.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, February 4, 1908.

Dr. Charles L. Dana, the retiring President, in resigning the chair to Dr. B. Sachs, the President-elect, expressed his pleasure at the successful work of the Society during the past year and his gratification at the support which had been given him in his efforts to make the Society a working organization.

President's Address.—Dr. B. Sachs, the President-elect, expressed his deep appreciation of the confidence his fellow members had reposed in him by electing him a second time to the presidency of this Society. After referring to the good work done by the Society in the past, and urging the members to continue to give their best efforts in the future, the speaker said that if he read the signs of the times correctly, we were passing in neurology and psychiatry from a period in which we were swayed by purely anatomical and physiological considerations, from an era in which localization and the clinical definition of disease played a most important rôle, to an era in which the etiology of disease and of disease-processes would claim our chief attention. We would be more interested in the questions of the bearing of heredity upon the development of disease: in the question of degenerative disorders, of bacterial infections, and in the aids given to diagnosis and treatment by a study of the blood, of the cerebrospinal fluid, of the efficacy of organic extracts, etc. Changes in the ductless glands and their relations to various conditions in which neurologists were interested would also come up for special consideration, and there was much yet to be done in connection with the proper recognition and treatment of brain abscess, tumors at the base of the skull, and even in the matter of spinal surgery. He hoped that the members would see fit to take some definite action, either independently or in conjunction, if necessary, with the Academy of Medicine, in order to remedy the evils of medical expert testimony. As a body we should make a desperate effort to wipe out the stigma resting upon all of us because of the abuses which had grown up in our medicolegal procedure. It was a fact which no one of us would deny that the medical expert at the present time was mentioned with a sneer, and the slur fell heaviest upon us, because in the majority of instances the neurologist and alienist was the medical expert at whom these shafts of public criticism were directed. It would be a great tribute to the standing of this Society if its deliberations would lead to the creation of an impartial medical commission to whom the court would submit the question of sanity or insanity in any given case.

A Case of Suspected Huntingdon's Chorea.—Dr. Allen Starr presented this case. The patient was a negro, 26 years old, who had apparently enjoyed perfect health until his seventeenth year. His family history was unimportant and contained no facts bearing on the present case. The patient was born in Eastern Maryland, and a fairly good knowledge of his ancestors was obtainable. About nine years ago his mother noticed that he was awkward in his movements. This was first noticed in the hands, and gradually extended to the arms, legs and body, and finally affected the muscles of the jaw and mouth. In connection with this loss of control, there were peculiar arythmical movements of the muscles. There was a dropping of the hands, with a certain amount of contraction of the wrist, together with a shuffling, peculiar gait with high, irregular steps. On account of the involvement of the muscles of the mouth and jaws he was unable to make himself understood, although his mother stated that she still could understand him at times. On attempting to speak he made extraordinary grimaces. He apparently understood what was said to him. Accompanying the physical symptoms, there had been a gradual mental impairment. When he was sixteen years old, according to his mother, he could read and write and was fairly bright at school; now he was stupid and took little interest in what was going on around him. There was no nystagmus: no ankle clonus; no Babinski; no sensory symptoms. The knee jerks were slightly exaggerated. Dr. Starr said that on account of the intentional tremor he was first inclined to regard the case as one of progressive multiple sclerosis, but Dr. Richard H. Cunningham, who saw the patient at the Vanderbilt Clinic, identified it as one of Huntingdon's chorea. Personally, Dr. Starr said, he had never seen an example of that affection, and he could find no record that it had ever been observed in a negro, nor was there a family record of the disease in this instance.

Dr. Richard H. Cunningham said that in 1893, while practising in the South, he had under his care a family affected with this trouble. They were not negroes, however. The history obtained was that the paternal grandfather died of apoplexy. The father developed these peculiar choreic movements at about the age of 30, although he lived until the age of 56. He was the father of six children: two of these were apparently healthy; the other four, two of them girls and two boys, all suffered from this disease. In the eldest son it began when he was eighteen years old, and when Dr. Cunningham saw him he was 25. In the next brother and in one sister it began at the age of 14, and in another sister at the age of 18. One paternal aunt had also developed this trouble when she was about 20 years old. They all presented these typical incoordinate movements, and in the eldest son the speech was involved as in the present patient. In the other children the speech was affected, but not so noticeably. The progress of the disease was apparently extremely slow. The speaker said he had lost sight of the cases after they had been under his observation about a year.

Dr. Edward D. Fisher said he had under his observation at present a family, several members of which had suffered from Huntingdon's chorea. The father had died of the disease. One brother, while suffering from it, shot himself, and there were two other brothers who were now suffering from it. While the case shown by Dr. Starr certainly suggested Huntingdon's chorea, it was also somewhat suggestive of a double hemiplegia, with degeneration and athetosis. The reflexes in this case were a little more marked than those usually observed in Huntingdon's chorea. In the cases he had seen the disease began later in life than in this case.

Dr. Pearce Bailey said that in a case of Huntingdon's chorea lasting as long as this one, the characteristic mental changes should be more pronounced. The speaker said that in one of the only two cases of Huntingdon's chorea he ever saw the mental condition became such that the patient had to be committed to an institution. The slow, synergic movements in this case, however, were quite characteristic of Huntingdon's disease.

Dr. Charles L. Dana said that in a case of Huntingdon's chorea which had been under observation for a year or two at Bellevue Hospital, the patient died and the brain examined. In that instance, as in those referred to by Dr. Fisher, the disease developed much later in life than in this case. The patient had the characteristic clonic movements and the peculiar gait, but there was no disturbance of speech. In the case shown by Dr. Starr there were certain symptoms which were not usually present in Huntingdon's chorea; there was a distinct tremor of the limbs, and tonic movements of the muscles which suggested a spastic tic. On the whole, however, he thought it could be classed as a case of hereditary chorea of the Huntingdon type.

A Case for Diagnosis.—Dr. Edward D. Fisher presented this case. The patient was a man, 45 years old, who for the past three years had noticed a gradual weakening of the right side of the body, especially involving the hand and arm, and later the leg on the corresponding side. Accompanying this loss of power, there was an excessive intentional tremor affecting the muscles of the right hand and arm. The speaker said he was first inclined to regard the case as a slowly progressive lesion of the crus cerebri, but an examination of the left arm showed a distinct wasting of the muscles below the elbow, especially involving the intrinsic muscles of the hand, with considerable loss of power. This condition, according to the statement made by the patient, was of much longer standing than that on the right side. The patient denied syphilis. The pupils showed some irregularity; the reflexes were exaggerated; there was no change in the electrical responses; no disturbance of speech; no nystagmus. Dr. Fisher thought the case was possibly an irregular type of amyotrophic lateral sclerosis.

Dr. Starr called attention to the fact that the atrophy of the left arm as well as the contracture of the fingers pointed to a lesion of the ulnar nerve on that side.

Dr. Frederick Peterson said the case shown by Dr. Fisher reminded him somewhat of the condition known among the French and German writers as Benedikt's syndrome, which consists of a hemiplegia on one side, with clonic spasm or tremor and oculomotor paralysis of the opposite side. The condition had been described by Oppenheim and Charcot under the name of Benedikt's symptom-complex or syndrome.

Nerve Bridging, with a Report of a Successful Case.—By Drs. Alfred S. Taylor and L. Pierce Clark. The patient was a child upon whom the operation of nerve bridging for brachial birth palsy had been done two years and eight months ago. At the time of the operation the child was eleven months old and had complete paralysis of the left arm as the result of a rupture of the brachial plexus. Upon operation, it was found that the distal portion of the nerves could not be brought into apposition with the nerves as they emerged from the spinal foramen, and nerve bridging had to be resorted to over a space of 2 cm. Six months after the operation a certain amount of motion was noticed in the triceps and the pectoralis major, and the fingers showed the redness that was characteristic of trophic changes. Eleven months after the operation there was considerable motion in the arm, and the trophic disturbances had nearly disappeared. At the expiration of two years and four months the child was able to raise the arm, and since October, 1907, the increase in the degree of motion in the muscles of the affected extremity had been very marked. The child could now bend the elbow, and had fairly satisfactory use of an arm which was at one time absolutely palsied.

Dr. J. Ramsay Hunt said that in one case of attempted nerve bridging that had come under his observation in a child aged 20 months, the wound unfortunately became infected, suppurating for several weeks, and the arm was left in a worse condition than before the operation.

Demonstration of Patient Wearing a New Plate for Defect in Skull.—Presented by Dr. Charles A. Elsberg (by invitation). The patient was a boy of 10 years, who was admitted to Mt. Sinai Hospital on May 22, 1907, with the history that half an hour before admission he had fallen out of a second story window. He was brought to the hospital in a semi-conscious condition, with tonic and clonic convulsions of the right side of the face and of the right upper extremity. There was a large hematoma in the left parietal region. At the operation, which was done by Dr. Howard Lilienthal, there was found a depressed fracture, with considerable splintering of the fragments and an irregular fissured fracture running across the median line to the right parietal region. A large amount of bone had to be removed. There was an extensive extradural blood clot. Forty-eight hours after the operation there was complete paralysis of the right side of the body. In the belief that there was blood underneath the dura, the boy was again anesthetized, the wound reopened, and the dura incised. A very profuse hemorrhage followed, which could be controlled only by tight packing with gauze. The patient recovered from this operation after a long and complicated convalescence, and was finally left with a large defect of the skull. There was a depression so large and deep that the greater part of the closed adult fist could be inserted into it. The deformity was a very ungainly one, and the parents of the child were anxious to have something done to remedy it. On August 26, 1907, Dr. Elsberg made a large flap over the defect in the skull, turned down the skin, and inserted an aluminum plate of his own design. The result was very satisfactory. The wound was entirely closed, and healed by primary union. The boy was discharged cured on September 21. The splint employed in this case was made of aluminum, which could be made into the shape desired without trouble. The plate had a number of arms which could be cut off at different lengths to fit into the irregular defect. The ends of the arms were split longitudinally for a short distance, and one part of the arm then bent downwards. The entire plate was then bent to conform to the general shape of the skull. When in place, one part of the extremity of the arm rested on the outer surface of the skull along the edge of the defect; the other part rested against the cut edge of the skull along the margins of the defect. The plate was kept in position by a few catgut sutures which attached the horizontal part of the extremity of each arm to the periosteum. The advantages of this plate were the following: It formed a perfect arch, and the more pressure that was put upon the arch from the outside, the firmer and stronger it became. It remained in place and made a firm support, bridging over the defect of the skull. It was easily made and easily inserted, and could be bent into any shape desired. It had none of the faults of plates which rested on the outside of the skull and were apt to shift their position, nor of plates put inside of the bone, which rested directly upon the dura or the brain.

Grave Chorea and Its Relation to Septicemia.—Dr. B. Sachs read this paper (see page 505).

Dr. Charles L. Dana asked Dr. Sachs how he differentiated between this form of chorea, and that known as chorea insaniens. He generally observed several of the latter type of cases in the hospital each year, and while they were usually looked upon as of infectious origin, that fact had not been demonstrated as perfectly as in the cases reported by Dr. Sachs.

Dr. M. Allen Starr said that he had seen two cases of ulcerative endocarditis, with choreic movements of the face and extremities. The endocarditis was of definite bacterial origin, and the cases were a good illustration of the fact that any acute bacterial infection may in certain individuals produce choreic movements. That view might be taken in connection with the cases reported by Dr. Sachs. In both there was a general streptococcus infection, of which the chorea was apparently the chief manifestation. It was questionable, therefore, whether we were really dealing with a new toxic disease or merely a manifestation or prominent symptom observed in certain infections.

Dr. Nathan E. Brill asked Dr. Sachs why he used the term "toxic chorea" in reference to this disease. As yet it had not been demonstrated that a toxemia was the cause of chorea, nor yet could it be proven that in the class of cases reported by Dr. Sachs the toxins rather than the mechanical effects of the bacteria in the cerebral capillaries were the causative factors. It would seem to be more in harmony with the fact that in one of Dr. Sach's

cases there was a distinct staphylococcemia, to call this class of cases "chorea associated with septicemia," or "bacteriemic chorea," rather than toxic chorea. Pathologists had called the invasion of the circulatory system by bacteria septicemia. The tendency was now to limit the term more definitely and call such a condition "bacteriemia." If this condition were associated with chorea, either etiologically or not, we had the condition which Dr. Sachs wished to emphasize, but in that respect that form of chorea would differ but little, perhaps mainly in its clinical picture, from the chorea associated with what was called "acute articular rheumatism." It was now generally conceded that acute rheumatism was a generic term covering many conditions associated with acute inflammatory joint changes; that the most of these were regarded as the result of an acute infectious process, some with known portals of entrance, as the tonsils, others of unknown source. It was also a fact that endocarditis and chorea were accompaniments of this class of diseases, and likewise that in some forms a bacteriemia had been established. In some cases, a diplococcus tenuis, and in others a streptococcus tenuis had been recovered from the blood. The fact that in acute articular rheumatism, in which chorea and endocarditis might play a part, no bacteria had been isolated from the blood, ought not to be considered to prove that no bacteria were present in the circulatory medium, but rather, reasoning by analogy, that thus far the cultural means at our command had been inadequate or insufficient to recover the offending organism. In the light of this view, Dr. Sachs' cases might differ but little pathologically from the class of chorea associated with acute rheumatism—the clinical form, perhaps, being modified by the varying type and virulence of the invading organism. We might say, however, that Dr. Sachs had established a fact; namely, that certain cases were associated with a distinct bacteriemia. Dr. Brill did not understand that Dr. Sachs desired to establish a new form of chorea.

Dr. Sachs said he had not the slightest intention of trying to establish a new disease. His only idea was to place on record these very unusual cases, which he recognized as a special form of chorea associated with an intense general infection, of which the chorea was the most prominent symptom. In some of these cases the infective agent was the staphylococcus, in others the streptococcus or some other agent, and one object in keeping them apart was that in a therapeutic way it would help us to recognize them as very serious infections. In reply to Dr. Dana's question as to the connection between this form of chorea and chorea insaniens, Dr. Sachs said that in recent years he had dropped the term chorea insaniens, and he did not consider it a very useful one from either a clinical or pathological standpoint. The term was applied usually to the more chronic forms of chorea, associated with mental deterioration, rather than to cases of acute origin associated with high fever.

Dr. Dana said he had seen cases of chorea insaniens which corresponded very closely to those reported by Dr. Sachs. A few of the patients had recovered. He could recall no good description of this type of chorea in literature.

Dr. Sachs, in reply to Dr. Brill, said that in calling these cases toxic chorea he had not been guided entirely by his own view of the etiological factors concerned in their production. The symptoms were supposed to be due to a toxin, but whether always and distinctly bacteriemic or not he could not definitely decide.

Officers.—At the annual meeting of the Society in January the following officers were elected for the ensuing year: *President*, Dr. B. Sachs; *First Vice-President*, Dr. J. Ramsay Hunt; *Second Vice-President*, Dr. Smith Ely Jelliffe; *Corresponding Secretary*, Dr. Max Mailhouse; *Recording Secretary*, Dr. E. G. Zabriskie.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, February 17, 1908.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Report of the Committee on the Death of Dr. Henry P. Loomis.—Dr. Charles H. Knight, Chairman. (Read by the Secretary.)

Report of the Committee on the Death of Dr. Robert W. Taylor.—Dr. Edward B. Bronson, Chairman, presented the following report.

Mr. President: At your direction we call the attention of the association to the recent death of our late lamented colleague, Dr. Robert William Taylor.

It is wholly fitting that a halt should be called in our proceedings to do honor to him, one of the most distinguished of our members. To us was rendered what was probably his last public service in that domain of medicine in which his lifework was mainly engaged. Even then, hampered as he doubtless was, and with something of his old-time vigor abated, through the encroachments of the fatal malady to which he shortly after so suddenly succumbed, there was still in evidence that sincerity of purpose, zeal and earnestness which had always characterized the spirit of his work.

Though chiefly pre-eminent in the field of that most intricate and absorbing of all enigmas of medical research, syphilis, Taylor's name was also famous for signal services looking to the relief of those other ills of erring flesh, the hideous progeny of lust and folly. Through the welter of these afflictions of humanity, involving as they do the innocent as well as the erring, he waged a lifelong combat, seeking the roots and remedies of evil and bearing aloft the torch of hope.

Nor did these Augean labors limit the range of his activities. Beginning his professional career at a time when more than now were associated in a common specialty, both venereal diseases and the general affections of the skin, his interest in and contributions to dermatology were most valuable and occupied him to the end.

The list of his published works in these fields of research is an extensive one. They have had great influence in the medical world, and many of them were translated and published in foreign tongues. One of the earlier of his better known contributions thus honored was a paper entitled "On Dactylitis Syphilitica, with Observations on Syphilitic Lesions of the Joints," published in 1871. The subject matter here presented was a field comparatively unexplored, and this paper attracted attention far and near. In 1879 Taylor's name became associated with that of Bumstead in joint authorship of the fourth edition of the "Pathology and Treatment of Venereal Diseases." Under the same title, in 1895, after Bumstead's death, Taylor rewrote the book, which was now published under his own name and independently. Subsequent editions (the third appearing in 1904) bore the title, "A Practical Treatise on Genitourinary Diseases and Syphilis." This work took high rank as a textbook, and still remains a standard authority. In 1897 appeared his "Practical Treatise on Sexual Diseases of the Male and Female," of which a third edition was published in 1905. Another notable work by Taylor was his "Clinical Atlas of Venereal and Skin Diseases," and, in addition to these works, there is a long list of papers on many themes relating to those subjects with which he was specially concerned, many of them of great value and all elaborated with exemplary care.

Beside his literary labors should be placed his long service at Charity (now City) Hospital, where he trod in the footsteps of those earlier masters, Van Buren and Bumstead, together with his public teachings as professor in the chairs either of venereal or skin diseases, first at the Woman's Medical College and later at the College

of Physicians and Surgeons, as well as at the University of Vermont.

In all of these labors his work was indefatigable. With a catholic spirit, he combined the temper of the conservative. Broad in exposition of the views of others, the expression of his personal judgment was tempered with caution and reserve.

But, while acknowledging the worth of his intellectual achievements, let us not forget the amiable qualities of the man. By nature impulsive, while sometimes hasty of speech and on occasion resentful of real or fancied injuries, Taylor was a loyal friend and an agreeable man to meet. In his manner, with its air of cordiality, cheeriness and bonhomie, there was a something that savored of a personal compliment. He liked to be liked, as, in his home life he loved to be loved. The pity of it is that in his home, where all should have been happiness and content, one deep shadow of affliction succeeded another, till in his latter days lonely grief tinged his life with sombreness and doubtless accelerated its end. So, in our acclaim over the triumphs of an accomplished career, a successful life, there intrudes the note of pathos, an undertone of sympathetic regret. Peace to his ashes! Lasting honor to his shade!

(Signed) E. B. Bronson,
Chairman.
L. Duncan Bulkley.
James R. Hayden.

Address by the Retiring President.—Dr. Thomas E. Satterthwaite. (See page 381.)

Metaplasia of the Appendix Vermiformis, and a New Diagnostic Point.—Dr. Robert Tuttle Morris, the president-elect, said the time had now come to classify appendicitis cases under four separate and distinct heads: 1 Normal involution, beginning with a metaplasia of the lymphoid and submucous coats and ending with connective tissue replacements of all coats. During a part of the involution process, these patients suffered from local and reflex disturbances, and they formed, probably, the larger part of all patients suffering from the presence of the appendix vermiformis, although the cause of their trouble was commonly overlooked, or else the cases were confused with forms of Class 2, namely, infective appendicitis. Under Class 3 the speaker included the congestive type of appendicitis occurring as the result of some obstruction of the blood or the lymphatic circulation, and under Class 4 those cases due to congestion secondary to some infection, such as tuberculosis or cancer. When the appendix was undergoing a normal involution process, with replacement of its lymphoid coats by connective tissue, digestive disturbances and various local neuralgias might be due to irritation of nerve filaments entrapped in the new connective tissue. In those cases there might be no tenderness at McBurney's point, but there might be persistent tenderness at a point which Dr. Morris described as follows: Draw a line from the right anterior superior spine of the ilium to the navel. On this line, an inch and a half from the anterior superior spine, we found McBurney's point. Tenderness on deep pressure at this point gave presumptive evidence of an irritative process in the vicinity of the appendix vermiformis, but tenderness on superficial pressure at this point might mean irritation of sensory nerves of the abdominal wall, and the irritation might be due to causes ranging from hysteria to toxemia. McBurney's point was of great diagnostic value to physicians who possessed a considerable degree of collateral knowledge, aside from their familiarity with the symptoms of appendicitis. At a point situated an inch and a half from the navel we found another tender point of definite diagnostic value. McBurney's point and the point here described were six inches or more apart in the adult of average proportions. The point here described had reference to the right lumbar ganglia of the sympathetic nervous system, and notable tenderness of these ganglia had a diagnostic value which might briefly be placed in classification under the following general heads: 1. In the early stages of an acute infective process of the appendix, the right lumbar ganglia were tender and the left lumbar ganglia were not tender. The left lumbar ganglia might be described for diagnostic purposes as lying an inch and a half to the left of the navel. Under these circumstances the point here described was of secondary importance, while McBurney's point was of prime importance. 2. When an acute inflammatory process of the appendix had subsided, leaving a mucous inclusion or scar tissue, there might be no tenderness on pressure at McBurney's point, but there was tenderness at the point here described, and no tenderness at the point of the left lumbar ganglia. When the appendix was undergoing a normal involution process, with replacement of its lymphoid coats by connective tissue, digestive disturbances and various local neuralgias might be due to irritation of nerve filaments entrapped in the new connective tissue. In these cases there might be no tenderness at McBurney's point, but there was persistent tenderness at the point here described. There was no tenderness at the point of the left lumbar ganglia. When the appendix was congested without the presence of infection, as in many cases of loose kidney, there might be little or no tenderness at McBurney's point, but there was persistent tenderness at the point here described. There was no tenderness at the point of the left lumbar ganglia. The point described would also be found of value in every-day diagnostic work for differentiating between irritations of appendix origin and those of pelvic origin. In the latter class of cases, both right and left lumbar ganglia were tender. To recapitulate: Right lumbar ganglia tender, alone—appendix trouble. Right and left lumbar ganglia tender, together—pelvic trouble. Neither right nor left lumbar ganglia tender—trouble somewhere cephalad from pelvis and appendix.

Dr Robert F. Weir said that Dr. Morris' views upon the involution of the appendix were to a certain extent familiar to him. While this involution process might to a certain degree inhibit infectious invasion by partial obliteration of the lumen of the appendix, the speaker said he did not understand how it could prevent it entirely until the obliterative process was complete. As to the new diagnostic point described by Dr. Morris, it certainly afforded an interesting basis for further investigation, and if the writer's deductons were confirmed by others, it would place the discovery upon a par with the celebrated McBurney's point, upon which, however, surgeons were now inclined to lay less stress than formerly, not because good had not come out of it, but because so many had misinterpreted the special value of Dr. McBurney's suggestion. Its great importance was that a finger-point pressure was the most reliable method of eliciting pain in cases of appendicitis, but the particular point justly known by McBurney's name was not as accurate as it was supposed to be for determining the true situation of the appendix, which commonly occupied an area corresponding to a section of a circle of about half an inch radius, stretching from the crest of the ilium to Poupart's ligament. Dr. Weir said that the first and second lumbar ganglia to which Dr. Morris evidently had reference in connection with the diagnostic point he had described, did not receive, or distribute impressions from the region of the appendix at all, but their sensory reflexes were to be found considerably lower down, over the thigh. Hence any painful nerve manifestations through the sympathetic system about the navel must spring from the lower dorsal nerves. In conclusion, Dr. Weir believed if the painful spot described by Dr. Morris was confirmed by larger observation it would rather be found to be due to the remains or results of an infectious process rather than to a direct pressure upon a lumbar ganglion. In two instances in which, since the publication of Dr. Morris' paper on this subject, he had encountered

a dormant appendical trouble, he had failed to find the Morris tender spot, though by Meltze's elevation test he had clearly defined a tender appendix overlying the elevated psoas muscle. It is only fair to say that this test has not been verified in these cases by an operation.

Dr. Algernon T. Bristow of Brooklyn, said the normal involution of any organ which had become useless because it had become functionless was something which could not be measured by the lifetime of any one man; it was not measured by decades nor centuries, but by thousands of years. Furthermore, it was a strictly normal process, and we could not associate inflammatory processes with what we termed normal involution. The two were entirely distinct entities. In man we had a small appendix, possessing certain anatomical peculiarities; the first of these was its relatively poor blood supply, which favored inflammatory changes. Again, we had an organ that was poorly drained, and with these two, plus the introduction of infective material, we had the three factors which went to produce the process called appendicitis. The speaker said he seriously objected to the statement made by Dr. Morris that chronic obliterative appendicitis should be looked upon as a normal involution process. Since we always found a round cell proliferation in the submucosa and increase in connective tissue, we had no more right to speak of that as a normal involution of the appendix than we had to speak of cirrhosis of the kidney as a normal involution of that organ. The same was true of the liver. The proliferation of connective tissue in these various organs was a disease process, and not a process of normal involution. In regard to the importance of recognizing chronic obliterative appendicitis, and the symptoms it gave rise to, the speaker said that Dr. Morris might go even a little further than to refer to the condition of those patients as one of simple discomfort. They were often treated as cases of chronic dyspepsia, gastric catarrh, colitis, etc., but when we came to examine them we found this condition of chronic inflammation of the appendix, which occasionally does, although rarely, explode into an acute process. The proper treatment of those cases was not altogether a question of comfort; it was really a question of health versus invalidism. Although the removal of the appendix in these cases was not a life-saving operation, the retention of the organ kept these patients ill, and it was sometimes astonishing to see the rapid improvement in health after operation. Some of the most happy results he had seen after removal of the appendix were in these very cases of chronic cirrhotic appendicitis.

Dr. Alexander B. Johnson said that, while he had no personal knowledge of the new diagnostic point in appendicitis described by Dr. Morris and had had no opportunity to verify it, he felt inclined, in view of what we already knew of Dr. Morris' work in connection with this general subject, to take it seriously and test its value in the future. The speaker said it so happened that a very large proportion of his cases of appendicitis were of the acute infectious type, although a certain proportion belonged to the class that the reader of the paper had very properly described as due to normal involution of the appendix. Both involution and evolution went on in the individual, just the same as they did in the race, but he could not quite agree with Dr. Morris that this involution of the appendix went on with but little risk of an infectious process. In a very large proportion of cases that was doubtless true, but he had seen a goodly number of cases of appendicitis in which the major portion of the distal end of the appendix had undergone involution, with an inflammatory process at the base, and this pent-up infectious focus had been prevented from emptying itself into the cecum by the more or less strictured condition of the organ. Further, he had seen a perforated appendix in which the major portion of the organ had undergone an apparently normal involution. It occasionally happened that infectious appendicitis, with perforation, had occurred in tuberculosis of the appendix, and the speaker recalled one case where it happened in cancer of the appendix. Dr. Johnson said it had been his practice for a number of years past, in operating on women for pelvic conditions, to remove the appendix at the same time, whether it had given rise to symptoms or not, and in a fairly large proportion of these cases the appendix was found to be undergoing a normal involution. In only a small proportion of those cases had the patients given any history of symptoms referable to the appendix, although in some instances they might have been masked by the pelvic symptoms.

Dr. Franz J. A. Torek said he had been aware for a number of years that there was a tender point at the place described by Dr. Morris, but he was inclined to look upon it as of less diagnostic value than the reader of the paper. He had found it present in cases of appendicitis of the ordinary type, and he would not limit it, as he understood Dr. Morris to say, to cases of the normal involution type only. He had met with it in a case where there was no trouble with the tubes or ovaries, and where the appendix had been removed four years before. The distance from the anterior superior spine to the umbilicus was usually given as from seven to eight inches; it might be only half that distance, and he had repeatedly found it to be four inches; under such conditions McBurney's point and that described by Dr. Morris might be very close together. He would not limit the exact location of this point to an inch and a half from the umbilicus; the distance might be a little more or less, the same as with McBurney's point.

Dr. John B. Walker said his own views and conclusions in regard to this subject coincided very closely to those of Dr. Johnson. He could recall quite a number of cases of appendicitis of the ordinary type in which the appendix was obliterated, and in which the disease was limited to the unchanged tissue that remained. In the chronic cases of obliterative appendicitis the patients ofttimes complained of a good deal of pain, which might even be severe enough to prevent them from working, and this condition, to people who had their living to earn, was a serious matter. In regard to the point of tenderness described by Dr. Morris, the speaker said he had had no experience with it. In one or two instances the point of tenderness had been nearer the umbilicus than to McBurney's point.

Dr. Charles H. Peck said he would await with interest further observations regarding the diagnostic accuracy of the point described by Dr. Morris. He had several times been unable to differentiate between trouble in the right tube and in the appendix, and if this point in diagnosis would prove an effective help in those cases, it would certainly be of great value. The speaker said he was inclined to agree with Dr. Bristow that the partial obliteration of the appendix that was not infrequently observed should be looked upon as the result of a chronic inflammation rather than as representing a true normal involution.

Dr. Albert A. Berg said the meaning of pain in the lower right quadrant of the abdomen was very often obscure. If the appendix or the diseased adnexa were the organs at fault, it was comparatively easy, in most instances, to make the correct diagnosis. There were, however, many other structures in that particular area which frequently were the seat of disease, and the recognition of which it was most important to establish. In this connection, the speaker said, he particularly had in mind pathological conditions affecting the kidney and the lower portion of the right ureter, and he could recall instances where patients whose symptoms were unrelieved by an appendectomy were subsequently found to be suffering from a uretral stone, or a kink in the ureter, or trouble in the right kidney. Dr. Berg said that to attempt to make the diagnosis in these cases by the pain or tenderness only seemed to him to be taking a step backwards. It required

more than mere local tenderness or local pain in the lower right quadrant of the abdomen to establish a diagnosis. There were inflammatory conditions of the cecum which not infrequently excited pain in the lower iliac region, and he knew of one instance where three operations had been done for the relief of such pain without success. In regard to the liability of an acute infectious process with gangrene and perforation occurring in the case of so-called normal involution of the appendix, the likelihood of such an attack would probably be very slight if the process of involution was a uniform one, *i.e.* involving the entire lumen of the appendix uniformly, otherwise—*i.e.* if the process of involution was more advanced in some parts of the appendix and less in others, it was fair to assume that stricture formation would be apt to result and thereby increase rather than diminish the danger of infection, with consequent gangrene and perforation.

Dr. Morris, in closing the discussion, said that in cases of infective appendicitis, associated with the presence of hyperplastic connective tissue, similar to that occurring in fibroid degeneration of the appendix, we had a history of previous attacks of acute appendicitis, and the condition was entirely distinct from that observed in cases occurring in the course of fibroid degeneration of the organ. In the recurrent infective type of appendicitis we had scar tissue resulting from a previous acute attack; these patients usually complained of numerous attacks of pain which were not sufficiently severe to put them to bed, and the tenderness was not so apt to be persistent. The speaker said that, while he was not in a position to offer an entirely satisfactory explanation of the cause of the point of tenderness he had described occurring in the course of fibroid degeneration appendicitis he did not consider it as secondary to the presence of infectious material carried by the lymphatics, and was more inclined to regard it as the result of sympathetic connection; the subject had not yet been worked out, excepting in a clinical way. He was willing to admit that normal involution was not exactly the right term to apply to this process going on in the appendix, and for that reason he had added the word hyperplasia. That still did not cover the ground. Fibroid degeneration was probably the preferable name for the condition.

College of Physicians of Philadelphia

At a stated meeting, held March 4, Dr. Joel E. Goldthwaite of Boston presented, by invitation, a communication entitled "Our Present Understanding of the Non-Tuberculous (Rheumatic) Diseases of the Joints." He raised the question whether what at the present time is designated rheumatism is in reality a definite clinical entity and not merely a symptomatic group of disorders. He pointed out that multiple arthritis may develop in the course of a number of infectious diseases, such as influenza, scarlet fever, typhoid fever, pneumonia, and be due to numerous microorganisms. In the treatment, therefore, primary consideration must be given to the underlying condition. In this connection the tonsil especially should be carefully investigated. Attention should be directed also to the gastrointestinal tract, and infection from this canal prevented. In some instances speedy relief will follow evacuation of accumulations in the accessory sinuses of the nose, the antra and the ethmoidal cells. Strain and faulty posture likewise may give rise to articular disease. This is sometimes observed in the knees, at times also in the wrists. It is not generally appreciated that the pelvic joints possess a certain degree of mobility and that, as a result of strains, such as result from labor and heavy lifting and the like, displacements may occur that give rise to pain in various situations, and sometimes simulating sciatica. Great relief can be afforded by intelligent manipulation. As a result of faulty posture in early life the scapula may acquire an angular deformity at the origin of its spine, so that movement of the shoulders is attended with pain. This can be corrected by surgical measures.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners, State of Oregon.

Portland, January 7, 8, and 9, 1908.

PHYSIOLOGY.

1. What is tidal air; complemental air; supplemental air; residual air?
2. State function of carbohydrates.
3. What is meant by tetanus?
4. Describe and give formation of lymph.
5. Define cardiac circle.
6. What is the structure of the stomach? Describe its coats.
7. State variety of secreting membranes and where found.
8. Describe physiology of hearing.

ANATOMY.

1. Describe the elbow joint.
2. Describe the posterior triangle of the neck, giving parts found in it.
3. Describe in detail, ligation of the subclavian artery in the third part of its course.
4. Name the principal branches of the fifth cranial nerve.
5. What anatomical structures lie beneath Poupart's ligament?
6. What parts would be divided in amputation through the middle of the arm?
7. Describe the common bile duct.
8. Give the blood supply of the eyeball.

HISTOLOGY.

1. Give the histological formation of a long bone as seen in a cross section.
2. Name the principal forms of connective tissue.
3. Trace the course of the urine from the capsule of Bowman to the pelvis of the kidney.
4. Name the corpuscular elements in the blood.

CHEMISTRY.

1. What is an element, and how many are there?
2. Define matter, force, energy, giving an example of each.
3. Define chemical affinity, and how does it differ from other forces?
4. What points are to be considered and substances to be determined in the examination of normal and abnormal urine?
5. Describe the tests for bile, blood, pus, and urea in urine.
6. Give tests for detection of morphine.
7. Give tests for arsenic.
8. Given a suspicious powder, how would you treat it for strychnine?

MATERIA MEDICA AND THERAPEUTICS.

1. Name some of the digestive ferments and when indicated.
2. What chemical changes take place when mineral acids are taken into the stomach?
3. Give the physiological action of phosphorus.
4. Name some of the preparations of arsenic. Give dose of each.
5. Name two stimulant expectorants. Give indications and dose of each.
6. Name some of the antagonists and synergists of mercury.
7. What are the therapeutic indications for digitalis and amyl nitrite?
8. Name two motor depressants. Under what conditions are they indicated?

DIAGNOSIS.

1. Give diagnosis of Pott's fracture.
2. Give diagnosis of gallstones in the gall-bladder.
3. Give diagnosis of stenosis of the pylorus.
4. Given a case, age 16, two months before had a fracture of the upper third of the femur with union, deform-

ity and two inches shortening. Make diagnosis. What causes the shortening?

5. Give diagnosis of abscess of liver.

6. Differentiate measles and scarlet fever twenty-four hours after the eruption first appears.

7. How could you diagnose green stick fracture of the radius in a child two years old?

8. Give symptoms of stone in the male bladder.

PRACTICE OF MEDICINE.

1. Give causes and symptoms of acute endocarditis.

2. Give symptoms and pathology in acute pleurisy.

3. How would you treat a case of acute lobar pneumonia?

4. Differentiate symptomatically asthma from edema of the glottis.

5. Differentiate a syphilitic from a tubercular ulcer of the pharynx.

6. Give the pathological anatomy in acute parenchymatous nephritis.

7. Diagnose symptomatically cerebral hyperemia from cerebral anemia.

8. Differentiate erysipelas from erythema. Give treatment of former.

EYE AND EAR.

1. What is phlyctenular conjunctivitis? Give treatment.

2. Name some of the ulcers of the cornea.

3. What are the symptoms of acute catarrh of the middle ear?

4. What are the symptoms of otitic mengitis?

NERVOUS DISEASES.

1. What are the phenomena of the reaction of degeneration?

2. What is the etiology and pathology of tabes dorsalis?

3. Give treatment of alcoholic multiple neuritis.

4. Give prominent symptoms of paralysis agitans.

DISEASES OF WOMEN.

1. Give in detail the operation for post-operative ventral hernia.

2. Give the diagnosis and treatment of intestinal adhesions following laparotomy.

3. Give early diagnostic symptoms of malignancy of the mammary gland.

4. Patient 54 years old, give symptoms of malignancy of the uterus.

5. Give causes and symptoms of vesicovaginal fistula.

6. Have the ovaries any influence upon catalepsy? State your reasons.

7. Following abdominal operation, what causes fecal fistula? What treatment is demanded?

8. Define leucorrhea and give three causes.

OBSTETRICS.

1. What is the conjugate and transverse diameter of the inlet and outlet of the pelvis? Give its anatomical points of measurement.

2. What is the cause of rupture of the uterus, and under what circumstances does it occur?

3. Give your treatment for inevitable abortion.

4. Give your treatment for post-partum hemorrhage.

5. Give cause and treatment for transverse presentations.

6. Give cause, diagnosis, and treatment for puerperal eclampsia.

7. When would you use forceps and how?

8. Give the anatomy of the uterus, and state what changes take place during gestation.

DISEASES OF CHILDREN.

1. Give diagnosis and treatment of spasmodic croup.

2. What are the causes of convulsions in infants and children?

3. What is the prognosis and treatment in diphtheria?

4. Give differential diagnosis of measles, scarlet fever, chicken-pox.

5. Give symptoms of acute bronchopneumonia.

6. Give prophylaxis and treatment of ophthalmia neonatorum.

7. Give a word picture of a case of scabies.

8. Give causes and treatment of summer diarrhea.

SURGERY.

1. Discuss angioma and its varieties.

2. What symptoms would make you suspect malignant disease of the sigmoid colon? Indicate treatment.

3. If called to a case of compound fracture of both bones of the leg four hours after the accident, what conditions would decide you for or against amputation?

4. Describe the early symptoms of caries of the dorsal spine, and diagnostic tests for this condition.

5. What are the causes of fistula *in ano?* Discuss the pathology of this condition.

6. Discuss the pathology of congenital torticollis, and its treatment.

7. Describe, step by step, the removal of the left half of a large simple goiter.

8. What are the causes and symptoms of acute suppurative osteomyelitis of the tibia?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF OREGON.

Portland, January 7, 8, and 9, 1908.

PHYSIOLOGY.

1. *Tidal air* is the air which is constantly passing in and out of the lungs during ordinary calm respiration. It measures about 30 cubic inches.

Complemental air is the air which can be taken in beyond what is normally inspired in ordinary breathing. It measures about 100 cubic inches.

Supplemental air is the air which can be expelled at an extraordinary expiration. It measures about 100 cubic inches.

Residual air is the air which still remains in the lungs after the deepest expirations. It measures about 100 cubic inches.

2. The *function of the carbohydrates* is to supply animal heat and energy; also to form fats and possibly to help form proteids.

3. *Tetanus* is the condition produced in a muscle when it is stimulated so rapidly that it has no time to relax between one stimulus and the next one; the result is a prolonged, steady contraction.

7. *Secreting membranes* are: (1) *Serous* membranes, as the pleuræ, pericardium, peritoneum, tunica vaginalis of the testis. (2) *Synovial* membranes, in the articulations. (3) *Mucous* membranes, lining the digestive, respiratory, and genitourinary tracts. (4) *Cutaneous* membrane, or skin.

8. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain." —(Brubaker's *Physiology.*)

ANATOMY.

2. The posterior triangle of the neck is bounded: *Anteriorly*, by the posterior border of the Sternomastoid; *posteriorly*, by the anterior border of the Trapezius, and *below* by the superior border of the clavicle. Its apex is at the occiput. It is subdivided into the occipital and subclavian triangles, by the posterior border of the Omohyoid.

The *floor* is formed by the Splenius capitis, Levator anguli scapulæ, and the Scalenus medius and posticus.

The *roof* is composed of: Skin, Platysma myoides, superficial and deep fascia.

The *contents* are: *Arteries*: Subclavian (third part), suprascapular, transversalis colli, occipital, and superficial cervical. *Veins*: Suprascapular, transversalis colli, external jugular, sometimes the subclavian. *Nerves*: Spinal accessory, branches of cervical plexus, brachial plexus. *Other structures*: Lymphatic glands and Scalenus anticus.

4. The principal branches of the Fifth Cranial Nerve are:

I. *Ophthalmic*, giving off the: Lacrymal, Frontal, and Nasal.

II. *Superior Maxillary*, giving off the: Meningeal, Orbital, Spheno-palatine, Posterior superior dental, Middle superior dental, Anterior superior dental, Infraorbital, Palpebral, Nasal, and Labial.

III. *Inferior Maxillary*, giving off the: Recurrent, Internal pterygoid, Masseteric, Deep temporal, Buccal, External pterygoid, Auriculo-temporal, Inferior dental, and Lingual.

5. The anatomical structures which lie beneath Poupart's ligament are (from without inward): External cutaneous nerve, Iliacus, anterior crural nerve, Psoas, femoral artery, femoral vein, femoral ring.

6. In amputation through the middle of the arm the following parts are divided: Skin; fascia; Biceps, Triceps, and Brachialis anticus muscles; brachial, superior profunda, and inferior profunda arteries; brachial, basilic, and cephalic veins; median, ulnar, internal cutaneous, musculo-spiral, and musculo-cutaneous nerves; and humerus.

8. The *blood supply of the eyeball*: The short posterior ciliary, long posterior ciliary, and anterior ciliary arteries, and the arteria centralis retinæ.

HISTOLOGY.

2. The principal forms of connective tissue are: White fibrous, yellow elastic, areolar, mucous, retiform, adipose, adenoid, neuroglia, cartilage, bone, dentine, and blood.

3. Course of the urine from the capsule of Bowman to the pelvis of the kidney: The neck of the capsule, proximal convoluted tubule, spiral tubule, descending limb of Henle's loop, Henle's loop, ascending limb of Henle's loop, zigzag tubule, distal convoluted tubule, junctional tubule, collecting tubule, duct of Bellini.

4. The corpuscular elements in the blood are: Red or colored corpuscles, white or colorless corpuscles, and platelets.

CHEMISTRY.

1. An *element* is a substance which cannot by any known means be split up into two or more other kinds of substance. There are, at present, eighty elements.

2. *Matter* is anything which occupies space. Example, a cannon ball.

Force is that which produces or tends to produce motion or change of motion in matter. Example, gravitation.

Energy is the capacity of matter for doing work. Example, falling water may turn a wheel.

3. *Chemical affinity* is the force that binds atoms together to form molecules.

It differs from other forces in: (1) Only acting between atoms, and not on molecules or masses; (2) being able to effect changes in chemical composition; (3) it will not act at a distance, but the atoms must be in intimate contact; (4) it will not act if other substances are interposed; (5) it is usually necessary to start or to support it by heat, or electricity, or other agency.

4. In examining *normal* urine the following points are to be considered:

The quantity voided in twenty-four hours, its general appearance, color, odor, reaction, specific gravity, quantity of solids excreted, quantity of urea, uric acid, chlorides, sulphates, phosphates.

In *abnormal* urine, in addition to the above, examination should be made for albumin, sugar, excess of indican, acetone, blood, bile, pus, casts, epithelium, parasites, pathogenic bacteria, and foreign bodies.

5. Test for *Bile*: Put 3 c.c. HNO_3 in a test tube, add a piece of wood, and heat until the acid is yellow; cool, When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquids, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

Test for *Blood*: To the urine add a solution of potassium hydroxide to distinct alkaline reaction; heat nearly to boiling (do not boil). A red precipitate is produced.

Chemical test for *Pus* in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

A comparatively easy test for *Urea* is that of Fowler, based upon the loss of the specific gravity of the urine after the decomposition of the urea by hypochlorite. "To apply this method the specific gravity of the urine is carefully determined, as well as that of the liquor sodæ chlorinatæ (Squibb's). One volume of the urine is then mixed with exactly seven volumes of the liquor sodæ chlorinatæ, and, after the first violence of the reaction has subsided, the mixture is shaken from time to time during an hour, when the decomposition is complete; the specific gravity of the mixture is then determined. As the reaction begins instantaneously when the urine and reagent are mixed, the specific gravity of the mixture must be calculated by adding together once the specific gravity of the urine and seven times the specific gravity of the liquor sodæ chlorinatæ, and dividing the sum by eight. From the quotient so obtained the specific gravity of the mixture after decomposition is subtracted; every degree of loss in specific gravity indicates 0.7791 gram of urea in 100 c.c. of urine. The specific gravity determinations must all be made at the same temperature; and that of the mixture only when the evolution of gas has ceased entirely." (Witthaus' *Manual of Chemistry.*)

6. Tests for the detection of *Morphine*: (1) Add a solution of neutral ferric chlorid; a blue color is given in the presence of morphine. (2) Add some Fröhde's reagent (a fresh solution of ammonium molybdate in concentrated sulphuric acid); in the presence of morphine a violet color is produced, which changes to blue, dirty green, and pale pink.

7. Tests for *Arsenic*: Marsh's and Reinsch's are the two most commonly used tests. Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry, glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

8. To test for *Strychnine*: Add concentrated suphuric acid; it forms a colorless solution; a crystal of potassium bichromate, if drawn through this solution, produces a track of color, which is in turn blue, violet, rose-colored, and yellow.

MATERIA MEDICA AND THERAPEUTICS.

1. There are only two official digestive ferments, viz., pepsin and pancreatin. Ingluvin and papayin are also digestive ferments.

Pepsin is indicated as an aid to gastric digestion in gastralgia, gastric cancer and ulcer, atonic dyspepsia, and the vomiting of pregnancy.

Pancreatin is indicated as an aid to digestion, and for the predigestion of food, in convalescence, in wasting diseases, and in intestinal dyspepsia.

2. When mineral acids are taken into the stomach, they unite with bases and form neutral salts.

3. Phosphorus acts locally as an irritant: internally it is a stimulant to the nervous system and also to the bone-forming cells, a tonic, a repairer of waste, a circulatory stimulant and an aid to the formation of red blood corpuscles. It is partly oxidized into phosphorus acid or phosphoric acid, of the oxygen in the red corpuscles. In large doses it increases the urea and other nitrogenous products, raises the body temperature, diminishes the glycogen of the liver, and may cause fatty degeneration.

4. The official preparations of arsenic, with their doses, are: Arseni trioxidum, gr. 1/30; Liquor acidi arsenosi, ♏vij; Arseni iodidum, gr. 1/20; Sodii arsenas, gr. 1/6; Sodii arsenas exsiccatus, gr. 1/20; Liquor potassii arsenitis, ♏vij; Liquor sodii arsenatis, ♏v; Liquor arseni et hydrargyri iodidi, ♏vij.

5. Two stimulating expectorants: The ammonium salts and senega.

The chloride of ammonium is thus used in doses of gr. x-xx, in bronchorrhea and chronic bronchitis, and the carbonate of ammonium in doses of gr. v is used in the crisis of pneumonia.

Senega is used as an expectorant in chronic bronchitis, and in acute bronchitis; the dose of the syrup of senega is ʒi; of the fluid extract ♏xv.

7. *Therapeutic indication for digitalis*: Mitral lesions of the heart, cardiac palpitation, irritable heart from nerve exhaustion, cardiac and renal dropsy, exophthalmic goiter.

Therapeutic indications for amyl nitrite: Angina pectoris, epilepsy, whooping cough, asthma, laryngysmus stridulus, and high arterial tension in arteriosclerosis, nephritis.

8. Two motor depressants: Chloral and stramonium.

Chloral is indicated: As a hypnotic in insomnia, in whooping cough, tetanus, strychnine poisoning, hernia, convulsions.

Stramonium is indicated: In asthma, whooping cough, chorea, dysmenorrhea, neuralgia, mania.

DIAGNOSIS.

1. In Pott's fracture the foot is twisted outward, the sole everted, and the heel drawn up; there is a depression at the site of the fracture, the inner malleolus either projects prominently or the fragment can be felt and crepitus elicited; the foot is shortened, and the ankle is swollen and widened.

2. Gallstones in the gall-bladder may give no symptoms at all; or there may be dull pain localized over the region of the gall-bladder, digestive disturbances, muscular rigidity, and leucocytosis; or there may be very severe pain in

the region of the gall-bladder, radiating to the right shoulder and the epigastrium, with vomiting, collapse, severe sweating, and sometimes jaundice.

3. Stenosis of the pylorus is diagnosed by the peculiar recurrent vomiting of large quantities of food, some of which has been in the stomach for several days; the vomitus contains the *Sarcina ventriculi* and several bacteria; the stomach is prolapsed considerably; a splashing sound may be elicited on palpation, and sometimes a tumor may be felt in the region of the pylorus.

4. The shortening is caused by the action of the following muscles: The Glutei, Biceps, Semimembranosus, Semitendinosus, Tensor vaginæ femoris, Rectus, Sartorius, Adductors, Gracilis, and Iliopsoas.

5. Abscess of the liver is diagnosed by: The enlargement of the liver, jaundice, tenderness, pain which may radiate to the right shoulder; emaciation, chills, fever, and sweats may also be present; aspiration will confirm the diagnosis by revealing pus; there may also be leucocytosis and anemia.

6. In *scarlet fever* the eruption is brighter, is on a red background, punctiform, and is more uniform; the temperature is higher, the pulse quicker; the tongue is of the "strawberry" type, the lymphatics in the neck may be swollen, and there is sore throat.

In *measles* the eruption is darker, less uniform, more shotty; the temperature is lower, pulse slower, the tongue is not of the "strawberry" type; coryza, coughing, and sneezing may be present.

7. In green-stick fracture of the radius in a child two years old a bowing or angle in the bone may be detected on palpation, there will usually be a history of a fall on the outstretched hand or on the forearm, pain and tenderness with "favoring" of the part will be apparent, and an *x*-ray examination may clear up the diagnosis.

8. The *symptoms of stone in the male bladder* are: Increased frequency of micturition; pain at end of urination, chiefly felt at the end of the penis or in the neck of the bladder; the urine may contain pus, mucus or blood; a "click" can be obtained by using a searcher or sound; examination by the cystoscope may reveal the presence of the stone.

PRACTICE OF MEDICINE.

4. In *asthma* the dyspnea is expiratory only: In *edema of the glottis* it is inspiratory, and occasionally expiratory also.

5. Syphilitic ulcers of the pharynx and tubercular ulcers of the pharynx are differentiated by Bosworth as follows:

SYPHILITIC ULCERS.	TUBERCULOUS ULCERS.
Deeply excavated.	No apparent excavation.
Few granulations, and those highly inflammatory.	Much indolent granulation.
Deep-red areola.	Faint areola.
Sharply-cut edges.	Irregular and ill-defined edges.
Distinct demarcation.	Demarcation indistinct.
Yellow purulent secretion.	Grayish, ropy mucous secretion.
Discharge profuse.	Discharge scanty.
Penetrating to deeper tissues.	Superficial, with lateral in place of deep extension.
No fever as a rule.	Hectic fever as a rule.

7. *Cerebral hyperemia* is characterized by: Fullness in the head, vertigo, restlessness, insomnia or disturbed sleep, ringing in the ears, and forgetfulness; on lying down the symptoms become worse; hyperemia of the retina may be detected by the ophthalmoscope.

Cerebral anemia is characterized by: Pallor, nausea, vertigo, yawning, dilated pupil, headache, forgetfulness, tinnitus aurium, and forgetfulness; on lying down the symptoms improve; pallor of the retina may be detected by the ophthalmoscope.

8. *Erysipelas* is characterized by: A rise of temperature; a tendency to spread; the skin is swollen and the affected part has a well-defined border and raised margins; there are pain, considerable constitutional disturbance, and a possibility of infection.

In *erythema*: There is no rise of temperature, no tendency to spread, no raised margins, no constitutional disturbance; the margin of the rash gradually fades into skin of a normal healthy color.

EYE AND EAR.

2. *Some of the ulcers of the cornea*: Catarrhal, creeping, deep, infected, rodent, simple, superficial, dendritic, indolent.

NERVOUS DISEASES.

1. *The phenomena of the reaction of degeneration*: "In health a sharp contraction occurs if a faradic current is applied to a nerve or over a muscle, and a similar contraction can be obtained with the galvanic current just when the circuit is closed or broken, but not when the current is passing.

"In contrast with these conditions is the *reaction of degeneration*. When this is present we obtain no muscular twitching with the faradic current and none over the nerve with the galvanic; but *with the galvanic over the muscle a slow, worm-like contraction* occurs, and the response to the positive pole is as good as to the negative, or better; whereas, normally there is far better response to the negative. This is the *complete* reaction of degeneration; in *partial* reactions of degeneration all the normal reactions may be present, but diminished in intensity." (Cabot's *Physical Diagnosis.*)

2. TABES DORSALIS: *Etiology*: Tabes dorsalis is a disease of adult life; is more common in men than in women; is more common in cities than in the country; syphilis is believed to be the most frequent direct cause; alcoholism, injury, exposure to cold and wet, have all been urged as causes, but they are not now assigned so important a place as etiological factors as was formerly the case.

Pathology: Tabes dorsalis is a condition in which the posterior columns and nerve roots of the spinal cord are degenerated, and which is characterized by incoordination, loss of deep reflexes, and various disturbances of sensation and nutrition.

The posterior columns of the cord are gray and shrunken and show considerable overgrowth of connective tissue in the columns of Goll, Burdach, and Lissauer; this process extends upward from the lumbosacral region; the posterior nerve roots degenerate and become atrophic. The meninges over the affected parts become opaque and adherent. Some of the cranial nerves may also atrophy, notably the optic, but also the motor oculi and vagus.

4. *The prominent symptoms of paralysis agitans* are: A fine tremor, usually beginning in the hand; muscular rigidity, with the head bowed, the body inclined forward, and the knees bent; the "festinating gait," in which the patient walks faster and faster and even runs, to avoid falling forward; the face is expressionless.

DISEASES OF WOMEN.

3. The *early diagnostic symptoms of malignancy of the mammary gland* are: An ill-defined thickening of one of the lobes of the breast, or a nodular swelling; generally painless, or accompanied by an occasional darting pain; it is an indolent swelling, with no signs of inflammation, and perhaps an induration of the part; an exploratory puncture or incision will settle the diagnosis between malignancy and a cyst.

4. In a patient 54 years old the symptoms of malignancy of the uterus would be: Hemorrhage, an offensive discharge, and pain; later on, chachexia.

5. *Vesicovaginal fistula may be caused* by: Injuries, and traumatisms received during labor; ulceration due to a retained or ill-fitting pessary, or a vesical calculus; a malignant growth of the bladder or vagina.

Symptoms: The urine constantly dribbles from the vagina; micturition is painful; excoriation of vagina, vulva, and thighs; cystitis may be present, and the patient's general health deteriorates.

7. *Fecal fistula following abdominal operation may be caused* by: Injury to the intestine while separating adhesions; leakage of the intestine after an anastomosis or suturing; necrosis of the intestine from pressure or from an inflammatory mass.

The treatment demanded is: Cleanliness; protection from irritation, and, failing ultimate healing, operative treatment is required.

8. *Leucorrhea* is a whitish discharge from the uterus or vagina.

Three causes: Pelvic congestion, endometritis, retroversion of the uterus.

OBSTETRICS.

1. The *conjugate diameter* of the *inlet* of the pelvis is a line drawn from the middle of the sacral promontory to the top of the symphysis pubis. It is about four inches in length.

The *transverse diameter* of the *inlet* of the pelvis is a line drawn right across the pelvis from one lateral margin of the brim to the other. It is about five inches in length.

The *conjugate diameter* of the *outlet* of the pelvis is a line drawn from the tip of the coccyx to the lower surface of the symphysis pubis. It is about five inches in length.

The *transverse diameter* of the *outlet* of the pelvis is a line extending across the pelvis from one tuberosity of the ischium to the other. It is about four inches in length.

2. The cause of *rupture of the uterus* is: Strong uter-

ine contraction in combination with some obstacle to the birth of the fetus. It is apt to occur in cases of contracted or deformed pelves, transverse presentation, obstruction from tumors, unduly large fetal head.

3. In *inevitable abortion* there are two lines of treatment:

(1) The *expectant,* which consists in absolute rest, the insertion of tampons in the vagina, vaginal douches, and the administration of ergot.

(2) *Active treatment,* which consists in anesthetizing the patient, dilating the os, and removal of the products of conception generally by curettage. This is followed by intrauterine douche and sometimes by the application of Churchill's tincture of iodine to the uterine cavity, and insertion of gauze.

7. *Indications for the use of forceps* are: "1. *Forces at fault*: Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. 2. *Passages at fault*: Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. 3. *Passenger at fault*: A. Dystocia due to (*a*) occipito-posterior, (*b*) mento-anterior face, (*c*) breech arrested in cavity. B. Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). 4. *Accidental complications*: Hemorrhage; prolapsus funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both." (From Jewett's *Practice of Obstetrics.*)

DISEASES OF CHILDREN.

2. *Causes of convulsions in infants and children* are: "Overeating, especially of indigestible food; rachitis, debility from exhausting diarrheal diseases; high fever, especially at the onset of the acute specific infections; very seldom dentition, phimosis, and acute middle-ear inflammation; injuries to the brain at birth, infantile hemiplegia, meningitis, and tumor of the brain; rarely of spinal cord disease." (From Butler's *Diagnostics of Internal Medicine.*)

6. *Prophylaxis of ophthalmia neonatorum*: Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a one or two per cent. solution of nitrate of silver, immediately after birth.

Treatment: Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a two per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

7. *Scabies* is a contagious, animal, parasitic disease due to the *Sarcoptes scabiei,* characterized by burrows and a multiform eruption, and attended by severe itching. The eruption usually occupies certain areas where the skin is thin; these are the interdigital spaces, the flexor surface of the wrist and arm, the anterior and posterior axillary folds, the mammæ and nipples (in women), the umbilicus, the buttocks, the penis, the inner side of the thighs and legs, and the toes. The face is exempt except occasionally in infants. The itching is intense and worse at night. The affection is curable, but dermatitis may result from overtreatment.

SURGERY.

3. If the blood-vessels are injured to such an extent that it is evident that the foot must become gangrenous, or if the large arteries are divided, amputation should be performed. So, too, when there is much destruction of bone, and when there is much suppuration and indications of septicemia. If it is probable that recovery will be long and tedious and in the end the patient will only have a limb of doubtful value, the patient should be asked to decide the question of amputation.

4. The *early symptoms of caries of the dorsal spine* are: (1) The child easily tires, even in his play, and often wants to lie down and rest; (2) local tenderness, which is found by pressing over the spinous processes one at a time, and also by pressing lightly on the head; (3) all movements are made very carefully, from fear of causing pain; (4) in picking up anything from the floor, the child will keep the spine rigid and bend the knees; (5) the shoulders are apt to be elevated and the spine kept rigid.

5. The *causes of fistula in ano* are: Some suppurative condition in the neighborhood of the rectum, such as an anal abscess or ischiorectal abscess; stricture of the rectum; perforation of the mucous membrane of the rectum by some foreign body, such as a fish-bone, and ulceration of the mucous membrane of the rectum.

Pathology: There are four varieties: (1) The *complete,* which opens into the rectum internally and on the perineum externally; (2) the *external incomplete,* or *blind external,* which opens on the perineum but not into the rectum; (3) the *internal incomplete* or *blind internal,* which opens into the rectum but not on the perineum; (4) the *horseshoe* fistula, which extends around the rectum and opens on each side. The internal opening is generally between the two sphincters, but may be above the internal sphincter and below the external sphincter. There may be several pockets or side tracts extending in different directions.

6. *Pathology of congenital torticollis*: "In the ordinary type of congenital torticollis, as demonstrated at operations on children, the substance of the affected muscle or muscles is simply lessened in amount, and there is a disproportionate area of tendinous substance, as contrasted with the contractile tissue. In other instances the muscle may be traversed by fibrous bands or patches of scar-like tissue. Such changes are far more common in acquired torticollis, and they indicate primary or secondary inflammation of the muscular substance. In cases of torticollis in infancy, or when the distortion is slight, there is but little general effect of the local contraction; but, if the deformity persists, secondary changes appear. The face on the affected side is flatter, the nose, the corner of the mouth, and the eyelids may be drawn down toward the contraction, and the skull even may be markedly deformed. There is in all cases of this character lateral distortion of the cervical spine, the convexity being on the side opposite the contraction. Later, secondary curvature of the spine develops. Usually there are also an increase of the dorsal convexity, "round shoulders," and a lateral compensatory curve in the direction opposed to the superior deformity. If the deformity persists the neighboring muscles become eventually involved, together with the other tissues on the contracted side, the fascia presenting the greatest resistance to the correction." (*Reference Handbook of the Medical Sciences.*)

BULLETIN OF APPROACHING EXAMINATIONS †

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	April	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	April	7
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	7
Connecticut*	Chas. A Tuttle, New Haven	New Haven	July	14
Delaware	J. H Wilson, Dover	Dover	June	16
Dist. of Col'bia	W. C. Woodward, Washington	Washington	April	14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April	13
Georgia	E. R. Anthony, Griffin	Atlanta	May	—
Idaho	J. L. Conant, Jr., Genessee	Boise	April	7
Illinois	J. A. Egan, Springfield	Chicago	April	15
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	—
Kansas	T. E. Raines, Concordia	Kansas City	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	28
Louisiana	F. A LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm. J. Maybury, Saco	Augusta	July	7
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	May	14
Montana*	Wm. C. Riddell, Helena	Helena	April	7
Nebraska	E. J. C. Sward, Oakland	Lincoln	May	—
Nevada	S. L. Lee, Carson City	Carson City	May	4
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W Bennett, Long Branch	Trenton	June	16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April	13
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	21
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee		
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N C. Schaeffer, Harrisburg	Philadelphia, Pittsburg	June	—
Rhode Island	G. T. Swartz, Providence	Providence	April	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May	5
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H A. Barbee, Point Pleasant	Parkersburg	April	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

MORTMAIN. By ARTHUR TRAIN. 12mo, 314 pages, cloth, illustrated. D. Appleton & Company.

TRANSACTIONS OF THE FIFTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED HEALTH AND MARINE HOSPITAL SERVICE. 8vo, 47 pages, cloth. Government Printing Office, Washington.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. ERNEST FUCHS. Large 8vo, 908 pages, illustrated, half morocco. J. B. Lippincott Co., Philadelphia.

DISEASES OF THE BREAST, WITH SPECIAL REFERENCE TO CANCER. Large 8vo, 385 pages, illustrated, half morocco, $4 net. P. Blakiston's Son & Co., Philadelphia.

PRACTICE OF MEDICINE FOR NURSES. By GEORGE HOWARD HOXIE, A.M., M.D. 8vo, 284 pages, illustrated, muslin $1.50 net. W. B. Saunders Company, Philadelphia.

HEALTHY BOYHOOD. By ARTHUR TREWBY, M.A. 16mo, 63 pages, muslin, 40c. net. Longmans, Green & Co., New York.

MEDIZINAL-BERICHTE ÜBER DIE DEUTSCHEN SCHUTZGEBIETE, 1905-06. 8vo, 440 pages, cloth 50 Fr. Ernst Siegfried Mittler und Sohn, Berlin.

TRAITÉ PRATIQUE DE THÉRAPEUTIQUE INFANTILE. Par les Drs. PAUL LE GENDRE and AUG. BROCA. Large 8vo, 759 pages, illustrated, muslin, 15 francs. G. Steinheil, editeur, Paris.

HEMATOLOGICAL ATLAS. By Priv. Doz. Dr. KARL SCHLEIP. 4to, 257 pages, illustrated, half leather, $10. Rebman Company, New York.

THE PRODUCTION AND HANDLING OF MILK. By KENELM WINSLOW, M.D., M.D.V., B.A.S. (Harvard). Large 8vo, 207 pages, illustrated, muslin. William R. Jenkins Co., New York.

DETECTION OF THE COMMON FOOD ADULTERANTS. By EDWIN M. BRUCE. 12mo, 84 pages, muslin. D. Van Nostrand Company, New York.

TRANSACTIONS OF THE LUZERNE COUNTY, PA., MEDICAL SOCIETY, for the Year Ending December 31, 1907. Vol. XV. The E. B. Yardy Co., Wilkes-Barre, Pa.

REPORT OF THE COMMISSIONER OF EDUCATION, for the Year Ending June 30, 1906. Vol. 2. Government Printing Office, Washington, 1908.

CONFESSIO MEDICI. By author of "The Young People." 12mo, 158 pages, muslin, $1.50 net. The Macmillan Company, New York.

HYPNOTIC THERAPEUTICS IN THEORY AND PRACTICE. By JOHN DUNCAN QUACKENBOS, A.M., M.D. 8vo, muslin, 332 pages, $2 net. Harper & Brothers, New York.

VERHANDLUNGEN DER DEUTSCHEN LARYNGOLOGISCHEN GESELLSCHAFT AUF DER II. VERSAMLUNG. Von Dr. Med. GEORG AVELLIS. Large 8vo, 176 pages, paper, 5 marks. A. Stuber's Verlag (Curt Kabitsch), Würtsburg.

LES LUXATIONS DES GRANDES ARTICULATIONS, LEUR TRAITEMENT PRATIQUE. Par les Drs. J. HENNEQUIN et ROBERT LOEWY. Large 8vo, 407 pages, illustrated, paper, 16 francs. Felix Alcan, Editeur, Paris.

THE BLIND-DEAF. By WILLIAM WADE. 4to, 149 pages, paper, illustrated. Hecker Bros., Indianapolis.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. Edited by JOHN NACHBAR, M.A., M.D. Large 8vo, illustrated, paper, 7 shillings 6 pence. Longmans, Green & Co., New York.

REPORT—BIRTHS, MARRIAGES AND DEATHS, ONTARIO, 1905. Large 8vo, muslin. L. K. Cameron, Toronto.

TWENTY-FIRST ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF OHIO. Large 8vo, 552 pages, paper. F. J. Heer, State Printer, Columbus.

DISEASES OF THE NOSE AND THROAT. By HERBERT TILLEY, B.S. (Lond.), F.R.C.S. (Eng.). 8vo, 539 pages, illustrated, muslin, 14s. net. H. K. Lewis, London.

VITALITY, FASTING AND NUTRITION. By HEREWARD CARRINGTON. Large 8vo, 648 pages, illustrated, muslin. Rebman Company, New York.

DIE FEHLERGROSSE BEI DEN HISTOLOGISCHEN METHODEN. By Dr. Med. W. BERG. Large 8vo, 48 pages, paper, 1 mark 20 phg. Verlag von August Hirschwald, Berlin.

ILLUSTRATED CATALOG OF ELECTRO-THERAPEUTICAL APPARATUS. 8vo, 159 pages, paper, illustrated. McIntosh Battery & Optical Company, Chicago.

A MANUAL OF PRESCRIBING. By C. R. MARSHALL, M.D. 16mo, 373 pages, muslin, $2 net. J. & A. Churchill, London.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 21, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	507	168
Diphtheria	397	53
Measles	1607	33
Scarlet Fever	961	37
Smallpox	—	—
Varicella	218	—
Typhoid Fever	27	4
Whooping Cough	21	3
Cerebrospinal Meningitis	10	9
Malarial Fever	—	—
Totals	3748	307

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending March 20, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
Alabama, Mobile	Feb.	1–8	6	..
"	Feb.	22–29	5	..
California, Los Angeles	Feb.	22–29	7	..
San Francisco	Feb.	22–29	8	..
Illinois, Chicago	Feb.	29–Mar. 7	3	..
Springfield	Feb.	27–Mar. 5	7	..
Indiana, Elkhart	Feb.	29–Mar. 7	3	..
Marion	Feb.	1–29	14	..
Iowa, Cedar Rapids	Feb.	1–29	5	..
Kansas, Kansas City	Feb.	29–Mar. 7	2	..
Wichita	Feb.	1–Mar. 7	57	..
Kentucky, Covington	Feb.	29–Mar. 7	1	..
Lexington	Feb.	22–29	1	..
Louisiana, New Orleans	Feb.	29–Mar. 7	11	6 imported
Michigan, Detroit	Feb.	29–Mar. 7	2	..
Minnesota, Winona	Feb.	22–29	1	..
Missouri, Kansas City	Feb.	29–Mar. 7	10	..
Montana, Butte	Feb.	25–Mar. 3	3	..
New York, Buffalo	Feb.	22–29	1	..
New York	Feb.	29–Mar. 7	1	..
North Carolina, Charlotte	Feb.	29–Mar. 7	1	..
Ohio, Cincinnati	Feb.	28–Mar. 6	17	..
Toledo	Feb.	29–Mar. 7	2	..
Oregon, Portland	Feb.	1–15	3	..
Tennessee, Knoxville	Feb.	29–Mar. 7	1	..
Nashville	Feb.	29–Mar. 7	4	..
Texas, San Antonio	Feb.	22–Mar. 7	17	..
Virginia, Norfolk	Feb.	22–Mar. 13	2	..
Richmond	Feb.	29–Mar. 7	1	..
Washington, Spokane	Feb.	22–29	23	..
Wisconsin, Milwaukee	Feb.	29–Mar. 7	2	..

SMALLPOX—INSULAR.

Hawaii, Honolulu	Feb.	28	1	on S. S. China from Hongkong

SMALLPOX—FOREIGN.

Arabia, Aden	Jan.	28–Feb. 11	..	33 in Quarantine.
Argentina, Rosario	Dec.	1–31	..	1
Brazil, Para	Feb.	15	1	1
Rio de Janeiro	Jan.	25–Feb. 1	29	13
Canada, Halifax	Feb.	22–Mar. 7	2	..
Hamilton	Feb.	1–29	5	..
Toronto	Dec.	28–Feb. 29	21	..
Winnipeg	Feb.	15–22	1	..
China, Amoy (Kulnagsu)	Dec.	7–Jan. 4	..	Present
Foochoo	Jan.	11–18	..	Present
Hankow	Jan.	18–25	1	..
Shanghai	Jan.	18–Feb. 9	8	cases foreign, and 25 deaths native
Hongkong	Jan.	25–Feb. 9	25	17
Ecuador, Guayaquil	Feb.	1–8	..	4
Egypt, Cairo	Jan.	28–Feb. 11	7	4
France, Brest	Feb.	13–28	2	1
Paris	Feb.	8–22	39	..
Gibraltar	Feb.	16–23	1	imported
Great Britain, Edinburgh	Feb.	8–22	2	..
Leith	Feb.	8–22	4	1
India, Bombay	Feb.	4–11	..	25
Madras	Feb.	1–7	..	1
Italy, General	Feb.	13–20	37	..
Naples	Feb.	8–22	8	..
Japan, Kobe	Feb.	1–15	657	367
Nagasaki	Jan.	26–Feb. 16	5	2
Osaka	Feb.	1–8	126	37
Java, Batavia	Jan.	18–25	4	..
Malta	Jan.	25–Feb. 15	20	4
Manchuria, Dalny	Jan.	25–Feb. 8	7	1
Mexico, Aguas Calientes	Feb.	16–Mar. 1	..	6
Mexico	Jan.	8–Feb. 8	..	5
Monterey	Feb.	16–23	..	2
Portugal, Lisbon	Feb.	8–25	3	..
Russia, Libau	Feb.	8–15	6	..
Moscow	Feb.	1–15	109	29
Odessa	Feb.	1–15	9	..
Riga	Feb.	8–22	3	..
St. Petersburg	Jan.	11–Feb. 15	76	18
Spain, Almeira	Jan.	1–31	..	20
Barcelona	Feb.	11–20	..	2
Denia	Feb.	14	6	..
Malaga	Dec.	1–31	..	5
Valencia	Feb.	8–23	43	5
Turkey, Bagdad	Jan.	18–Feb. 1	89	22

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THE DEEP INTRAOCULAR LESIONS OF INFANTILE INHERITED SYPHILIS AND TARDY INHERITED SYPHILIS, FROM THE STANDPOINT OF GENERAL PATHOLOGY, PROGNOSIS, AND TREATMENT.*

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My object in presenting this paper is to make an urgent appeal for the early and more careful examination of the eyes of infants and young children, where syphilis is suspected or known to exist in the parents or family. The examination should begin with the newborn infant, and, where possible, should be repeated at intervals until the infant has reached adult life. The object of beginning the investigation with the newborn infant is to determine, if possible, what proportion of these cases of intraocular disease are fetal in origin, as distinguished from those developed in infancy and childhood, and especially from the cases of tardy development of the disease in youth or middle age. My own experience has convinced me that the cases of intrauterine disease of the deeper tissues of the eye are far more common than is usually supposed. As a natural corollary to this proposition, it follows that the earlier the existence of such disease is recognized, its cause known, and proper treatment instituted, the better the prognosis as to the ultimate vision.

The statement that cases of congenital syphilis of the eyes are usually comparatively mild, must in the light of my own experience be rejected; for, while it is true that many of the cases die *in utero* or shortly after birth, many of the so-called "bad cases" live through infancy and early childhood, but with extremely marked intraocular stigmata; for intrauterine infection runs its destructive course much more rapidly than where the infection develops after birth.

Lesions of the deep structures of the eye are by no means infrequently actually *congenital*, as iritis, cyclitis, chorioiditis, cataract, exudation in the vitreous, and, more rarely, retinitis, optic neuritis, and atrophy of the optic nerve have been observed in infants within a few hours after birth. Here the destructive inflammation must have begun *in utero*.

From my own observation I am inclined to believe that disease of the uveal tract, especially iritis and chorioiditis, is more frequently met with in young infants than keratitis, as an evidence of inherited syphilis. While the iritis may occur alone, it is more likely to be associated with cyclitis or chorioiditis, and its recognition is sometimes difficult owing to the presence of keratitis with corneal opacity, or to the symptoms being but slightly marked, or because of the absence of other well-marked stigmata. More frequently we meet with a chorioiditis disseminata associated with the iritis, and so close is this association that an ophthalmoscopic examination should always be made, where the field of the pupil is not blocked by exudation. This condition has been seen by me a number of times in infants at birth, where a careful examination has been made of the baby's eyes, and is literally congenital, due to intrauterine inflammation of one or both eyes. These infants are always very badly nourished, and are not infrequently stillborn.

The *iritis* is of the plastic type, and I have myself never met with gummata of the iris in an infant. Iritis due to inherited syphilis in infants and very young children was first described by Lawrence in 1830, and the usual period for its development has been placed during the fifth month of life, but cases do occur at a much earlier period. Some of the symptoms, like the ciliary injection and the exudation, are often but slightly marked, or partially concealed by an interstitial keratitis. It may be unilateral or bilateral, and is particularly liable to relapses. The prognosis varies with the occurrence of other ocular stigmata, and is more favorable if there be no keratitis or chorioiditis. It also depends greatly on the stage or period at which these infants come under proper treatment. As influencing the prognosis, it may be stated that iritis in infants and young children, due to inherited syphilis, rarely occurs alone, but almost always with chorioiditis. The prognosis is also influenced by the fact of both parents being syphilitic, for it is generally admitted that the degree of severity with which an infant suffers from inherited syphilis is usually in proportion to the length of the period which has elapsed since the parents contracted the disease.

Among the deeper structures of the eye, the chorioid is most likely to be affected in infants and young children, and, owing to the fact that at this age interstitial keratitis is very rare, the chorioiditis may be the more readily recognized, *but it must be looked for*. It may be traced through several distinct stages, beginning with small round or oval patches in the stage of efflorescence, followed by general retinal edema and vitreous opacities, later by accumulations of pigment, and ending in clearly outlined patches of atrophy surrounded by pigmented margins and free from retinal edema. These changes chiefly involve the chorioid, though the retina also suffers; but the ultimate visual acuity is so good, even after a most extensive chorioiditis, that the retina could have been only slightly affected.

This condition of the chorioid, like the iritis, is not very uncommon at birth, and cases have been reported in which the condition was recognized either at birth or so shortly afterwards as to prove that the disease preceded the birth and began *in utero*. In young children who are old enough to have their vision tested, the disproportion existing between the

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actual condition of the chorioid and the real visual acuity is a very striking feature. The chorioid may be riddled with the disease from periphery to center, while the central vision may be but little affected. Sometimes the vision suddenly fails without the ophthalmoscope showing any fresh evidences of disease, but this loss of vision is temporary and is rapidly followed by a restoration almost to the normal standard. The probability is that in these cases occurring in infants, the retina does not suffer except in the hexagonal pigment cell layer, which separates it from the underlying chorioid.

Turning from the uveal tract we consider next the *retina* and *optic nerve*. There being no external visible signs of retinitis or optic neuritis, syphilitic lesions of these tissues can only be recognized when special search is made for them. In newly born infants I have never seen a case of retinitis or optic neuritis in the stage of efflorescence; but in three infants, whom I examined within an hour after birth, besides the existing iritis, I found a neuroretinitis in the atrophic stage, with contracted arteries and a pale optic disc.

The *retinitis* due to inherited syphilis in infants and young children often leads to permanent changes in the retina, which vary from mere faint lines along the smaller peripheral arterial branches to complete obliteration of the vessels, so that both ophthalmoscopically and microscopically they appear as white cords.

Optic neuritis is found occasionally in infants and young children, either alone or at times associated with chorioiditis. The optic disc is seen to be red, with blurred outlines, but there is little or no edematous swelling, such as we see in papillitis. Such cases as I have been able to follow for a length of time ended in partial or complete atrophy of the optic nerve.

From my own experience, therefore, I conclude that it is not a very uncommon thing for syphilitic infants to be born with already well-marked symptoms of disease of the uveal tract. This is an additional proof, if any were needed, that the fetus *in utero* may suffer from inherited syphilis, and yet be born at full term and live. Most of these infants are said to be free from symptoms of syphilis at the actual birth, but these symptoms soon appear, often within the first week of life; and as regards the internal lesions of the eye, I believe their apparent rarity is because they have not been looked for and because the external symptoms are sometimes so slightly marked. For instance, I have seen cases of iritis with little or no ciliary injection, and with only slight swelling and discoloration of the iris tissue; yet, on close investigation, adhesions were found to exist and some cloudiness of the aqueous humor. In these very young infants I have noticed that the skin about the eyelids, forehead, and nose was thicker and more opaque than elsewhere on the body.

I have seen many cases of iritis and chorioiditis in infants and young children, and quite a number of cases of iritis at birth, actually congenital, and of intrauterine origin. I will mention briefly a few of these cases.

Infantile Inherited Syphilis.

Case I.—I was called many years ago to see a male infant only a few hours old, because it was feared the child had a purulent conjunctivitis. I found a slight mucous secretion, but no pus. There was both conjunctival and ciliary injection. The cornea was clear in both eyes. The iris was discolored, swollen and adherent to the lens capsule in both eyes, and in one eye there was an exudation in the field of the pupil. The child had mucous patches around the genitals and anus. I succeeded in partially dilating the pupils with a weak solution of atropine, and found the fundus normal. The baby was born at full term and was fairly well developed, but the face showed the marks of senility. He was immediately put on systematic treatment, as was the mother, but the iritis proved very obstinate, as I was not able to break all the adhesions. This child died during the first year of life of some abdominal trouble. Both parents showed unmistakable syphilitic lesions, and the mother had had two miscarriages.

Case II.—I was called to see a female child two days old, because it was thought she was blind. I found the conjunctiva and cornea perfectly healthy and there was no ciliary injection. Both eyes showed iritis with adhesions of the iris to the lens. After using atropine as frequently as I dared, I succeeded in breaking all the adhesions and dilating the pupils *ad maximum*. The opthalmoscope then showed a chorioiditis in both eyes, involving the periphery only, with floating opacities in the vitreous. This child also showed mucous patches around the genitals and a marasmic appearance, but lived to be nearly two years old, and had evidently fairly useful vision.

Case III.—I saw an infant ten hours old, last year, with well marked iritis in both eyes. The child was so weak that it was deemed unwise to attempt any local treatment. Both pupils were blocked by exudation, yet the ciliary injection was but slightly marked. The child lived only a few days.

Case IV.—Last autumn I was asked to see in consultation a female child, about six years old. I found the patient well developed for her age, but very excitable. I could not discover that anything unusual had been noted in the patient at birth. At times during the first year there had appeared a transient convergent strabismus of one or the other eye. It was noticed that the child always held everything very close to the eyes when looking at it. As she grew older, the strabismus became fixed in the left eye. At no time had there been any visible sign of inflammation in the eyes. When I examined the child I found the lids, conjunctiva, cornea, and iris and pupils normal. There was a convergent squint in the left eye, but no limitation of mobility in any direction. The media were clear. In both eyes the ophthalmoscope showed a very extensive chorioiditis pigmentosa in an advanced atrophic stage, and the optic discs were white. Vision was only 10/200. The child carried her head bent toward the left shoulder, but with the face rotated towards the right. The prognosis was, of course, most unfavorable, and no improvement could be expected from any treatment. The family history was markedly syphilitic.

Case V.—Another case of inherited syphilis in a very young female child I saw in consultation last November. The child was three years old, well developed mentally and physically, born at full term, but with mucous patches around the genitals and anus. Two days after birth she developed a purulent conjunctivitis of a mild type, from which she recovered in three weeks, without any corneal complication. About a week before I saw her both eyes became inflamed and there was marked photophobia. I found a double iritis with adhesions, the ciliary vessels injected, and evidently defective vision. After using a mydriatic, the adhesions of

the iris were broken, and the ophthalmoscope showed a recent chorioiditis in both eyes in the equatorial region. An older sister, aged twelve, showed the Hutchinson teeth and the remains of an interstitial keratitis. Both parents were syphilitic, and the mother was under treatment for a cutaneous lesion. Prompt treatment apparently checked the disease in the child.

When we come to consider the second division of our subject, the *Intraocular Lesions* of *Late* or *Tardy Inherited Syphilis,* the subject becomes more complex and the diagnosis more difficult. Fournier has made some interesting contributions to the study of such cases from time to time, and his last work, "L'Hérédo-Syphilis Tardive," just published, is said to be a monument of close and accurate observation.

It is probable that of all inherited morbid tendencies, the inherited syphilitic taint is met with the most frequently in all classes of life, and its stigmata are most variable in number and kind. A patient may show many stigmata in different parts of the body, or he may present but a single well-marked stigma, after the most rigid examination, as for instance the crescentically notched incisor teeth of Hutchinson. Again it may happen, after the most exhaustive and careful examination, that not a single stigma is found, which can be regarded as positively due to inherited syphilis, though the patient may be nearly blind from an optic neuritis or atrophy, which cannot be traced to any other morbid condition. This type of inherited syphilis is by no means rare. Experience would seem to prove that the most frequent stigmata of tardy inherited syphilis are those of the eye, and next in frequency are those of the teeth; and in a family of syphilities in which there are several children, there is often a very marked difference in the extent and number of the stigmata.

The etiology in these cases of *tardy* inherited syphilis is so obscure that the diagnosis becomes very difficult, and one of the difficulties against which we must contend is the predisposition to refer all these obscure cases to inherited syphilis as a cause. Hence arises the necessity for the most careful and searching investigation, not only of the patient, but of other members of the immediate family and the collateral relatives. Some assistance is occasionally gained from the patient's memory in regard to eye troubles in early childhood. The patient may remember having suffered from some disease of the eye in childhood, which lasted for weeks or months, and was accompanied by partial blindness. This would point to some grave lesion like interstitial keratitis or iridochorioiditis. A very careful examination of the eyes will then show the remains of stigmata, such as permanent deformity in the shape of the pupil, with the faint remains of posterior synechiæ, or a slight membranous deposit in the field of the pupil. If the cornea, iris, and pupil appear normal, the ophthalmoscope may reveal stigmata of the first importance as signs of inherited syphilis, which may be propagated to the third generation. These stigmata in the fundus oculi may appear either as gross lesions in the chorioid, retina, or optic nerve, which are immediately regarded as pathognomonic of inherited syphilis, or merely as slight rudimentary signs of former lesions.

The gross lesions of the fundus appear as atrophic patches of chorioretinitis, or as mere pigmentary deposits. The atrophic patches are irregularly round or oval, of varying size, and generally of a dense white color. The pigmentary deposits appear as dense black patches of varying size and shape all over the fundus, sometimes with a white center, which strongly resemble the spots of *leukomelanoderma* in the skin of syphilitic patients. If the chorioretinitis has occurred in the vicinity of the optic nerve, the stigma will appear as an irregular black border around the optic nerve entrance.

The rudimentary lesions are more frequently to be found in these suspected patients than the gross lesions. One of the most frequent is a lead-colored or slate-colored tint to the retina, spread more or less over the whole fundus, and most marked around the posterior pole. In some cases the pathological tint appears as small, lead-colored spots all over the fundus, giving a stippled appearance to the background, and most marked in the equatorial and ciliary regions, and hence more difficult of recognition.

A still more marked and characteristic rudimentary stigma is the arrangement of the pigmentary deposits in the form of the so-called "osteoplasts," with numerous processes or prolongations, usually found in the equatorial region, and to which we give the name of retinitis pigmentosa.

All these rudimentary stigmata are bilateral and to about the same extent in both eyes, and in my experience are the most common and significant evidences of inherited syphilis; or, to speak more accurately, while they are not by themselves positive proof of the existence of inherited syphilis, they must be regarded as strong presumptive evidence of the inherited taint.

In addition to the gross lesions and rudimentary stigmata shown by the ophthalmoscope in these cases, the retinal vessels, both arteries and veins, are reduced in caliber by thickening of the middle and inner coats, and this condition of the vascular walls is most marked in the retinitis pigmentosa. Associated with this condition is a partial atrophy of the optic disc, which may be mapped out as a defect in the visual field, sometimes central, sometimes paracentral in position; and here an additional stigma is found in a more or less marked mydriasis, which may vary in degree in the two eyes. Any one or all of these various stigmata may be found in the same patient, but they must be carefully looked for, as they are often so slight as to escape any but the closest scrutiny.

In most of these cases of *tardy inherited syphilis* there are certain functional ocular troubles, which are closely connected with the ophthalmoscopic stigmata just described. There is a congenital defective vision or *amblyopia,* due to a partial atrophy of the optic nerve, or to an optic neuritis occurring *in utero* or in early infancy, without showing any ophthalmoscopic evidence of its existence, until later in life.

Another functional symptom is *hemeralopia* or defective vision by night or in dimly lighted places, commonly known as *night-blindness.* This is a marked symptom in *retinitis pigmentosa* and is the direct result of the degenerative vascular and pigmentary changes in the retina. It is often a marked symptom in the amblyopia without ophthalmoscopic evidence, and is not infrequently seen in connection with the congenital cataracts of young children, where the opacity of the lens prevents examination of the fundus oculi. In several markedly syphilitic families which I have had an opportunity to examine, this has been a marked symptom in one or more of the children, even without the presence of *retinitis pigmentosa.*

Another functional stigma is *nystagmus,* both lateral and rotary, and in all such cases there is a marked bilateral amblyopia, due to pigmentary and

vascular degeneration in the retina, or to well-marked chorioretinitis.

Still another functional condition met with in tardy inherited syphilis is an *apparent myopia,* due to changes in the refractive power of the media, cornea, lens, or vitreous humor. These are cases of apparent change in the refraction of the eye, and not to any increase in length of the antero-posterior axis of the eye.

In addition to the gross lesions seen in the retina, the chorioid and the optic nerve, and to the more or less rudimentary stigmata seen in the iris, lens, and vitreous humor, I have observed certain malformations or evidences of defective development in the eyeball, which I am satisfied can be directly traced to inherited syphilis, and due to a fetal or intrauterine pathological process, such as microphthalmos and that form of congenital cataract known as zonular cataract. The latter is not infrequently seen in connection with retinitis pigmentosa and chorioretinitis, the presence of the latter being immediately recognized when the pupil is dilated by a mydriatic.

These patients with the stigmata of late inherited syphilis do not often present what is considered the classical type of the disease, as do almost invariably the infants and young children. They are not often undersized or of slender build, and rarely present a shriveled or stunted appearance. They do not show a badly-shaped head whether of the microcephalic or hydrocephalic type, though they often have a protuberant forehead, and some asymmetry in the development of the bones of the face, though not to the extent of any infantile physiognomy.

In most of the cases the diagnosis cannot be made with certainty until after the most searching scrutiny of the patient, and painstaking and extensive examination of the family. In the examination of the patient the ocular, dental, and aural stigmata are of the greatest value. Of these three groups, the dental stigmata are the most important, but the so-called Hutchinson teeth are not always well-marked. We do not always find the three distinct features of a crescentic notch in the cutting edge of the incisor teeth, the oblique convergent direction of these teeth, and the screw-driver shape. But besides these three distinctive features, there is often an erosion of the cusps of the first molar, and a vicious implantation of the teeth, associated with precocious caries and the absence of certain teeth; all of which assist the diagnosis. These dental stigmata are much more frequently present in the patients with late inherited syphilis than are the deep intraocular lesions, and yet sometimes they are so faintly marked as scarcely to excite a suspicion.

The diagnosis becomes relatively easy where the inherited taint has stamped itself on the general physiognomy of the patient. These may be a general stunted appearance, signs of senile decrepitude or a general infantile appearance from arrest of development. But there is nothing constant or regular in the occurrence of these stigmata. The facial stigmata are more often absent, or are so slightly marked as to escape all but the most careful observation. This is especially true of the flattening or lack of development of the bridge of the nose.

Certain aural stigmata are of value as diagnostic aids. If the patient has presented a history of severe acute deafness, coming on suddenly without any warning, and an examination reveals the absence of lesions which might account for it, there is great probability of the cause being inherited syphilis, which is increased if marked resistance to specific treatment is shown. Our recognition of the cause will be helped by remembering that while the inherited taint may affect the entire organism, it may also show itself in but a single organ, like the eye, the ear, or the teeth.

When, after the most rigid examination of the patient, no positive evidence is gained of inherited syphilis, we must turn to the family, both the immediate and collateral relatives, for assistance, and here the investigation must be made as rigid and extensive as possible. I believe that inherited syphilis may be transmitted through two or more generations, and this necessarily complicates the search.

The examination of the other children of the same family may reveal other stigmata present in the surviving children, and here the diagnostic indications are of value, because they often reveal the order in which the specific lesions have occurred.

Repeated miscarriages on the part of the mother and early infant mortality point almost unmistakably to inherited syphilis. Confinement before term of still-born infants, as well as confinement at full-term of still-born infants, are both strongly suggestive of syphilitic taint, and the same can be said of the death of infants during the first weeks of life, especially if the death occurs suddenly and without any apparent cause.

The Value of Symptoms.—In studying carefully any series of cases of disease we should try to understand the real significance of the symptoms presented as aids to a diagnosis. Hence we should try to estimate the real value of the stigmata in our diagnosis of inherited syphilis. There can be no just doubt in our minds that the presence of inherited syphilis is proved by the existence of several of the before-mentioned stigmata. I will go further and state that I believe the presence of only one stigma, even but faintly developed, points to the correct diagnosis of inherited syphilis, provided the examination of other members of the family reveals the presence of other stigmata.

It is even possible that a subject of inherited syphilis may not show a single stigma of the disease, though it may be proved to exist in the family for two or more generations, for it is generally admitted that in a syphilitic family there is often observed the greatest disparity in the development of the symptoms in different members of the family.

Therapeutics.—The question of therapeutics is a broad one and beset with difficulties, which vary with the age of the patient, and especially when we come to consider the question of submitting the parents to continued observation and treatment. In the case of the patient, the indication for specific treatment seems to exist in all cases where there are lesions of possibly syphilitic origin, especially if one or more undoubted stigmata are present. In infants and very young children a proper dietary is very necessary, especially of the supporting kind, for these children need soups or meat extracts at an earlier age than other young children. A mild mercurial ointment acts very well in the cases of infantile iritis, in promoting absorption and assisting to break up the adhesions to the lens capsule. The prognosis as to resulting vision will depend largely on the possible existence of chorioretinitis, vitreous opacities, and lesions of the retina and optic nerve. But these cases of syphilitic lesions of the deep structures of the eye promise much more to persistent and careful specific treatment than is usually supposed.

If there are other children in the family who show some of the marks of inherited syphilis, it would be eminently wise to subject the parents to prolonged specific treatment, in order, if possible, to eradicate

the taint and prevent the birth of any more tainted children. This would seem to be particularly indicated if the mother be again pregnant.

To illustrate what has been said upon the difficulties of diagnosis in these cases of tardy inherited syphilis owing to the absence of slight development of stigmata, I will give briefly the histories of a few cases.

Tardy Inherited Syphilis.

Case I.—A young girl, aged 14, was brought to me because her vision had failed, and it was thought that she was growing myopic. Without glasses the vision in the *right* eye was 10/200 and in the left eye it was 15/200. There was a myopia of D4 and an astigmatism of D1, axis 180°. With the correcting glasses vision in the right eye was 15/200 and in the left eye 15/50. The ophthalmoscope showed a very extensive chorioretinitis in both eyes, extending from the periphery all over the fundus in the *right* eye, but stopping short of the macular region in the *left* eye. In the ciliary and equatorial regions the process was in the atrophic stage, but nearer to the posterior pole there were fresh patches of exudation in the stage of efflorescence, and in the right eye a very large patch at the macula. In the left eye the patches of exudation were all comparatively recent, and the macular region was free. The patient was the picture of health, without any apparent marks of constitutional disease, but on a more careful examination several stigmata were found. There was a rudimentary crescentic notch in the two central incisor teeth in the upper jaw. There was a faint nebula in the right cornea, just below the center, only visible by strong lateral illumination. There were two small patches of pigment on the anterior capsule of the lens in the right eye, the remains of a former iritis. Rigid questioning revealed that the child had inflamed eyes when an infant of a few weeks old, the inflammation lasting for nearly a year. When the child was seven years old the right eye became again inflamed and the eye was practically blind for more than six months. This patient responded rapidly to constitutional treatment, so that in three months the vision of the *left* eye was 15/15 and in six months the vision of the right eye was 15/15, and the vision has remained normal for twelve years. A careful examination of other members of the family showed that two older sisters and an older brother presented unmistakable stigmata. One of the sisters showed an extensive chorioretinitis confined to the equatorial region in both eyes. Another sister showed slightly marked Hutchinson's teeth in both jaws and a small macula on each cornea. The brother showed three well-marked Hutchinson's teeth, and the remains of a former chorioretinitis with impaired vision. When closely questioned the father was ascertained to have contracted syphilis about a year before marriage and was supposed to have been cured, but he has at various times showed symptoms of the constitutional disease.

Case II.—A young lady, aged 27, consulted me in 1896 for failing vision in both eyes, stationary black spots in front of both eyes and photophobia. I had examined this patient ten years before and found a hypermetropia of D1, with an astigmatism of D 0.25, axis 90°, and normal vision, with a perfectly normal fundus. At that time I noted the presence of a square prominent forehead with protruding frontal bosses, and wedge-shaped incisor teeth, irregular in size and implantation, but without the crescentic notch. At the second examination in 1896, the vision was 15/30, in each eye, and she complained of a fog or mist before her eyes. The ophthalmoscope showed a most extensive chorioretinitis, extending all over the fundus of both eyes, some of the patches of exudation being recent and others in the atrophic stage, with marked pigmentation. The recent patches were near the macula in each eye, and there was an irregular central scotoma in the field of the *right eye*, its long diameter vertical, extending 20° above and below the fixation point and 10° to the temporal side. After careful questioning I found that at the age of two years the patient had had a general eruption all over the body, which lasted for nearly a year, and that recently she had had an eruption on the chest, abdomen, and thighs, which still remained in spots and was unmistakably a psoriasis. On questioning the mother, I learned that she had had two miscarriages before the birth of the patient, and had been delivered of a deformed stillborn child since the birth of the patient. The latter had been a frail child from birth with more or less constant ill health. By persistent treatment carried on for three months by inunction and potassium iodide, and the free use of iron and strychnia, the chorioidal process was arrested, the scotoma disappeared, vision was restored to the normal standard, and the patient's general health was very much improved. The cutaneous trouble was more obstinate and did not subside until nearly five months afterwards. The vision has remained normal ever since, but the fundus still shows the atrophic stage of chorioiditis desseminata.

Case III.—A lady, aged 28, came to me in 1902 with the complaint of failing vision in both eyes. The *right* eye had a myopia of D3 and vision under correction of 15/50. The *left* eye had a myopia of D1.50 and vision under correction of 15/30. She stated that she had no ocular trouble in infancy or childhood, and that she had always been able to use her eyes as she wished until three months before I saw her. A careful examination showed in both eyes a faint corneal macula on the temporal side. The rest of the media were clear in both eyes. There were two points of posterior synechiæ in the left eye and one in the right, but no ciliary injection and no swelling and discoloration of the iris. The ophthalmoscope showed a well-marked extensive chorioiditis in the active stage, most marked at the periphery, but extending well towards the macula. The adhesions of the iris were readily broken by atropia. This patient had no dental stigmata, the teeth being in exceptionally good condition. Her forehead was protuberant and square-shaped, and the vault of the hard palate was narrow and deeply arched. A brother and a younger sister had had inflamed eyes in infancy and again at puberty, and on examination both showed the Hutchinson teeth and the traces of an old interstitial keratitis. The mother had had several miscarriages before the birth of this patient, but none afterwards. The father was dead. Under persistent treatment the disease in the chorioid was arrested, and the vision was brought up to the normal in the *left* eye and nearly to the normal in the right eye, after *four* months' treatment.

Case IV. The last case was a young man, aged 21, who is still under treatment. This child was born healthy and had no ocular trouble until the age of twelve, at which time both eyes were inflamed, and he was out of school for a year. Since then there had been no disease of any kind until September last, when the left eye became severely inflamed, with pain and photophobia, and he was brought to me one week later. The *right* eye showed some faint nebulæ on the cornea, with normal iris and

fundus, a myopia of D3 and V = 15/50. The *left* eye showed an acute interstitial keratitis of the vascular type, occupying the center of the cornea, an iritis with adhesions below and no reflex from the fundus. The dental stigmata were wanting except for a wedge shape to the central upper incisors. The boy had evidently had a double interstitial keratitis at the age of twelve, from which he entirely recovered. After dilating the pupil in the left eye and breaking the adhesions, the ophthalmoscope showed an infiltrated vitreous and at the periphery some well marked patches of chorioiditis. The patient has a square forehead with protuberant frontal bosses. A younger sister of the patient had had an inflammation in both eyes at the age of fourteen, from which she entirely recovered and the cornea was now clear and the fundus was normal. She has the crescentic notch in the upper incisor teeth. The mother had had one miscarriage at the sixth month and had had one stillborn child, born at full term. I was not able to examine the father. The patient has responded well to rather severe medication and the vision of the left eye has improved to 15/100. The chorioiditis is slowly subsiding, and the corneal opacity is reduced to a small central patch.

In conclusion, it may not be amiss to state very briefly the substance of the therapeutical deductions which Fournier has drawn from his immense experience. He lays down four propositions, as follows:

1. Specific treatment is indicated in all cases in which the patients are actually affected by lesions or symptoms which might be due to syphilis, and who show at least one of the stigmata mentioned.

2. If a patient shows one or more of the stigmata mentioned, he should be subjected to specific treatment, as a prophylactic measure, even if there be no actual lesion present.

3. In a recognized syphilitic family, if a child has recently been born who presents one or more of the stigmata, the parents should be submitted to prolonged specific treatment, in order to prevent, if possible, the transmission of the inherited taint to any future births.

4. In case a woman becomes pregnant in a family in which the children previously born show some of the stigmata above mentioned, she is to be subjected to rigid specific treatment during her entire pregnancy.

In view of the many serious, even disastrous, lesions which have come under my observation, I feel inclined to add a fifth proposition to the four of Fournier, viz., that it should be made a penal offense for any syphilitic to marry.

THE TREATMENT OF INTRAPERITONEAL HEMORRHAGE FROM RUPTURE OR ABORTION OF TUBAL PREGNANCY.*

By HIRAM N. VINEBERG, M.D.,

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Until lately there was an almost general concensus of opinion among gynecologists, at least in this country, that rupture or abortion of tubal pregnancy called for early or immediate operation. Of late, however, a note has been sounded in an opposite key, and we seem to have reached a time when the whole question has to be threshed out. In my opinion great benefit will accrue from such a discussion. The view seemed to be too prevalent that a patient, the subject of tubal pregnancy that had undergone rupture or abortion, would die from intraperitoneal hemorrhage if not operated upon post haste. I fear many lives have been lost, especially in the outlying districts of the smaller medical centers, from the practice which that view entailed. Hence it is that the two most important papers recently on deferred operation for the conditions under discussion came from operators who were so situated geographically as to be able to observe the harm wrought by the inculcation of that teaching. But when these gentlemen assert that patients practically never die from intraperitoneal hemorrhage from the rupture or abortion of a tubal pregnancy and that there is little or no risk in deferring the operation until the patient has had time to rally, I for one must take issue with them.

To enter into an intelligent discussion of the subject, we must digress for a moment and cast a glance at the pathology of tubal abortion and tubal rupture. The amount of blood poured into the peritoneal cavity from either condition is so variable that to discuss the subject in a general way would lead nowhere.

In the vast majority of the cases the interruption of the pregnancy occurs through the spontaneous bursting of the investing capsule. This is brought about not so much as a result of passive distention as through the erosive properties of the trophoblasts surrounding the young ovum. The breaking through of the invading capsule is always accompanied by hemorrhage to a greater or less degree whether the rupture occurs through the inner or outer wall of the tube. In the former instance, that is, when it breaks through the inner wall of the tube, the blood is poured primarily into the tubes and flows through the ostium-abdominale into the general peritoneal cavity, constituting what is known as tubal abortion. In the latter case, where it breaks through the outer wall of the tube, the blood is poured direct into the general peritoneal cavity, constituting what is called tubal rupture. In not a few instances both processes go on simultaneously, and bleeding may occur through the fimbriated end as well as through the tubal wall. The hemorrhage in either condition generally occurs at irregular intervals, as new points of perforation are produced by the constantly active and burrowing trophoblasts. In some specimens of ruptured tubal pregnancy on close inspection, one may find a number of pinhole perforations, many of which are closed by a plug of fibrin.

Now the amount of hemorrhage that may occur in a given case is purely accidental, depending upon the size of the blood-vessel which the trophoblasts have eaten their way through, or the size of the blood-vessel torn in actual rupture.

As a general rule the hemorrhage is less in tubal abortion than in tubal rupture. Still I, as well as others, have seen very copious intraperitoneal hemorrhage from tubal abortion and the literature contains reports of several cases of even fatal hemorrhage from that condition. Again in tubal rupture the hemorrhage may be slight and less severe than that which ordinarily occurs in tubal abortion.

When the amount of blood poured out is moderate a hematocele forms, which may be situated in the Douglas's cul-de-sac, the most frequent site, or at either side of the uterus, or even in front, as in a case observed by me. The affected tube containing a blood clot usually lies in the center of the hematocele. The rupture of the tube may oc-

*Read before the Medical Society of the County of New York, February 24, 1908, as part of a symposium on "The Immediate vs. Deferred Treatment of Hemorrhage from Rupture or Abortion in Ectopic Pregnancy."

cur between the layers of the broad ligament, and we then have a broad-ligament hematocele.

As a general rule, when an hematocele forms, there is no great danger of profuse intraperitoneal hemorrhage occurring subsequently. But such a contingency may occur either through the traumatism of an examination, as in a case of my own of which I will speak later, or through the renewed hemorrhage of such proportion from the affected tube as to break through the barrier of the investing capsule of the hematocele.

Occasionally with the inner rupture of the capsule of the young ovum the effusion of blood occurs in such a way as practically to disintegrate the trophoblastic layer. The process of erosion then comes to a standstill; there remains only an organized blood clot, of varying size, from an almond to an English walnut, or larger, attached to the inner wall of the tube. This clot would in time, in all probability, become almost entirely absorbed, and in this way nature would effect a cure.

If we were able to distinguish these cases they would form the class in which an operation would not be indicated. But as it is impossible with our present knowledge to differentiate them, they must be left out of consideration in our indications for operation.

In another class of cases, fortunately not large, either of tubal abortion or rupture, the amount of blood effused is so great that the whole abdominal cavity is inundated with blood, the abdomen being enormously distended, and the diaphragm pushed up to its greatest extent, crowding the heart and lungs so as to interfere with their action, and placing the patient's life in the greatest jeopardy or killing her outright within a time varying from one to twenty-four hours. These have been termed the tragic cases, but perhaps the term "cataclysmic" would be a more appropriate one.

In operating on these cases it is like cutting through the abdominal wall of a corpse, the tissues being practically bloodless. As soon as the peritoneum is reached it is found of a very dark color and bulging outward, and when incised the blood spurts out with considerable force.

I fear cases are frequently described as belonging to this class, when in reality they are nothing more than instances of copious or even moderate intraperitoneal hemorrhage with attacks of marked syncope. For instance, in Robb's twenty cases, reported at the last meeting of the American Gynecological Society, in five the condition was reported as serious and contraindicatory to immediate surgical interference. The lowest hemoglobin record in these cases was 60 per cent. In Simpson's cases the percentage of hemoglobin was 55 and 60 per cent. respectively. In the class of cases to which I have referred it would be difficult to make a hemoglobin test, for if one even could get a drop of fluid from the finger it would be like water.

It may be asked how are the non-cataclysmic cases to be differentiated from the cataclysmic cases. In my experience this can generally be done by watching carefully the behavior of the pulse. In the former class the pulse will show an appreciable improvement in quality and frequency within a few hours; in the latter class, on the other hand, the pulse will show no perceptible improvement with the lapse of time, but will become more rapid or become entirely extinct.

I think we are all pretty well agreed as to the treatment of the cases with or without copious intraperitoneal hemorrhage. I mean those in which the intraperitoneal hemorrhage falls short of the kind I have above described. They may be operated upon as early as expedient, or the operation may be deferred a few days, the patient in the meantime being kept under close observation.

It is the cataclysmic cases or those that are considered as such that form the bone of contention at the present time, whether we should operate upon them at once or wait for one or two or three days until reaction has set in, as advocated by Robb and others, or to wait still longer (for several weeks) until the reserve force is built up, the patient being kept in a state of hibernation with morphine and the most absolute rest, as advocated by Simpson of Pittsburg.

The latter proposition, that is, to wait for several weeks (45 and 47 days respectively in two cases), can scarcely call for serious consideration. Why it should be deemed necessary at the present day to keep a patient in a semimoribund state (deathlike stillness) to build up her strength so that she may withstand one of the simplest intraperitoneal operations the gynecologist has to perform is beyond my comprehension. I would not be understood by this, however, that operation in every case of ectopic pregnancy is a simple affair, some present technical difficulties as great as any met with in abdominal surgery. But they are the neglected and undiagnosticated cases, in which there have been repeated attacks of intraperitoneal hemorrhage, and in which the pelvic organs and a great part of the intestines are matted together into one indistinguishable mass. But the cases now under discussion merely call for opening the abdomen, seizing the affected tube, ligating and cutting it away, and removing as much of the blood as is found expedient and safe.

The other proposition embraced by the deferred operation, that is, to wait for twenty-four or forty-eight hours until reaction has set in, is worthy of our best attention and soberest thought. It is not easy to pass judgment offhand upon this question. There is room for an honest difference of opinion as to whether the best results are to be obtained by an immediate or a deferred operation in that sense. It is quite natural that each operator will be guided in this by the favorable experiences he has had with the one or the other method.

With the experiences I have gained so far with immediate operation in the cataclysmic cases, it would be a difficult task to convince me that my patients would have fared better had I waited for one, two, or three days. Of the 81 cases of ectopic pregnancy operated upon by me during the past ten years there were 18 cases with copious intraperitoneal hemorrhage. Of these perhaps only six cases should be put in the class which I have named cataclysmic. I have had only one death in the entire series of 81 cases, and that was in a case with only moderate intraperitoneal hemorrhage. The patient took the anesthesia badly, developed ether pneumonia shortly afterwards, and died on the twenty-first day after the operation as a result of this complication, while the process within the abdomen ran a perfectly smooth course, and the autopsy revealed a healthy condition of the peritoneal cavity.

It may not be amiss to relate the unfavorable conditions surrounding some of the cataclysmic cases of my series. In one case, which was as bad as any in the series, I found myself face to face with a woman dying from intraperitoneal hemorrhage, with only the kit of instruments I carry for an ordinary curettage. I had diagnosticated a probable ectopic pregnancy at a consultation with the family doctor the night before. Against my

better judgment and advice I allowed myself to be persuaded to come the next morning prepared for a curettage, and for an examination under narcosis, as the woman was very short and stout. Under narcosis I could distinctly palpate a mass the size of a hen's egg to the right of the uterus. I told the family doctor I was now certain of my diagnosis, but he insisted upon my doing the curettage. The curette removed distinct products of an early conception, and as the family doctor was standing behind as I was curetting, doubtless gloating over what he thought was my discomfiture, I noticed a distinct change in the color of the mucous membrane of the vagina. I called out to the anesthetist and asked him what the condition of the pulse was; he replied it was good. I continued with the curetting and in a few minutes the anesthetist called to me, saying he could not feel the patient's pulse. I jumped from my seat to look at the patient's face, and if I ever saw an exsanguinated woman I saw one before me then. Her face and lips were completely blanched. Actual death could not be attended with a greater degree of pallor of the countenance. In want of a scalpel I cut through the abdominal wall with a pair of angular scissors I had in my kit. The blood spurted up quite a height like a miniature geyser as soon as I cut through the bulging peritoneum. I passed down my hand in the pelvis, caught the right tube, which had a good-sized rupture at the isthmus portion, tied a piece of catgut around it near the horn of the uterus, and cut it away. I removed as much of the blood as I hastily could and closed the abdomen with tie and sutures of catgut. The peritoneal cavity still contained so much blood after the great quantity that had escaped from it spontaneously, and with what I had removed, that the family doctor could not be convinced that active hemorrhage was not still going on. But I felt confident his fears were unfounded. At the outset I had the husband telephone to Mount Sinai Hospital for a couple of internes to come at once with the intravenous apparatus and the ambulance. The internes arrived just as I was closing the abdominal wound. The patient was still pulseless and apparently lifeless. Each interne opened a vein in either arm and infused about 40 ounces of physiological salt solution. The patient was then placed in the ambulance and taken to the hospital, oxygen being administered en route. Shortly after reaching the hospital the pulse could be felt at the wrist, and, although she was very feeble for a few days she made a surprisingly rapid convalescence, had primary union of the abdominal wound and left the hospital a little after three weeks. The only complication she had was a breaking down of the intravenous wound of the right arm. The case, as you will have gathered, was one of these rare instances of simultaneous uterine and extrauterine pregnancy. I think it would be difficult to convince those who were present that the patient would not have died if I had lost any time waiting for reaction to set in.

Another of these cataclysmic cases occurred also in a case of simultaneous extra- and intra-uterine pregnancy. As the case has already been reported in the *New York Medical Journal*, February 24, 1906, I will state here in the briefest manner possible the salient points only bearing on the present discussion. Laboring under the mistaken diagnosis of a pelvic abscess, I examined the patient one morning to ascertain whether the time was ripe for a vaginal incision and drainage. Shortly afterwards I was hurriedly sent for and found my patient in a most alarming condition, with lips and face of a sickly livid hue, and the pulse about 100 and very small, the abdomen distended and the respirations shallow and labored. I, of course, recognized at once what had occurred, and had a prominent gynecologist in the neighborhood see her with me within ten minutes. He was opposed to immediate operation and advised morphia, ice-coil to the abdomen, and very careful stimulation. Instead of growing better the patient grew worse, so that four hours later the same consultant agreed that the only hope lay in operating at once. This was done, and as in the foregoing case, when the peritoneum was opened the blood spurted out with considerable force. An assistant was getting the arm ready for an intravenous infusion, but as soon as the abdomen was opened the patient's condition perceptibly improved, as was manifest by the color of the face and lips, and her pulse, due to removal of the great pressure upon the diaphragm and secondarily upon the heart and lungs. The case presented great and technical difficulties on account of extensive adhesions and the large raw surface created by the enucleation of the original hematocele, which I mistook for a pelvic abscess. The patient was in a very critical condition for several days, but finally made a good recovery.

The remaining four cases of the cataclysmic series presented similar features, and all promptly responded to the same line of treatment, operation as soon as it was possible, and the infusion into the veins of the arms of large quantities of physiological salt solution.

I wish to emphasize here that the intravenous infusion of salt solution skillfully and expeditiously administered by an assistant formed a very important part of the treatment. And I would like to repeat in this connection the words I used on a former occasion: "It is truly amazing to see in these cases how an apparently moribund patient can be brought to life by opening the abdomen, rapidly ligating the bleeding vessel, and injecting a large quantity of saline solution into the veins of the arm."

If it be said that these desperate cases which I have termed cataclysmic would not have died if left alone I can only say that that was not my impression, nor was it the impression of the several men who saw the individual cases; further, the literature contains numerous cases of fatal hemorrhage from tubal abortion or rupture, and everyone with a large experience has encountered one or more cases of the kind.

It is of significance that during the past ten years the only case of fatal intraperitoneal hemorrhage occurring in my practice was one in which operation was delayed against my advice until it was too late. The woman had been having symptoms of a ruptured ectopic pregnancy for several weeks, when one day at her place of business she fainted while on the toilet at about 6 P. M. She was brought home in a carriage. I saw her in consultation at 9 P. M., three hours afterward. The woman was very stout, was deathly pale, and had a pulse of 160, but which was still of a fair quality. I urged immediate operation, but could not obtain consent from the husband. He and the patient were willing to have it done next morning. The patient was placed in charge of a nurse and the usual treatment for intraperitoneal hemorrhage ordered. Next morning when we arrived prepared to operate, the pulse could not be counted at the wrist and evidences of extreme exsanguination were present. The patient was hurriedly placed on the table and expired in a few minutes after a few whiffs of

chloroform had been given and before I had time to open the abdomen.

Before closing I wish to make my position clear. In the vast majority of cases of rupture or abortion of tubal pregnancy it matters little whether the operation be done as soon as expedient or deferred for one, two, or more days. It is only in those very rare cases of abortion or rupture in which the amount of blood poured into the general peritoneal cavity is so overwhelming as to place the patient *in extremis* from anemia and pressure upon the heart and lungs that, to my mind, immediate operation with prompt intravenous salt infusion are imperative.

In illustration of how long a time may elapse before a case of that kind is encountered, I will state that during the past two years I have operated upon 28 cases (hospital and private), many of which were attended with copious intraperitoneal hemorrhage, but only one of them constituted what I considered an urgent or cataclysmic case. The remaining 27 cases were operated upon at my convenience or on the regular operating days of the service.

Still it is not my custom to defer operative interference more than a few days in any case of ectopic pregnancy in which I have been able to establish the diagnosis with a fair degree of certainty. And it is to the adherence to that practice that I attribute, in a great measure, the good results I have attained.

But in the kind of a case which I have above described as cataclysmic I would consider myself as devoid of surgical principle and of surgical courage if I failed to cut down at once with whatever means happened to be at hand so as to ligate the bleeding tube and thus arrest the hemorrhage.

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ACUTE LOBAR PNEUMONIA—A STUDY IN INFLAMMATION.

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Pneumonia is king! Of all the diseases incident to germ invasion we have none more acute or more tragic in result. Perennial in appearance, unaffected by laws of sanitation, it has progressed in importance within the last fifty years so that instead of being eighth on the mortal list it now stands first. It exists in all climates and varies in intensity and death rate at different periods. Previous to 1850 it occurred more rarely and ran a fairly mild course, except in periods of epidemics, but since that time, according to statistics of the larger hospitals at home and abroad, it has become prevalent, and, in spite of the divers plans of treatment, the average death rate to-day is about 25 per cent.

A careful study of the natural and morbid physiological conditions relevant to this disease is most important in building up a rational form of treatment. The materialistic mind, quite common to the profession, is not satisfied with strict empiricism, though insufficient knowledge has made symptom doctors. The wonderful discoveries through laboratory research have so advanced our knowledge of physiology and pathology that a critical inspection of this type of inflammation will be most productive.

Health is due to the proper balance between the ever-present attack of pathogenic microbes and the normal resisting power of the individual.

In order better to comprehend the several phenomena incident to pneumococcal invasion of the lung it may be well to restate many well-known facts. The right bronchus is anatomically an extension of the trachea and passes down as a main trunk into the right lower lobe. The ultimate bronchioles are 1-125 of an inch in diameter and the air cells a little larger. Aeby estimates three to four million of pulmonary vesicles, with a superficial surface of one hundred and thirty square meters. These cells are possessed of a thin, delicate epithelial lining lying over the blood-vessels. Between the capillaries is a small, flat, nucleated cell. These lie on a basement membrane, and are connected by a cement substance, which, when in a fresh state, is clear, viscid, and semi-fluid. On inspiration pseudo-stomata appear between the epithelia which lead to the lymph-canalicular system of the alveolar wall, the latter consisting of striped muscle cells, branched connective tissue, and some elastic fibers. In the alveolar septa are capillary vessels—an exceedingly dense network—which may be exposed on both sides in contiguous air cells. The surface of the air cells is always moist and generally contains free eosinophiles, which in some way are connected with the nutrition of the alveolæ.

The air breathed at each inspiration is known as the tidal. The amount ordinarily taken in is 1-10 of the capacity of the lung. Still, on forced inspiration some of the fresh inspired air may reach a certain number of the vesicles.

The mucous membrane of the nose, pharynx, and bronchial tree are well fitted for the purpose of gathering up irritating particles, which, otherwise, might enter the lung. Fine particles of dust entering the lung may produce collapse of limited areas. Dust, odors, carbonic acid gas, and body emanations when breathed act reflexly, producing a protective dyspnea.

The respiratory interchange of gases between the tidal air and the residual is more rapid and complete when the outer air is cooler, the ratio being in proportion to the difference in temperature between the inspired air and that of the lung. Cool air passing over the nasal mucous membrane is a stimulant to the act of respiration, as is also a draught of cool air passing over the face.

The oxygen inspired is absorbed according to the rate of capillary circulation. Any excess of oxygen beyond that which the body needs will not be absorbed. Thirteen volume per cent. of atmospheric oxygen is necessary to raise the alveolar oxgyen tension to the point where normal oxygen absorption by blood occurs. Oxygen to reach the red blood corpuscles has to penetrate the moisture of the alveoli, epithelia, basement membrane, endothelium of the blood-vessels, and the serum—1-2500 of an inch.

The depth of respiratory movement varies inversely with the rate. The capacity of the bronchial tree being constant, in rapid breathing the tidal wave decreases. Respiration is regulated by a point in the medulla commonly known as the respiratory center, better termed the inspiratory center, which is activated by carbonic acid gas in the blood acting as a hormone from the tissues. This center has no anatomical entity.

The respiratory tract has a flora ever present and as varied as that of the digestive tract, but, conditions being different as to mode of entrance and environment, the resultant processes are not alike. This flora is that of the inbreathed air. Dust particles, holding bacteria, on being inhaled encounter the moist surfaces of the nasopharynx

and sinuses, the bronchi, and even the deeper structures. Tyndal has shown inspired air to be always full of floating particles, whereas the expired air contains none. These particles find on the moist surfaces conditions which do not stimulate them to activity; some are killed by the secretions of the part, others live a saprophytic life.

Those who have been brought in the neighborhood of desiccated pneumonic sputum will obtain an abundant growth of the same in the nasopharynx, which may persist for several months without further inhalation. Any germ existing in the air may be found in this locality. Experiments have discovered the germs incident to the pneumonic process even in the alveoli of the lungs without disease action taking place.

These germs are being expectorated from the mouth constantly. Those that obtain lodgment in the bronchi are driven up by the action of the cilia of the lining membrane. Those that reach the alveoli there encounter the leucocytes (often called "dust cells" because of their properties), which wander in from the blood-vessels and readily take up dust particles and attached microbes, carrying them through the lymph-canalicular spaces to the lymph glands.

Pneumonia, not being a specific disease, may be instituted by almost any germ which is able to proliferate in the air vesicles. Instances are known of pneumonic processes, with clinical histories very similar to that of pneumococcus pneumonia, caused by the diphtheria germ, the typhoid, the streptococcus, the staphylococcus, colon bacillus, and even moulds, but, in the large majority of cases of clinical pneumonia, Fraenkel's pneumococcus is found—sometimes alone, often with other germs.

The pneumococcus of Fraenkel is closely related to the streptococcus group. It occurs in pairs, sometimes strung together so that two, three, or four are attached in a chain. When grown in the laboratory on ordinary cultures, they do not generate a capsule, but when grown in the body, a pronounced capsule composed of mucin is always observed. It grows best in the presence of oxygen, but it can, by culture, be made to grow without. It is said that its growth is inhibited in pure oxygen. It does not secrete a toxin, so far as the present chemical methods have been able to discover, but does produce, through its action on surrounding tissues, lactic acid, and contains a very poisonous proteid. According to Gordon's method of chemical differentiation we have some nineteen strains of this diplococcocus, which apparently differ from each other in their pathological possibilities, for agglutinative tests prepared from one strain will not affect more than three or four of the group.

The factors which predispose to an attack of pneumonia, factors which disturb the normal balance of resisting power in the alveoli, are exposure to cold, particularly the dry winds of the northwest, fatigue, lowered nerve tone, and the breathing of fine irritating particles. Numerous investigations have been made into meterological statistics in the endeavor to find some connection between climatic conditions and pneumonia, but, so far as we have been able to discover, no one has worked it out for the one or two days preceding the first acute symptoms. Almost all have tried to associate them and the day of death, which, necessarily, will be unfruitful.

The deductions of many years of clinical observation should not be set aside without further research. Cold and walking against sharp winds may have their effect through disturbance of the vasomotor equilibrium, in the chilling of the body, or through the cooling of the cilia in the respiratory tract, inhibiting their action, or mayhap, through breathing into the pulmonary vesicles air insufficiently warmed, thereby instituting thermic trauma. Fatigue and nervous depression (somewhat similar conditions), may be effective through the trophic and vasomotor nerves of the lung.

There are three channels through which the pneumonic germ may gain entrance into the lungs. The principal one, and the most important, is the inhalation of an embolic spray of cocci-laden saliva from the back of the tongue, which, on account of anatomical conditions, is prone to be drawn into the right lower lobe. The tonsil may absorb adherent cocci, pass them into the circulation, thence to be carried into the air vesicles. Similar possibilities exist in the digestive tract. From this can be explained the fact that bacteriologists have been able to make cultures of pneumococci from the blood of people previous to the first clinical symptoms.

Calmette fed animals with pneumococci, which later were found accumulated in the lung with congestion, but intratracheal injection of pneumococci failed to produce pneumonia unless associated with the injection of irritating dust, or unless the system were depressed by shaving the animal experimented on and exposing it to cold.

Clinicians and pathologists who have described only the gross conditions existing in the pneumonic process divide it into several stages: that of hyperemia, of red hepatization, of gray hepatization, and the condition of purulent infiltration. These are the successive stages which appeal to the eye principally. In typical cases we find the solidification confined largely or entirely to one lobe. Very often, however, autopsies will show foci of infection in the remaining apparently healthy lobes on both sides of the body.

The extent to which the disease has progressed is as variable; for with gray hepatization we may find the red contiguous, and other places in a condition of hyperemia. The hepatized lung is enlarged to the extent of full inflation by the intraalveolar pressure of its contents. The weight of the lung is proportionately increased so that if one side be entirely hepatized it may weigh from two to four pounds more than the uninfected. The remaining unhepatized portion of lung may be normal in appearance and in condition even close up to the affected area, or may be edematous to the extent of becoming gelatinous. In all cases of pneumonia pleurisy to some degree exists, characterized by a deposit of fibrin on the pulmonary surface of the pleura.

How the pneumonia germ by its presence is able to initiate the sequence of conditions under discussion has not been decided. Various men, competent to give opinions, refrain from doing so, because as yet biochemistry has not been able to discover a toxin secreted by this germ. We know that its presence acts as an irritant; that in its neighborhood lactic acid is formed: that the germ is short-lived and on its death its contained proteid, which is very toxic, may be eliminated. One quarter of a milligram of the proteid from a very pathogenic strain may be lethal.

The first phenomenon histologically occurring

when Nature's barrier breaks down is due to the local irritation by the pneumococcus, leading to proliferation of the endothelial cells of the alveoli. At the same time some hormone enters the system, withdrawing from the bone-marrow leucocytes in increasing abundance, which accumulate in the neighborhood of the irritant.

Experiments by injecting *B. coli* into animals show that within ten minutes from the time of injection we have dilatation of the capillaries in associate parts. Undoubtedly in the pulmonary capillaries distention of the same and engorgement with red blood corpuscles occur shortly after the proliferation of the endothelial cells of the alveoli.

Wherever the pneumonic germ proliferates, hemorrhages are prone to occur; they occur in the alveoli, for with distention of capillaries we have rupture of the same and exudation of red blood cells into the air spaces. With breaking down of some of the epithelial cells and of the white blood corpuscles fibrin is formed, which seems to proceed from the alveolar walls into the mass of corpuscles. This process of exudation includes the terminal bronchioles. The stage of hyperemia has now passed into that of red hepatization, due to the presence of dilated blood vessels giving color. At the end of forty-eight hours the polymorphonuclear cells appear in abundance, and by their ameboid movements gain entrance to the alveoli. In the meantime the pneumonic germ has proliferated abundantly, so that by the time the polymorphonuclear cells appear they are most numerous and are at the stage of greatest virulence. The advent of the white blood corpuscles indicates the beginning of the stage of gray or non-vascular hepatization. With the advent of the polymorphonuclear cells now begins Nature's cure. All other conditions preceding are incidental to bacterial predominance.

This white blood cell finds the germ fully activated and in its most perfect culture medium. The attack begins in each cell encompassing a host of cocci. The endothelial cells that are proliferated also become phagocytic. The phagocytic cells in their hunger for pneumococci will encompass so many as to be distended far beyond their normal size. As is well known, phagocytosis of itself does not inhibit germ life. White blood cells also contain enzymes, which leave them either by a process of transudation or through solution of the continuity of the cell and enter into the plasma of the neighborhood. It is the presence of these ferments which aids in antidoting the pathogenicity of the microbe and materially assists in bacteriolysis.

The reactions later to be mentioned in relation to the blood, are, of course, relevant to the conditions existing in the alveoli. By the end of the third day, ordinarily, phagocytosis and enzymic action have proceeded so far that the local inflammatory process may be considered practically at an end.

Further progress of disease condition is now not so much inflammatory as it is toxic. Many of the germs have died; their contained toxic proteids have been liberated and have entered the surrounding plasma, to be carried through the lymph-canalicular spaces with migratory cocci, either alone or contained in phagocytic cells. Some, through inability to proceed centrally, pass to the pulmonary pleura and there set up the almost constant pleuritis.

Although bacteriologists have often found pneumococci in the blood before the initial symptoms, it is but a matter of technique to discover them after this stage. Largely in proportion to their abundance is the severity of the process. At the time the phagocytes were called by Nature's chemiotaxis to the irritated area, the other means of protection were also called upon. The plasma of the blood, be it understood, is not a simple fluid, but contains enzymic substances peculiar to every tissue in the body, consequently there is an immense complexity of tissue ferments, proteids, electrolytes, etc., therein: so that when the toxin or the toxic proteids enter the tissues, certain, as yet obscure, reactions take place. That which has been discovered is sufficient to give us some comprehension of this wonderful process. Gradually there are formed several important bodies, some of which already exist, others produced by the occasion.

Many bacteriologists have worked on the blood serum in the endeavor to discover its chemistry. The natural result is many theses and quite as many opinions pertaining thereto. That which is accepted universally should be known to each individual practitioner and be as thoroughly comprehended by him as are the grosser lesions which naturally come to mind in physical diagnosis.

The pneumococcus, secreting no toxin and containing only a toxic proteid to be discharged when the germ ceases to exist, does not induce the formation of an antitoxin, so the contained ferments in the plasma are our only reliance for recovery.

Phagocytic cells contain cytases which are not bacteriolytic but inhibitive. Exploded or disintegrated leucocytes discharge substances known as alexins which are also bactericidal, but do not act effectively without the presence of what is known as intermediary bodies.

The coccus and the substances produced by it in the lung lead to the formation of numerous not well-understood antibodies, which originate in the blood-forming organs.

Another ferment, called agglutinin, possesses a physiochemical reaction, leading to the clumping of the cocci and often solution of their content.

As at present comprehended, the most important substance is the opsonin, an intermediary body formed from the various body cells, which has an inhibiting effect upon the coccus so that when engulfed by the phagocyte its contained bacteriolytic enzymes may complete the destruction of the germ. Thus Nature's defense is antimicrobic.

The time necessary for the formation of sufficient opsonin, agglutinin, and antibodies to enable the phagocytes to accomplish their result is the length of the disease process proper.

The crisis of the disease occurs at that time when these substances obtain the upper hand. Such is Nature's method of cure, and without this process, without the opsonins, or the agglutinins to assist the phagocytic action and the antibodies, the crisis does not occur and death may and probably does follow.

As soon as the crisis has occurred, as soon as the battle has been fought and won by Nature, then comes the process of elimination of the different toxoids in the blood and the absorption of the pneumonic exudate and its elimination. This process of absorption is heterolysis, that is, the mutual fermentive action of one extraneous product upon another in the presence of leuco-

cytes and electrolytes leads to their softening and the gradual passage through the lymphatic system into the blood.

During pneumonia the chloride of sodium output is diminished and often absent, because of its retention in the system, no more in the lung than elsewhere; nevertheless, its presence in the lung is of vast importance. Chloride of sodium is an active electrolyte and easily becomes ionized. The electrolytes put life into the proteids and without their presence active tissue changes would not occur.

As soon as the crisis has passed we have the nitrogen output increased and the chloride of sodium in proportion, while the leucocytes promptly diminish in number.

In addition to the local effect of the germ mighty influences are brought to bear in various ways upon the economy in general. After one or two days' intubation, tissue and microbic poisons, of amount sufficient to produce fever, rapidly accumulate. The sudden influx into the system of these materials produces a vasomotor reflex disturbance so severe that the peripheral capillaries contract and the volume of blood is largely thrown into the abdominal cavity. This condition is clinically known as the chill or rigor. Although it is the first symptom ordinarily recognized, a careful study of individual cases, where possible, will show minor respiratory lesions: tonsillitis, indicative of pneumococcus invasion through the tonsil; tracheobronchitis, often induced by the pneumococcus, gastroenteritis suggestive of entrance by this means, or conditions of malaise, with rise in temperature.

After the first phenomenon respiration becomes more frequent, its normal relation to pulse-rate being disturbed. In the first two or three days of the process this increase in rapidity of breathing is brought about by three factors: irritation of the pulmonary branches of the vagus by the inflammatory reaction, the presence and accumulation of carbonic acid gas in the blood which stimulates the inspiratory center, and fever. Where the pneumococcus has invaded the pleura, the distress incident to this condition prohibits deep breathing. As we may have high fever or even moderate accumulation of carbonic acid gas without acceleration of respiration, the most important factor is the vagus.

After the third day when the picture changes dyspnea may ensue, accompanied by cyanosis. Urgency in respiration is brought about by the continuance of the conditions mentioned, to which may be added the effect of toxins on cerebral centers and heart, extent of lung involvement, bronchitis, and edema of infected area. It is said that in pneumococcus pneumonia edema is rare, it being generally found in the atypical types.

Carbonization is a terminal condition and is brought about by a combination of conditions, stimulation of the vasomotor center by carbonic acid gas, consolidation, and pleuritic pain. In severe cases continued and excessive irritation of the cerebral centers may lead to the breaking down of these mechanisms.

Fever is a condition incident to failure of the heat regulating apparatus. Not until the temperature of the body exceeds 104.5 degrees has this disturbance proceeded to the extent that exhaustion of the thermogenic center may be affected or degenerations in the important tissues of the body occur. In most diseases that are recoverable, the temperature does not rise for any length of time beyond the amount stated. Experiments have demonstrated that in a warm animal the disease runs a more rapid and sthenic course than in a chilled animal. Clinical experience shows a more prompt and lasting crisis where the local process has been intense, as indicated by high continued fever. Laboratory experimentation proves a more prompt formation of the antibodies, agglutinins, and opsonins.

The cardiovascular apparatus is not affected alike in all cases. When we consider the several strains of pneumococcus, with possibility of accompanying germs of divers types, and the extent of disease induced, the different qualifications for reaction (local and systemic—normal in some individuals and pathological in others, as in the aged and the alcoholic), small wonder is it that this apparatus varies so markedly in its sustaining and resisting powers. The pulse is quickly affected, being more frequent and full. As the disease progresses it becomes small and weak. High arterial tension is a rare condition in the early stages. It may be subnormal, but with beginning carbonization and passing on to pronounced cyanosis, the pressure rises, due to the accumulation of blood in the venous channels. Finger determination of arterial pressure is inaccurate. Medical attendants fail to recollect that systolic high pressure into dilated blood-vessels impresses the examining finger as though high arterial tension did exist. Observation with the more accurate instruments fails to confirm this.

The heart is a most important organ, naturally, in this pathological complex—its nerve mechanism, first stimulated by the toxin, then weakened by lessened nutrition under increased venosity, its muscle degenerating as do the other tissues of the body, its endothelium irritated and hyperplastic in the production of phagocytic cells, and strained, particularly on the left side, by the gradually increasing venous pressure from behind and the obstruction ahead—hence it must be watched, aided, and at no time debilitated by treatment. Death occurs through its failure either by degeneration of its muscle or distention of its chambers.

Sometimes toward the end of the disease, or even after the crisis, pneumococci that have been in the blood find lodgment in various organs of the body. When lodged in the stomach or intestines a local inflammatory reaction is induced, often hemorrhagic, inducing a gastritis or enteritis which may be fatal in the weakened state of the individual. It is claimed that the pneumonic germ is always found in gastric ulceration. In the liver or kidney, as in the heart, cloudy swelling may occur, degeneration of tissue, and at times pus foci. In a certain percentage of the cases the effect of eliminating nitrogen products, toxins, or ill-advised medicaments may produce a desquamative nephritis of more or less virulence.

Whereas, the profession with fair uniformity is agreed as to the facts and hypotheses cited in the text, when it comes down to treatment we find it as varied as the individual mind. The manner in which the individual receives a statement into his mind depends upon his receptivity, which is a personal factor, and we naturally try to adjust the new to our preconceived notions. It has been said that "physicians suffer from an incurable disease, that of building up complete forms of treatment of diseases under observation from inadequate facts eked out by vivid imagination." Hip-

pocrates has said "experience is fallacious and judgment difficult."

It will be interesting to deduce from the statements presented in this paper a plan of treatment and then see how it compares with the most approved methods of the day.

Pneumonia, being a microbic disease, the patient is a center for dissemination, consequently all cases sould be treated from this viewpoint. Seclusion, sanitary cleanliness, and destruction of sputum should be rigidly enforced. After the disease has gone, disinfection of all objects possibly reached by the expiratory spray is in order. As each individual supposedly infects himself from germs lodged in his own air-passages, something may be accomplished with gargles, such as alcohol with glycerin and bicarbonate of sodium. The sinuses connected with the nasopharynx, of course, cannot be reached. Their importance, however, can be judged when in 91 per cent. of deaths from pneumonia active sinusitis is found.

Nature's method of holding the disease in check, of establishing a cure and promoting convalescence is so well adapted for the occasion and so wonderfully complete, that the physician of today, and probably of the long future, will be compelled to sit by the bedside in admiration of the process, satisfied to do that which may assist Nature and studiously avoiding any treatment, pharmaceutical or non-pharmaceutical, which would tend to interfere with her methods.

"No branch of therapeutics holds out better promises than that which is based on natural methods," says Campbell in the Croonian Lectures. That is, increasing the opsonic power. Treatment by drugs, dating back as it does for thousands of years, has, with few exceptions, yielded but barren results. The whole art of healing consists in acting directly on brain and nerves, relief of peripheral irritation and in curing a faulty plasma, nothing more or less. It may be summed up in the aphorisms "tend the mind and the nerves; correct the plasma."

In the treatment of the individual we must ever recollect that pneumonia is a process not a condition, being a disease of short duration where the phases change from hour to hour. The most important points to bear in mind are the nerve tone, respiratory interchange, the economy's reaction as expressed in the serum, and the condition of the heart.

The pendulum has swung many a time in the experience of most physicians only to return. But the swing of the pendulum towards fresh *live* air in the treatment of pneumonia is hardly apt to return because it is impelled by proven physiological laws.

A patient placed where he will breathe "uncooked" air, whose sensitive nostrils will not be offended by house odors, carpet dust, and body emanations from himself and the attendants, and where in addition his nerve tone, particularly the inspiratory center, will be invigorated and sustained by the flow of cool air over his face, and the respiratory changes activated by the difference in temperature of the inspired air, will receive a treatment far more potent in value than anything pharmaceutical.

It is very important to protect the body against chill. Any such tendency must be obviated by heat to the feet and limbs. Gentle perspiration steadily maintained equalizes the circulation, prevents vasomotor disturbing waves, and postpones to some extent the dreaded carbonic acid accumulation.

Throughout the disease avoid unnecessary treatment of conditions which, though prominent, carry no serious import. The bounding pulse of the inflammatory stage need not be treated by medication. Sedatives, such as aconite, veratrum, and the coal-tar products should be avoided even though their primary effect may be agreeable to the patient and attendant. It is hardly wise to give any sedative to an organ which in a very few hours must stand an enormous strain.

When dyspnea and cyanosis are severe vascular tension becomes high. More blood is thrown into the right side of the heart than it can discharge. If the heart muscle remains unaffected by the toxins, its function may not be compromised, but, if the back pressure be too great or the muscle undergoes granular degeneration, then dilatation may occur. In some cases venesection is proper. Digitalis, though slow in action, is never harmful. Where the possibility of this condition is surmised, begin this drug one or two days before it is really needed—never more than a grain of the powdered leaves every three hours and for not more than three days at that rate.

The diminution in tidal air, brought about by rapid breathing and pain, tends to promote the accumulation of carbonic acid in the air-cells. Relief of pain by the application of aconite stupes or heat or cold will enable a longer and deeper inspiration. The value of oxygen has been much discussed. Among a number of practitioners the tendency as to advise its disuse. Personal experience can say nothing for it except that which is in its favor. It is but natural that an inspiratory wave surcharged with oxygen should increase the oxygen tension in the alveoli and diminish the carbonic acid. Without fail, begin its administration at the very first indication of increasing carbonization; do not wait until the heart feels its effect; do not wait for dyspnea. Fortunately, however, with the patient's face in the open the indications for its use are greatly decreased.

Avoid chlorides of any type, particularly if the kidneys fail to eliminate them, for pulmonary or meningeal edema may ensue.

Sometimes before the crisis gastrointestinal complications are pretty apt to arise. A careful outlook should be kept for the possible acute dilatation of the stomach, which is a complicating factor more often than is surmised. Intestinal toxemias should be promptly relieved by mild purgation.

The supreme factor in treatment is the serum. Leucocytes, except in the very pathogenic types of pneumonia, do not fail, but the ferments peculiar to the serum, though present in the normal individual, require several days for their sufficient elaboration. All treatment therefore should be directed towards the prompt formation of these substances. The opsonins in particular are easily influenced by various conditions. Sleep and mental and physical comfort materially assist in their formation. A quiet, sympathetic, and attentive nurse, congenial surroundings, and the assurance of recovery are not unimportant factors for their formation.

Vaccination after the plan of Wright with dead pneumococci obtained by culture from the pharynx is a logical procedure and has been reported as successful.

It has been shown that several drugs ordinarily administered during the course of this disease are potential for harm. Alcohol, for instance, will quickly reduce the opsonic index. Another action of alcohol is that it is quickly absorbed from the stomach without being acted upon by the digestive fluids, and, passing into the liver inhibits that organ's function as a toxin destroyer. Our best clinicians do not resort to it until the crisis, but even then it may be harmful, for, if there remain any pathogenic germs in the lung with the opsonic index cut down too promptly, relapses may occur.

Opium, aconite, and large doses of quinine inhibit the ameboid movements of the white blood corpuscles. Small so-called "tonic" doses of quinine, however, have a contrary effect. Water should be given liberally for its flushing effect.

As the pneumococcus brings about the formation of acids in the lung and catabolism of body-acids in the tissues, some alkaline is valuable through the entire course of the disease; the ammonia preparations are perhaps the best type. They further tend to forestall heart clot.

The historical importance of the present attitude of practical medicine is not fully appreciated. After centuries of empiricism with an occasional glimmer of light which but made the darkness darker, our hopes were raised by the discoveries in physiological therapeutics. Not long was it, however, before limitations again were discovered; so now disease treatment includes all that pertains to empiricism, drug action, serum treatment, and body sanitation.

Let us know Nature's methods and respect them, aiding her in every way by good nursing, soothing nerve distress, and not add poison to toxemia.

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NOTES ON CHRONIC RHEUMATISM AND ITS TREATMENT.

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While no doubt a great deal remains to be elucidated in regard to the etiology of the diseases grouped under the somewhat elastic term chronic rheumatism, the data actually in our possession are sufficient to enable us to take a broad view of the subject, and in many instances to formulate the appropriate treatment, whether prophylactic or curative.

It is indispensable to a proper comprehension of the pathological problems which we propose to discuss to subdivide cases of chronic rheumatism into various clinical forms, and this tendency has become even more manifest during the last few years. One is naturally tempted to suggest a classification based on one's personal experience, but this practice, if generally followed, would inevitably result in "confusion worse confounded," and we prefer to adopt the classification which approximates most nearly to our own conceptions, with liberty to modify or amend descriptions which do not appear to us to be strictly accurate.

The affections included under the head of chronic rheumatism in many instances differ widely from each other; indeed, so difficult is it to tabulate these varieties on any uniform plan, that Teissier and Roque brought forward a classification based on the supposed etiology and pathogenesis, leaving the clinical manifestations to take care of themselves. From this point of view cases of chronic rheumatism may be divided into three principal groups: (1) chronic, progressive, deforming rheumatism (Trousseau's *rhumatisme noueux* and Besnier's *osseous rheumatism*), (2) chronic forms of rheumatism following acute or subacute articular rheumatism or secondary to infection of some kind, (3) chronic rheumatism of a dyscrasic or toxic type often described as rheumatic gout.

Progressive, deforming rheumatism or arthritis deformans is usually attributed to the influence of damp, and many authorities hold that this etiological factor is capable of determining the disease apart from any infection or preexisting constitutional disturbance. That damp plays an important part in precipitating this variety of chronic rheumatism we are not willing to deny, but it can at most be but one factor in its production; in other words, there must be a suitable soil, and the salient feature of this soil is chronic malnutrition. A general survey of the conditions under which the disease makes its appearance appears to justify the assumption that it may be determined by the long-continued action of malnutrition in arthritic subjects who happen to be exposed to damp. This would explain why arthritis deformans is most frequently met with in elderly persons belonging to the poorer classes. It is occasionally met with among the better classes, but of course malnutrition is present just as much when the patient is unable to assimilate food as when he is unable to obtain it.

Deforming rheumatism may attack one or several joints, one of the most interesting forms being that in which the vertebral joints are involved, "rhizomelic spondylosis." Some authorities consider that the underlying cause of the disease is an obscure, and as yet unproved, affection of the nervous system, while others suggest that cold and damp may vitiate metabolism with the formation of toxins that act as irritants to the spinal meninges. The evidence brought forward of the presence of such toxins and the action on the meninges is, however, to put it mildly, inconclusive, so that after all we are reduced to conjecture, all the more so seeing that the post-mortem appearances are disconcertingly inconstant. Taking the whole of the circumstances into consideration, it is difficult to resist the conclusion that this variety of chronic rheumatism is an infective or toxic trophoneurosis.

The second group comprises cases in which chronic rheumatism follows acute or subacute articular rheumatism, as well as infections associated with articular manifestations, such as gonorrhea and tuberculosis, or, more rarely, the eruptive fevers (especially scarlet fever) and dysentery. We are indebted for our knowledge of the etiological importance of tuberculosis in the production of rheumatic manifestations to Poncet, who has opened up a fresh field of investigation.

Lastly, we have the cases in which chronic rheumatism appears to have a dyscrasic or toxic origin, the so-called rheumatic gout. This form is assumed to be dependent on autointoxication with uricemia, and is closely associated with what Huchard calls delayed nutrition. It gives rise to various dermatoses, gravel, etc., and is met with principally in individuals the subjects of that special constitutional state known as "arthritism." This group comprises articular deformities arising in connection with dilatation of the stomach (Bouchard's nodes), interstitial nephritis, biliary infection, and cholemia.

These subjects are very prone to circulatory disturbances, with heightened arterial tension, aortitis, and renal sclerosis.

In view of the diversity of the etiological factors and clinical manifestations of the different forms of chronic rheumatism, it is hardly necessary to point out that there can be no one treatment, since each cause and each effect must come within our purview. Ignorant as we are of the exact pathology of certain forms, the treatment is necessarily in great measure symptomatic, and is consequently to be adapted in each case to the requirements of the individual patient. Beginning with considerations on general hygiene and therapeutics, and the hydromineral treatment, we shall pass on to deal with the special therapeutic indications in the different forms of the disease.

1. *Hygienic and Dietetic Treatment.* — Strict hygiene is the basis of treatment in all forms of chronic rheumatism, and as cold and damp are powerful factors in determining its incidence, our first care must be to see that the sufferer is protected against their untoward influence. As far as possible the patients should avoid living on the ground floor, especially in narrow streets or overlooking courtyards. The dwelling apartment should face south, the bedroom should be large and airy and the bed must not be placed against the wall. Ventilation should be insured by an open fireplace and ample window space, for light and fresh air go together. If the structure of the house be defective, *i.e.* lack of damp courses or absence of cellars, if the house be situated on a clay soil or in proximity to ponds or marshes or too closely hemmed in by trees, the patient must be advised to change his residence. Rheumatic patients should wear woolen undergarments at all seasons of the year, and affected joints must be protected by flannel bandages. As it is of the greatest importance to maintain the skin in a state of functional activity, the patient should be well rubbed with a horse hair glove or Turkish towel moistened with spirit (eau de Cologne) every morning. Regular exercise short of fatigue is indispensable, with special provision for movement of the affected joints. It is hardly necessary to remark that we do not recommend exercise directly after an attack of acute rheumatism, or for some time after an acute exacerbation in the course of chronic rheumatism. Apart from these considerations, methodical exercise of the stiffened joints is an essential part of the treatment, especially in arthritis deformans. As bearing on this point it is worthy of note that deformities are much less pronounced in the right hand, a fact which Charcot attributes to its being more actively employed than the left. In this way we may avert the tendency to ankylosis that characterizes certain forms of chronic rheumatism. It is necessary to insist on this point because, owing to the pain and discomfort associated with movement, patients are often very reluctant to comply with this advice.

Diet is a matter that must be thought out in each case. In progressive deforming rheumatism the patient is generally very debilitated as the result of chronic malnutrition, hence the term "poor man's gout" often applied to this form. Such patients require a generous, stimulating dietary, and much benefit attends the administration of cod-liver oil. Moreover, these patients are peculiarly liable to develop phthisis, and this is a further indication for improving nutrition. Inasmuch, however, as they not infrequently suffer from chronic Bright's disease, it behooves us to examine the state of the kidneys before giving large quantities of nitrogenous food.

The same necessity for liberal nourishment obtains in cases of rheumatism associated with infection, whether the infective agent be rheumatic fever, gonorrhea, or tuberculosis.

In dyscrasic or gouty rheumatism the problem changes. The sufferers are often persons addicted to overeating, associated, it may be, with sedentary habits of life. The first indication, therefore, is to restrict the amount of food, forbidding excesses of all kinds. As a rule, they may be put on a mixed diet, merely restricting the intake of nitrogenous food and alcohol. It is not so much the kind of meat as the quantity that we have to consider. Beef and mutton are, however, preferable to veal and game; pork (except lean ham), fats and the flesh of young animals, such as kid, lamb, etc., should be altogether forbidden. Fish is admissible, with the exception of salmon, cod, and shell fish. Eggs and milk in moderation along with green vegetables. Tomatoes used to be prohibited on the ground that they contain oxalic acid (like celery), but the validity of the objection is open to question. Much the same thing may be said of spinach and asparagus since authorities are far from unanimous in reference thereto. Farinaceous articles may be taken—potato, macaroni, and the like, but bread should be well baked and thoroughly masticated. Fruit is best taken cooked, with milk or cream in lieu of sugar. All spices and condiments are to be avoided on the ground that they disturb digestion, but lemon juice in moderate quantities is a useful, refreshing beverage. In the matter of drink, pure water is unquestionably to be preferred, but for persons with poor appetite and slow digestion, a small quantity of a light wine (preferably white) may be allowed. Heavy beer and wines are injurious, and in France, at any rate, it is customary to discountenance spirits, even when diluted. These general rules will have to be modified in deference to individual requirements, especially in the presence of indications of nephritis.

The general prophylactic and hygienic treatment of chronic rheumatism may be summed up as follows: Strict attention to personal hygiene, special precautions in respect of dwelling and clothing, regular exercise with special attention to affected joints. In progressive deforming rheumatism and in the forms following infection, liberal nourishment with close surveillance of the state of the kidneys. In dyscrasic or gouty rheumatism, a dietary strictly regulated in respect to quantity and quality.

2. *Medicinal Treatment.* — The extreme chronicity of these affections is apt to discourage both patient and physician; nevertheless there are certain drugs which experience has shown to be beneficial. The therapeutical indications will vary, of course, according as the disease is in an acute or a chronic stage. A volume might be devoted to the innumerable methods of treatment that have been recommended at one time or another, so that I shall limit my remarks to the use of remedies, the beneficial effects whereof are within my personal experience.

There is no doubt that in acute and subacute rheumatism, in addition to local applications to be described later, bicarbonate of sodium and quinine afford marked relief. Charcot was in the habit of prescribing large doses of bicarbonate of sodium, an ounce or more in the twenty-four hours, but although we still make use of the salt it is in much more moderate doses. I believe that all the good effects can be obtained by giving it in doses of two or

three drams in divided doses daily. Sulphate of quinine, when well borne, is valuable on account of its specific and tonic action, but it is rarely necessary to exceed ten or twelve grains a day in divided doses.

In spite of the fact that the salicylates do not act as rapidly or as constantly in chronic as in acute rheumatism, they are often employed, and they are useful in that they tend to mitigate the painful manifestations when present. The possibility of inducing renal disturbance with these drugs must never be lost sight of, and the renal function must be closely watched before and during their exhibition. Various coal tar preparations are also employed on account of their analgesic and antiperiodic properties, but it is very doubtful whether they exert any curative effects. In patients with gouty antecedents, personal or parental, colchicum often brings about an improvement, but there remain a number of cases in which none of the foregoing afford relief, and we are obliged to have recourse to opiates.

In what may be called the quietly progressive forms of the disease, the two great remedies are iodine and arsenic. They require, however, to be given in comparatively large doses, and their irritating effects on the gastric mucosa render administration by the mouth admissible only exceptionally. Thanks to pharmaceutical progress, it is now possible to give both iodine and arsenic by intramuscular injection, thus avoiding the inconveniences associated with their exhibition *per os*.. If preferred, however, we may have recourse to compounds of iodine with peptones, which contain a large proportion of iodine, and are comparatively unirritating. The introduction of the cacodylate of sodium and its numerous congeners enables us to employ arsenic with the greatest ease whenever indicated. I usually administer from one-half to one grain in a sterilized solution daily for ten days followed by a week's interval, and another ten injections, this time allowing an interval of at least a month. Under the influence of this treatment, very marked improvement often ensues in respect to both general nutrition and local lesions.

In some instances, however, the iodides appear to yield the best results especially when there is high arterial tension. The sodium salt is to be preferred to the potassium salt in presence of marked asthenia, and should troublesome coryza supervene my usual plan is to increase the dose, for, curiously enough, the symptoms of iodism other than gastric often subside when we double or treble the dose. In this way I sometimes give as much as fifteen to twenty grains daily without inconvenience, associating it with bicarbonate of sodium and a vegetable bitter. It is well to suspend the administration for a few days from time to time in order to avoid accumulation. When there is much anemia, iodide of calcium or iodide of iron may be employed.

Iodine and the iodides can be associated if desired, as in the following formula: Iodine gr. xxx, iodide of potassium gr. lxxx, rectified spirit fl. oz. i. Begin with five drops thrice daily in water or milk or wine, gradually increased to thirty or forty drops daily, with an interval of a week once a month. Gram's saturated solution is suitable for hypodermic injection, if preferred. It contains iodine 1 part, iodide of potassium 2 parts, distilled water 100 parts; one to three cubic centimeters for each injection. Various organic combinations of iodine and oily solutions are also in use. The iodine in the last named preparations is eliminated much more slowly, so that their action is maintained much longer than that of others, which is an advantage. The oily solutions may be given by the mouth or hypodermically; the injections are quite painless. The choice of the particular preparation will be determined in great measure by the tolerance of the patient. It must be remembered that intolerance of one preparation does not entail inability to tolerate others, hence the value of a variety of formulæ. Among other drugs that have enjoyed a certain popularity in the treatment of rheumatism may be mentioned guaiacum and phosphoric acid. These have yielded good results in some instances, but we are not at present in a position to define the precise cases in which they are to be preferred.

In rheumatic gout alkalies are useful to combat the hyperacidity, but it is easy to overshoot the mark, and it is well to suspend their administration from time to time in favor of valerianate of ammonium or piperazine. One sometimes meets with cases of chronic rheumatism associated with myxedematous symptoms, and in such thyroid extract has appeared to be of benefit, doubtless by accelerating nutrition.

It will be seen that the main object of medicinal treatment is to stimulate nutrition, thus improving the general health, the local lesions being dealt with by topical measures.

3. *Local Treatment.*—The object of local treatment is to alleviate pain, to diminish the local inflammatory reaction, and to restore mobility to the affected joints. One of the most valuable sedatives to allay the pain during paroxysms is salicylate of methyl, as in the following formula: Salicylate of methyl and chloroform āā 20 parts, camphorated oil 100 parts; or we may prescribe equal parts of oil of wintergreen and olive oil.

As a palliative measure liniments of belladonna are often of service or the extract of belladonna may be applied on hot compresses, to be renewed every two or three hours or oftener if the pain be severe. Dieulafoy recommends poultices with or without belladonna or laudanum. His favorite application was bread crumb that had been softened in water, gently heated for three hours and reduced to putty-like consistence by kneading with camphorated alcohol. Covered with protective, this may be left on for some days. This treatment is specially beneficial in subacute infectious rheumatism. Garrod, on the other hand, employed ammoniacum and galbanum plasters to the affected joints. When counterirritation is desired, nothing is better than tincture or liniment of iodine, blisters having fallen into disrepute.

General massage is of service in chronic rheumatism, in that it stimulates nutrition, but massage of affected joints and active movements thereof are not advised, since they often provoke a recrudescence of the pain; at any rate, they should not be used until some time after all inflammatory symptoms have disappeared.

Even in progressive deforming rheumatism (rheumatic arthritis) active movements may excite an acute exacerbation. It is just this question of deciding at what period massage and movement may advantageously and safely be employed that physicians have to consider, and only long experience enables one to form a trustworthy opinion.

Heat and electricity are variously employed in the treatment of chronic rheumatism, hot sand, warm mud, superheated water, the local application of hot air or vapor, heat generated electrically, and the electrical current, including high-frequency

currents. They all have their utility, and the choice between them must necessarily be determined by circumstances.

4. *Mineral and Thermal Waters.*—That the thermal treatment is beneficial in most forms of chronic rheumatism is evidenced by many centuries of practical, if empirical, experience. What modern research has done has been to distinguish between the various forms of the affection and to decide which is the most appropriate mode of dealing therewith. Thermal waters act in two ways—general and local. In some forms—rheumatic arthritis for instance, in which the general nutrition is poor—the constitutional effects are the most important, while in others—monoarthritis for instance, in which the state of the general nutrition may be fairly good—we rely much more upon the local action of the waters.

There are certain contraindications, such as noncompensated cardiac disease, arteriosclerosis, and advanced kidney disease, but none of them is absolute. The question indeed turns upon the actual condition of the patient rather than upon the particular disease from which he is suffering. It follows that the so-called contraindications are merely so many reasons for prudence in organizing the treatment and for close surveillance during its continuance.

It is generally agreed that the thermal treatment should not be commenced too soon after an acute attack, in fact not for some weeks after the pyrexial symptoms have subsided. I cannot help thinking that the mode of application of mineral waters possesses much more therapeutical importance than the mineral constituents, although these of course may play a subordinate part in effecting a cure. Not only so, but much benefit accrues from the change of environment and occupation or absence of occupation. Dyspepsia and nervous exhaustion are such common factors in all forms of chronic rheumatism that rest, outdoor exercise, and change of air, with an appropriate regimen constitute an integral part of the treatment. Alkaline and sulphur waters give the best results in the treatment of most forms of chronic rheumatism, but the former are contraindicated in the victims of chronic malnutrition on account of their lowering tendency. Sulphur waters, on the other hand, are stimulating, alterative, and depurative and can be adapted to suit individual requirements, whether the patient be suffering from malnutrition or not.

The thermal treatment, as practised at Aix-les-Bains, has served as a model for similar establishments all over the world. Tradition and continuous observation have perfected our knowledge of their action and of the mode of application, with results that are of world-wide fame. The treatment at Aix comprises hot and cold douches in association or not with general or local vapor baths or sulphur baths. The douches for the most part are combined with methodical massage under water, applied under instructions laid down by the physician. The local vapor baths (Bertholet) are also followed by massage when so directed. The "douche massage" may be regarded as the Aix specialty.

The temperature of the springs, which supply upwards of a million gallons daily, is about 45° C., and the water issues at varying degrees of pressure, so that it is subservient to all requirements. After the douche the patient is carried back to bed, where he perspires freely and reposes for about an hour.

OBSTRUCTION OF THE DUODENUM BY GALLSTONES. PREOPERATIVE LOCALIZATION; OPERATION; RECOVERY.*

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WHILE gallstone disease is of frequent occurrence, especially in women, obstruction of the intestines by gallstones takes place much more rarely, and the diagnosis of the condition is made difficult by the different clinical pictures that may be present. In one case the only explanation of some slight intestinal disturbance of short duration is a gallstone passed in the feces; in another an obstructing stone may be palpated by rectal examination; in still another, nausea, vomiting, colicky pains and meteorism are all present.

Whenever a gallstone that has dropped into the gut cannot find its way out *per vias naturales* with or without medical treatment, while giving symptoms of its presence in the bowel, the affection becomes a surgical one, requiring early recognition and localization. While any part of the bowel may be thus obstructed, the ileocecal valve and the lower ileum are the most frequently affected, while duodenum and jejunum follow next in the order of frequency. The middle ileum, the colon, and the rectum are rarer sites of such obstruction. Early recognition is necessary because the primary irritation of the mucosa, due to the presence of the foreign body, may quickly give place to ulceration and even to perforation of the bowel, thus transforming a mere mechanical condition into one that is much more serious in regard to treatment and prognosis. The following case well illustrates the above points.

Mrs. S. M., 35 years old, a native of Austria, was first seen by me on July 9, 1907. She had suffered for ten weeks with pain in the abdomen, vomiting, and general weakness. The treatment by her family physician was of no avail, nor did the several consultants agree upon the diagnosis. Ulcer of the stomach, congestion of the liver, cancer of the liver, gallstones, and even neurasthenia were brought forward as explanations of the clinical picture. The latter diagnosis, neurasthenia, seemed most probable to the husband and he was packing his wife's trunks for a trip to the seashore when I was examining her.

She told me that she had never enjoyed very good digestion and six months ago was seized with an acute attack of illness, for which she was treated by the administration of oil and of "gallstone pills." Ten weeks ago she began to vomit, at first one to three times a day, later more frequently. The vomiting occurred in the daytime and occasionally at night, with no relation to the taking of food. The vomitus was usually yellow, and contained particles of food and mucus; on one occasion it was streaked with blood and on another was greenish. It tasted bitter, was never black and never contained "coffee grounds." The patient complained of general abdominal pain and also of pain localized in the right epigastric region. The latter was of double character: first, dull pain occurring in paroxysms of short duration, and radiating to the anterior aspect of the chest and sometimes to the left epigastric region; secondly, persistent discomfort, accompanied with peculiar sensation of contraction and relaxa-

*Read at a meeting of the Harlem Medical Association January 8, 1908.

tion in the epigastric region. The pain and the discomfort were relieved by vomiting. Her appetite was bad, especially for milk and eggs, and she suffered much from belching of gas, nausea, and waterbrash. She had lost twenty pounds in weight, felt weak, often had headache and cramps in the legs and fingers. There was no constipation, nor jaundice.

Past History.—Typhoid fever eighteen years ago. Six years ago had attacks of chills, fever, vomiting, and "stomachache," recurring at intervals of weeks and months, and was told that she had malaria. Five years ago was in bed with a similar attack accompanied by pain in the right side. Has never been free from slight pain ever since. There was no history of jaundice.

The family history was negative.

Status Præsens.—Patient middle-sized, with well-developed skeleton, flabby muscles, and reduced panniculus adiposus. The visible mucous membranes not anemic, nor icteric. Abdomen showed no distention. A small area in the right epigastric region was resistant and tender on palpation. Border of liver not palpable, spleen not enlarged, kidneys not palpable, appendicular regions not tender, rectal examination negative. Heart and lungs normal. There was no elevation of temperature. No symptoms referable to the central nervous system were present, with the exception of exaggerated knee-jerks.

We made the diagnosis of obstruction of the duodenum by gallstones, and advised that the patient be placed in a hospital for further observation with a view to early operation. Accordingly the patient was placed in the private wards of Roosevelt Hospital in charge of Dr. Joseph A. Blake, whom I wish to thank for skillfully executed operation and careful after treatment of the patient. In the hospital we proceeded to strengthen our diagnosis and obtained the following data: July 12, gastric analysis (fasting stomach); quantity expressed 60 c.c. free HCl 40, total acidity 76, combined acid 18, no lactic acid, no bile, no blood, no Boas-Oppler bacilli. July 14: Ewald's test meal, quantity expressed 60, free HCl 38, total acidity 72, loosely combined acid 16, fair starch digestion only. Blood examination: leucocytes 11,700, red blood cells 6,200,000, hemoglobin 100, color index 80. Differential blood count: polynuclear neutrophiles 65 per cent., lymphocytes 28 per cent., large mononuclears 1 per cent., eosinophiles 6 per cent. Urine was normal on admission, while on July 15 it showed strong indican reaction. The greater curvature of the stomach when inflated with air was found to lie three fingers below the umbilicus.

If we summarize the data we obtain the following picture. Data obtained from the history: (1) typhoid fever 18 years ago, (2) attacks of chills, fever, and abdominal pain six years ago, (3) fever, vomiting and pain in the right hypochondrium one year later, (4) slight but constant abdominal pain ever since, (5) absence of jaundice, (6) frequent vomiting in the last ten weeks, (7) general abdominal and epigastric pain, (8) sensation of contraction and of temporary mass in the epigastrium, (9) loss of weight, (10) cramps in the legs and fingers. Data of physical and laboratory examinations: (1) mass like resistance to the right of the epigastrium in the region of the liver, (2) position of the greater curvature of the stomach without existing dilatation, (3) absence of jaundice, (4) hyperacidity, (5) relative polycythemia, (6) strong indican reaction found once after preliminary washing of the stomach and irrigation of the bowel.

The existence of gastric ulcer was suggested, but the vomiting had no relation whatever with food, the epigastric pain was constantly present, there was no stagnation of stomach contents, and therefore no spasm of the pylorus. The absence of stagnation, the hyperacidity, the immovable mass with the absence of any cachexia spoke against the existence of cancer. Neurasthenia alone was of course not to be thought of in the presence of the above serious picture. The periodical vomiting, the resistance in the liver region, and the sensation of peristalsis felt by the patient, although we had no physical signs of it, made the diagnosis of obstruction of the bowel probable at our first examination. The absence of meteorism, the peristalsis, and the strong indican reaction spoke for the small bowel as the seat of the obstruction. As all the physical signs were in the region of the liver the bowel involved could only be the duodenum, while the absence of bile in the vomitus and in the contents of the fasting stomach placed the exact site of the trouble above the papilla of Vater.

This constructive diagnosis was corroborated by the history of attacks of pain in the right hypochondrium with vomiting, which made the diagnosis of gallstones much more probable than "malaria," especially as the patient had gone through an attack of typhoid fever some years ago. We decided that the cause of the obstruction could only be a gallstone, and diagnosed the case finally as cholelithiasis, with obstruction of the duodenum due to a calculus above the papilla of Vater. The patient was operated upon by Dr. Blake on July 15, and his report of the surgical aspect of the case follows.

Dr. Blake's Report.—Operation: cholecystectomy duodenorrhaphy, gastrojejunostomy (posterior). Incision: vertical at first through rectus sheath, oblique extension through rectus later. Pathology: the gall-bladder was crowded with small faceted stones and bound fast by adhesions to the pylorus and second portion of duodenum. Dense adhesions bound gall-bladder to posterior abdominal wall. There was an ulcerated track coated by firm adhesions from gall-bladder into duodenum. One big stone and a number of small stones were found in a pocket in the wall of the duodenum. The ulceration causing a large amount of scar tissue on outer wall of duodenum had resulted in almost complete stenosis of the same. There were no stones in the common duct; stomach showed merely distention and a fairly marked degree of gastroptosis.

The following procedure was employed: a difficult cholecystectomy was done after much dissection of the numerous adhesions which were found obliterating the normal anatomy of the structures. Duodenum was freed from gall-bladder and was found to leak slightly; it was accordingly opened at ulcerated area and several gallstones removed. The hole was closed by double Lembert suture. Peritoneal toilet: everything sponged dry and clean, and then wound incision extended down a short distance. A posterior gastroenterostomy with short loop was done by suture method. A piece of gauze tampon with rubber tissue on outer surface was then introduced into hepatorenal angle and wound approximated about it in layer sutures. Dressing: gauze, straps, cotton, bandage. Anesthesia: gas with ether. The postoperative period showed rises of temperature for a few days after the operation, highest 102.2° on the second day, traces of albumin and granular casts soon clearing up. Patient discharged August 16, cured.

TREATMENT OF EPITHELIOMA AND CARCINOMA OF THE MUCOUS MEMBRANE.

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The results of operation in this class of cases have so far been rather disappointing when compared to the same conditions existing in the skin and subcutaneous tissues. The same might be said of cancer of the tongue when it was not considered necessary to tie the lingual artery previous to the removal of the diseased area. On the other hand in cases in which the artery has been tied on the side corresponding to the part of the tongue involved, previous to the removal of the ulcer or tumor, the results have been more encouraging. Now if, instead of an epithelioma of the tongue, the case is one of the mucous membrane of the cheek or lip, and a radical operation is performed, the recurrence takes place with the same degree of certainty and the same vitality as in the case of epithelioma of the tongue when the lingual artery was not tied previous to removal.

Every operation of this kind causes a certain amount of local irritation or reaction. Irritation to any part means increased blood supply, increased blood supply means increased function; therefore, the irritation causing this increased blood supply stimulates the function of all the cells in the surrounding tissues. If in these tissues there still remain a few malignant cells hidden away in the recesses of the lymphatics they, like the rest, are stimulated. But, unlike the normal cells of the tissues, the malignant cells, being embryonic in character, not only multiply more rapidly, but increase in that one characteristic common to all malignant cells, viz., invasion and destruction of all the tissues in their path.

By far the most common example of irritation and therefore increased blood supply to the part, as the cause of increased malignancy of a slowly growing malignant ulcer, is the application of an arsenic or any caustic plaster to a rodent ulcer. Practically the same thing occurs when radium is applied to a cancer of the mucous membrane for too long a time, thereby obtaining a caustic effect similar to that of the now somewhat antiquated cancer plaster.

If, instead of simply doing a radical surgical operation and closing the exposed part by suturing the edges, the wound is left open so as to obtain free drainage and the *x*-ray is applied daily, we have what is known as "the open-method treatment," which is well adapted to the treatment of superficial malignant growths, especially in those parts of the body where the reaction or irritation does not cause the increased blood supply that naturally follows an operation on a mucous surface. Although the wound may be drained and the *x*-ray used, the increased blood supply causes such a rapid recurrence in the mucous membrane that the tumor may, in spite of drainage and the ray, persist in its growth because the superabundant blood supply to the embryonic cells remaining in the tissues in all probability causes a multiplication of new cells out of all proportion to those destroyed by the *x*-ray and drainage.

So far as the blood supply to any malignant tumor is concerned it is generally conceded that in inoperable cases the simple tying off of some of the main arteries supplying the tumor not only retards the growth but also relieves the pain and suffering until a new circulation is established.

If then, in cases of malignant growths of the mucous membrane, the operator first does a radical operation and then makes an incision through the mucous membrane well down to the basement membrane and well out from the margin of the wound, carrying this incision completely around so as to cut off the circulation of the entire area, except that from the basement membrane, he will by this means starve rather than stimulate all the cells for a short time. Having carried out this suggestion of starving the cells, whether malignant or normal, which are left after the radical operation, by means of the incision just mentioned, one can further guard against recurrence by keeping the wound open and thus obtain drainage and at the same time expose the whole part to the *x*-ray daily until the wound is healed.

Mobility of the Kidney.—At a recent meeting of the Medical Society of London, Hector Mackenzie defined a movable kidney as one in which the examiner is able to get completely above the upper end of the organ. If he is able to feel the greater part of it, but unable to get above it, it is a "palpable" kidney. In 2,801 women of all ages, Mackenzie found the kidneys "palpable" in 16 per cent. and "movable" in 18.4 per cent. In 1,067 males 2.3 per cent. had "palpable" and 1 per cent. "movable" kidneys. Kidneys are often abnormally movable without giving rise to any inconvenience, and the majority of "movable" cases require no treatment directed to that condition. The author thus describes his method: The patient lies on the couch perfectly flat on the back, the head as low as the shoulders, and the legs extended. The examiner sits on the right of the patient when examining the right side, and on the left when examining the left. The examiner first gently palpates the right side of the abdomen with the right hand from below upwards. If he finds all normal, he then places the left hand behind under the back below the last rib, and makes firm pressure upwards; the right hand is then placed flat on the abdomen in front, and palpation is made between the two hands; often the kidney can then be felt between them. The patient is at this stage asked to take a series of long deep breaths, and the lower end of the kidney will then likely be felt to descend with inspiration. In cases where there is abnormal mobility you feel the kidney descend so far that you can slip the upper border of the right hand above the upper end of the kidney. By putting forward the thumb of the left hand you can then fix the kidney in its descended position, and release the right hand, which can be employed to palpate the whole of the organ, and determine the extreme limits of its mobility. When you remove the thumb of the left hand the kidney can be felt to slip back into its position. A similar investigation is made on the left side, the hands being reversed.—*British Medical Journal.*

Pernicious Vomiting of Pregnancy.—J. Whitridge Williams declares that the treatment in a given case of vomiting in pregnancy should depend upon the variety with which one has to deal. Any existing abnormality of the generative tract or ovum should be remedied as far as possible. In the case of hydramnios or hydatidiform mole pregnancy should be promptly terminated. If the vomiting is of the toxæmic variety abortion should be induced. After the uterus has been emptied, the patient should be given abundant saline injections by the rectum or subcutaneously if the former are not well borne. The stomach should be washed out occasionally by a weak solution of sodium bicarbonate if vomiting is persistent. The patient should not be fed by mouth. Even ice should be withheld until the vomiting ceases. Reliance should be placed upon the salt infusion and enemata and the use of rectal feeding. In neurotic cases a vigorous moral lecture may prove all that is necessary. In other instances of this kind the patient should be told that her condition will not have a fatal termination. Some harmless remedy should then be given with the most minute instructions concerning the character of the food and the manner in which it should be taken. If suitable treatment is not followed by improvement within three or four days, the patient should be removed to a hospital for a rigorous rest cure. The majority of patients, however, do not demand drastic measures, but begin to improve within a week. The writer believes that the induction of abortion will become necessary less and less frequently, being reserved finally almost entirely for the cases of toxemic vomiting.—*Bulletin of the Johns Hopkins Hospital.*

MEDICAL RECORD.

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TAINTED MILK SUPPLIES.

BULLETIN No. 41 of the Hygienic Laboratory of the Public Health and Marine Hospital Service, issued a few weeks ago, is a volume of much greater size and of more popular character than most of the scientific works constituting this valuable series. It has 750 pages and is on the subject of "Milk and Its Relations to the Public Health." There are twenty-one papers in the volume, written by experts, in addition to an introduction by Surgeon-General Wyman, the whole constituting a most important contribution to the vital question of public milk supplies. The investigation of which this is a report was primarily one of the milk supply of the District of Columbia, but its scope was subsequently enlarged, and the investigation was made of such a character as to be of assistance to health officers elsewhere in their struggle to prevent the wholesale poisoning by infected milk of the communities under their charge.

The conviction that is forced upon the reader of these interesting and startling reports by men who are writing, not to cause a sensation, but to state facts, is that the "jungle" as a disseminator of disease is as nothing compared with the dairy. The thought of eating meat prepared under the conditions that prevailed at one time in Chicago and that still prevail in other cities whence emanated much pharasaical condemnation of the Chicago methods, may not be pleasant, but the actual danger to health from this cause is almost negligible when we consider the morbidity and the mortality directly traceable to milk from the ordinary farm or even from many a so-called model dairy. Dr. John W. Trask of the Marine Hospital Service gives in this Bulletin a tabulated report of 500 epidemics of typhoid fever, scarlet fever, and diphtheria caused by contaminated milk. These epidemics were only a few of those which have been reported and are accessible in the literature, and how many there may have been in the past which were never reported or the origin of which was never found can only be imagined. In addition to this, a report by Dr. Anderson shows the part which infected milk plays in the dissemination of tuberculosis. He examined 272 samples of the market milk of Washington, supplied by 104 dairies, and found that 6.72 per cent. of the samples contained virulent tubercle bacilli, and of the dairies there were 11 per cent. the milk from which contained these microorganisms. One institution for children was found to be feeding its inmates on milk which caused tuberculosis in guinea pigs. Dr. Mohler's investigation led him to the conclusion that probably 25 per cent. of all the cows supplying milk to the District of Columbia are tuberculous.

The facts presented in these and the other papers included in this Bulletin only emphasize the necessity of a more thorough supervision of the sources of the milk supplies of our cities and demonstrate the present impossibility of adequate supervision when 35,000 farms and dairies contribute to the supply of a city such as New York. While recognizing the excellent work of the Milk Commission of the Medical Society of the County of New York, the requirements of which Commission are acknowledged to contain all the essential rules for the production of pure milk, the conclusion arrived at by most of the writers is that the only safety in the case of large cities lies in pasteurization. As Dr. Lumsden says, in speaking of the prevention of typhoid fever, and his remarks are applicable of course to the prevention of tuberculosis and other milk-borne diseases: "The destruction of infection in milk at the present time seems to be the cheapest and most practical method to prevent the spread of typhoid infection in the milk supply of cities. In exceptional instances when a dairy receives its supply of milk from only one or two farms over which a thorough supervision may be exercised, efforts to prevent the infection reaching the milk may be attempted. But for the general supply of cities pasteurization of the milk after it has been placed in bottles or cans for distribution is the best measure. Supplement this with an intelligent supervision over the depots and stores where milk is sold, and milk as a causative factor of typhoid fever in cities would be practically removed." Throughout the Bulletin frequent references are made to the work of Mr. Nathan Straus in the establishment of infants' milk depots for the supply of clean pasteurized milk, and Dr. Wyman, in his introduction, accords special recognition to his "philanthropic and successful efforts."

The MEDICAL RECORD has always advocated pasteurization, under official supervision, as the only practical means of prevention of milk-borne diseases in large cities. It recognizes the fact that this is not the ideal toward which sanitarians should aim, but it regards it as the only solution of the problem as yet offered. Not all the milk should be pasteurized, but only that derived from sources which are not above suspicion, which means the greater part of the milk supplied to every large city. Milk from really "model dairies" which handle only the milk from their own cows and which are inspected at frequent but irregular intervals by the health officials or the agents of voluntary commissions, such as that of the Medical Society of the County of New York, may be safely exempted from the rule of pasteurization. Such milk is undoubtedly a better food than any which has been sterilized or even pasteurized, and we would welcome any method of procuring clean milk, such for example as that described by Dr. North in the MEDICAL RECORD of February 15, which would do away with the necessity of pasteurization. But, as Dr. Rosenau says in his paper on this subject, "we must guard against enemies as long as they exist. We would all like to do away with the necessity for armies and navies, but present conditions

demand their maintenance. The same is true of harmful bacteria in milk; so long as the average market milk is apt to contain these insidious foes, the only protection we have is to destroy them with heat."

THE PERSONAL FACTOR IN DISEASE.

Sir Dyce Duckworth delivered before the Faculty of Medicine of Paris on February 18 an interesting address in which he expressed the belief that too little attention is paid in these days by the Anglo-Saxon and the Teutonic medical world to the diatheses. While acknowledging the great services rendered to medicine by means of properly prosecuted research for the sake of enduring truth and not merely to supply material for publication in journals or contributions to medical congresses and societies, he deprecated the neglect into which the old methods had fallen. It was pointed out that the teachings of the clinical laboratory are the proper study of the physician, and that far more of these are needed than are provided. As a matter of fact the clinician is always in face of the personal factor in each patient. The physiologist has an animal or some definite organ of an animal, but rarely a man before him, and consequently the problems are not the same, and never can be. Again man himself differs widely in habits or types of body; there are the arthritic, the scrofulous or lymphatic, the nervous, and the bilious, and it therefore becomes a question relating to the soil or tissue-proclivity of the particular individual that must be considered. The modern investigator occupies himself so greatly with the seed that he quite overlooks the importance of the soil.

The speaker dealt with the arthritic and scrofulous diatheses at some length, and also in relation to diet, for these conditions showed that what was meat for one disease was poison for the other. He declared that in such cases it was not only a question of microbes, but the quality of the tissues, or the soil, as well as the infecting microbe. "The proclivity, the vulnerability, the degree of immunity or resisting power is transmitted as a peculiar vital endowment from early embryonic times to full maturity in the intimate cells and tissues of the individual. In this sense each person is a law to himself, and here we have the *facteur personnel* before us with which we physicians have always to deal." The speaker dissented vigorously from the view that there is no such condition as the scrofulous diathesis, but that every individual presenting the classical features and types hitherto recognized as scrofulous is, from the earliest age, invaded and influenced by the bacilli and toxin of tubercle; in short, that what used to be known as scrofula is really tuberculosis. According to Duckworth the belief is surely bacteriology run mad and he prefers to believe that the so-called scrofulous subjects are born constitutionally feeble with a delicate lymphatic system and thus provide a favorable soil for all varieties of infection. He recognizes in the scrofulous subject the *ens in potentia* in the tuberculous subject the *ens in actu*. Sir Dyce further is of the opinion that it is possible to be scrofulous throughout life without becoming tuberculous and to be arthritically predisposed without becoming rheumatic or gouty in any classical form of these maladies. The blending of these habits of body is the outcome of heredity and tendencies passed on by each parent. Such blendings may be in variable degree according to the greater predisposition of either parent, the male characteristics more commonly reappearing in the female progeny and the female ones in the male.

After referring to what the old physicians described as the nervous diathesis, and to the sufficiently well recognized bilious habit of body, the speaker went on to say that by the light of modern clinical research into the subject of vaccine therapy, fresh knowledge may be gained in regard to the respective inherent properties of the tissues in different individuals, and we may hope in time to learn whether or not there are varying or definite powers of resistance to intruding infective agents.

The address concluded with an earnest appeal to medical men of all countries to shake off the widely spread spirit of incredulity, timidity, and hopelessness in the whole realm of therapeutics. The main business as healers and mitigators of disease was greviously neglected. Sir William Jenner said that there are but two great questions to be answered at the bedside of a sick man—what is the matter with him? and what will do him good? and therefore the progress of bacteriology could never supersede the art of therapeutics. Although this conclusion may be regarded by the Osler school of medicine as scarcely worthy of notice, yet perhaps in the breasts of the majority of medical practitioners it will find a responsive echo.

A NEW PHASE IN THE PATHOGENESIS OF INFECTION.

Recent experimental and clinical studies have thrown much light upon the series of phenomena which we term infection. The old anatomical standpoint of viewing this morbid process has given place to a dynamic interpretation and conception of the changes observed: they are now looked upon as the results of the influence exerted by two sums of living forces upon each other, those of the animal organism upon the one hand and of the infecting excitant of disease upon the other, both possessing to a high degree the power of accommodation to changed circumstances produced by such interaction. However, while this conception expresses the sum total of the phenomena of infection, its various stages are far from being thoroughly worked out; at the same time, recent observations tend to modify many of the accepted explanations that have gained currency in the earlier periods of experimental work.

Thus, in a recent article in *Russkiĭ Vratch*, Nos. 6 and 7, Vol. VII, 1908, Professor A. D. Pavlovsky of the Kieff Bacteriological Institute presents many data that throw doubt upon the usual assumption that the coverings and tissues of the animal body present an impenetrable barrier to the spread of infection while in their healthy state, the invasion of the infective agents of disease occurring only after such tissues are harmed by more or less prolonged action of the bacteria in question. As a result of numerous experiments he shows that pyogenic organisms injected into the joints of animals very quickly spread to the viscera and to the fluids of the body, this process being especially active in the first

twenty-four to forty-eight hours after the inoculation. Like experiments repeated with joints previously inflamed by the injection of alcohol and of turpentine showed marked retardation in this process, and on some occasions its total abolition. The healthy lymph-bathed tissues of the body, therefore, offer open paths to the invading bacteria, the progress of which is arrested only after the local inflammatory reaction of the tissues has had time to assert itself. Similar results were obtained with experimental infection of the pleural cavity and the use of other species of bacteria, such as typhoid bacilli, colon bacilli, etc. On several occasions after subcutaneous injections of tubercle bacilli the organisms were recovered within twenty-four hours in the urine. These results have prompted Dr. Pavlovsky to add to our conception of infection another stage, early in time and short in duration, during which the infective agents spread to the circulatory and excretory organs of the body long before the formation of manifest pathological foci. He has termed this stage in the pathogenesis of infection "the period of distribution." After this period the primary focus may no longer serve as a source of infection, and the fate of the body depends upon the relative values of its cellular and chemical defences and the virulence of the bacterial excitant of disease; either the tissues of the organism succeed in totally eliminating the invaders by way of the usual excretory channels, or succumb to them, allowing the formation of demonstrable pathological foci and thus making the infection fully manifest.

Besides the high theoretical value of these views, they are of interest in throwing light upon the clinical course of many infective diseases. Combined with the well-known possibility that bacteria may long remain latent in the body after being transported to the various organs, this phenomenon of early elimination of bacteria from a local focus of growth may give the correct explanation in many cases of so-called "cryptogenic sepsis," in which general disease of the organism is noted without any discoverable source of infection. Moreover, some of the author's results suggest that like distribution of bacteria may take place from body surfaces normally inhabited by microorganisms, in consequence of slight changes in their coverings. If this were shown further, the views of such workers as Behring, Calmette, and others in reference to the intestinal origin of tuberculosis in children would receive substantial experimental support.

The Ray Brook Sanatorium.

It is a matter for extreme regret that the trustees of the Ray Brook Sanatorium for Incipient Tuberculosis should have done anything to cause further criticism of that excellent though unfortunate institution. Friction or bad management or both have characterized its history and have raised doubts as to the wisdom of establishing it, and we can ill afford doubts now that all sanatoriums are receiving unwise opposition. It is no doubt true that home treatment can cure incipients properly situated, but there are probably more cases which should be removed from the conditions which have injured them, and places must be provided for them. It was hoped that by placing the employees at Ray Brook under the civil service law, it would be possible to prevent the personal or political favoritism which has been the bane of other State sanatoriums from which splendid men have been summarily discharged to the injury of efficiency. It is now said that the Civil Service Commission is not able to select a competent superintendent and that the trustees have determined to evade the law and appoint a man whom they consider better than any other applicant, even going to the extent of changing the law to make their selection eligible to compete. Of course it is evident that they are doing what they think is best for the welfare of the institution, but it is to be remembered that a certain warm place is paved with good intentions. That is, a desire to do right in a wrong way does more harm than good, and the end does not always justify the means. In this case it is deplorable that they did not decide to abide by the strict letter of the law, for the impression has been gained by many that the examination for superintendent was disingenuous and a mere matter of form. There is some truth in the claim that the trustees are better able to judge of qualifications than an alien commission, but it is a system which has given rise to such abuses that publicists have almost universally condemned it and are advocating an extension of civil service methods. Should they succeed in overriding the law, then it will be but a step to discharge employees who have incurred personal enmities, and the friction will continue indefinitely. Better by far to take a man who has proved his fitness for the place, so far at least as professional qualifications are concerned, even though the trustees may not consider him the best possible choice, than to have run the risk of the present unpleasantness which may indeed have far-reaching consequences.

The Overcrowding in the New York State Hospitals for the Insane.

This is a theme which has attracted attention and consideration many times during the last five years. The certification of most of the State hospitals for the insane is fictitious and is overstated at least six hundred beds in a total capacity of 23,525 beds in the thirteen hospitals. The number of patients in the hospitals at times has been over two thousand in excess of this fictitious capacity. The overcrowding is due entirely to the increase in the insane population of the Metropolitan district. With the exception of the hospitals at Buffalo and Utica, no hospital north of New York City can be filled without making transfers from Manhattan. In other words, the nine hospitals north of New York City can more than take care of themselves, and would have many empty beds were it not for the teeming insane population of the Greater City of New York. The hospitals at Kings Park, Central Islip, Flatbush, and Wards Island, New York City, are overcrowded to an extreme degree and no relief can be found until a new hospital is erected in the southeastern part of the State. A bill was passed by the legislature of last year directing the State Commission in Lunacy to obtain a site in this part of the State for such a hospital, and the Governor in his annual message strongly urged that this be done. A bill was introduced in each house of the Legislature last week providing for an appropriation of $119,250 for the purchase of a site comprising 408 acres at Congers, Rockland County, New York. This site offers remarkable advantages and is in almost all respects ideal. This bill will undoubtedly become a law promptly and the Commission will be empowered to commence at once the erection of an institution with a capacity of 2,500 or 3,000 inmates.

The Transplantation of Formaldehyde-fixed Blood-Vessels.

The striking and epoch-making experiments of Carrel have opened up a new field of surgical endeavor, the far-reaching results of which are hardly appreciated by the casual observer. The demonstration of the successful suture of blood-vessels has brought within the range of possibility, if not immediate probability, not only the cure of aneurysm by extirpation of the dilated portion of the vessel and its replacement by a segment of a vessel from one of the lower animals or by a diversion of the blood stream through a neighboring artery or vein, but even the transplantation of an entire organ to serve in the place of one rendered useless by disease. A recent experiment of Dr. C. C. Guthrie of St. Louis, reported in *Science* of March 20, has shown that it is not even necessary to use a fresh vessel for successful implantation. He removed a segment of the vena cava of a dog and kept it in a 2.5 per cent. formalin solution (in 0.9 per cent. sodium chloride solution) for sixty days. He then cut a segment 0.75 cm. in length from the common carotid of another dog and filled the gap with this formalin-fixed vena cava. Three weeks later he examined the artery and found the segment in place, somewhat elongated and of smaller diameter; it pulsated strongly and the circulation through it was perfect. Before being sutured to the artery, the vein was removed from the formalin solution, washed in dilute ammonia, dehydrated in absolute alcohol, and impregnated with paraffin oil.

Rectal and Axillary Temperatures.

That the difference between the temperature of the axilla and of the rectum is likely to be considerable in cases of fever is well known, and on this account it has come to be an accepted rule that whenever an accurate temperature record is of importance the determination shall be made by rectum. Some surgeons, such as Madelung and Lennander, have asserted that in cases of suppurative peritonitis the customary difference between the temperatures obtained in these two ways was increased, sometimes amounting, according to the former, to as much as 2.7° F., and that this fact might be made use of in diagnosis. Other observers have contested this view and have suggested that the differences noted were probably due to the fact that it is difficult with restless patients to obtain reliable axillary readings. This matter has been made the subject of investigation by Propping (*Münchener medizinische Wochenshrift*, March 10, 1908), who, as the result of observations on himself under varying conditions, and on a number of patients suffering from febrile disorders, reaches the conclusion that both in sickness and in health the amount of difference depends on the condition of the axilla, and when the disparity is great this is the result of an abnormally low axillary temperature, being inversely proportional to the activity of heat formation in the muscles. Large differences, *i.e.* of more than 1° C., occur not only in peritonitis, but also in other febrile diseases. When observed in peritonitis the symptom indicates a severe infection and is therefore a sign of grave omen. While the practical value of such evidence is perhaps not very great, as there are usually other indications of more importance, Propping's studies serve to emphasize the necessity for resorting to the more troublesome and disagreeable method of temperature determination in all cases whenever anything more than a slight indisposition is in question, and always when the diagnosis is uncertain.

A Cutaneous Reaction with Diphtheria Toxin.

While the practical value of the new tuberculin reactions by cutaneous inoculation and instillation into the conjunctival sac is still undetermined, it is evident that the field opened up in this direction is a wide one that promises to facilitate further advances in the intricate subject of immunity and the defences against disease. Some of the possibilities of this nature are hinted at by Schick, who has been investigating the effect of making cutaneous inoculations with diphtheria toxin. In a paper in the *Münchener medizinische Wochenschrift* of March 10, 1908, he says it is possible to obtain in this way reactions perfectly similar to the cutaneous tuberculin lesions, though the test is not a specific one, since a large proportion of healthy infants and older children give a positive result. Various theoretical considerations lead Schick to believe, however, that the procedure may be used to advantage in other ways, for example, for the investigation of the clinical aspects of the disease and also as a means of testing the strength of diphtheria toxin without having recourse to the roundabout and not altogether satisfactory method of animal inoculation.

News of the Week.

Site for the New Custodial Asylum.—At the meeting of the Medical Society of the County of New York held on March 23 a resolution was adopted urging the members of the society to support Senate bill No. 636 and Assembly bill No. 1215, which provide for an appropriation of $188,575, for the purchase of a site for a new Eastern New York State Custodial Asylum near Haverstraw, Rockland County. It is represented that the existing State Custodial Institutions, located at Rome, Syracuse, Newark, and Sonyea are overcrowded, so that a new asylum is urgently needed, while the site proposed is not expensive and has the advantage of accessibility from New York City.

Progress in the Sanitation of the Philippines.—In an editorial appearing in the *Manila Times*, January 30, 1908, Dr. Victor G. Heiser, Director of Health, is credited with having been largely instrumental in the great improvement that recent years have seen in health conditions in the islands. Among the benefits enumerated are the following: The high percentage of cholera cases saved, the entire eradication of smallpox in many provinces that used to pay their toll of hundreds of thousands annually, the improvement in surgical statistics, the practical extirpation of bubonic plague, the reduction of infant mortality, the pronounced decrease in general mortality, and the vaccination of millions.

Health Commission for Lake Michigan.—Health Commissioner Dr. William A. Evans of Chicago has suggested that a commission be created representing the cities on or near Lake Michigan, their states, and the federal government, to study and report on the present use and future possibilities of the lake as a reservoir for both water supply and sewage disposal. The formulation of his plan is in part a result of cooperative work being carried on by the various health officers forming the Chicago and Suburban Health League. Through discussions at its meetings it has been concluded that the existence of typhoid fever in this vicinity is traceable to the large amount of sewage emptied into the lake. Dr. Evans' plan provides for the appointment of members of the commission by the mayors of Chicago, Milwaukee, Grand Rapids, Hammond, Whiting, and East Chicago, and by the governors of

Illinois, Wisconsin, Michigan, and Indiana. Two members, representing respectively the War Department and the Marine Hospital Service of the National Government, are also suggested. Mayor Busse of Chicago is expected to submit this matter to the council soon.

XVI International Medical Congress.—Professor Emil Grosz of Budapest, secretary-general of the sixteenth international medical congress, which is to be held in Budapest, August 29 to September 4, 1909, has sent out the preliminary program of the congress. There will be twenty-one sections and a considerable list of papers has already been pledged. The president of the National Committee for the United States is Professor J. H. Musser of Philadelphia. The secretarial office of the congress is Esterházy-Utcza 7, Budapest VIII, Hungary.

Results from Free Antitoxin. According to a report issued by the Pennsylvania State Department of Health 4,693 cases of diphtheria among the poor were treated during the year 1907 with free antitoxin, with 371 deaths, a percentage of 7.9 as against a percentage of 11.13 in the year 1906. It is estimated that this represents a saving of 1,506 lives. In addition immunizing doses of antitoxin were administered to 3,015 persons, of whom only 34 contracted diphtheria, and of these only 2 died. These results have been accomplished through the establishment of numerous distributing centers in convenient parts of the State, from which antitoxin can be obtained without expense by families certified by attending physicians as too poor to pay.

International Trachoma Prize.—The Royal Hungarian Minister of the Interior offers the sum of 1,000 crowns as a prize to the author of the best work on the etiology of trachoma. All essays, whether in manuscript or published for the first time in 1907 or 1908, will be eligible for the competition, provided they are in English, Hungarian, French, or German, and that they are received on or before December 31, 1908, by the Minister of the Interior. Address: Belügyministerium, Budapest, Hungary. The jury will be appointed by the minister, and the winner will be announced at the inaugural session of the sixteenth International Medical Congress to be held in Budapest, August 29 to September 4, 1909.

Philadelphia Municipal Appointments.—Dr. S. S. Woody has been appointed chief resident physician at the Municipal Hospital of Philadelphia, in succession to Dr. B. F. Royer, resigned. Dr. Edward K. Mitchell has been appointed third assistant resident physician on the non-salaried staff at the Municipal Hospital to succeed Dr. Chas. J. Swlam, promoted to second assistant resident physician. Dr. Henry J. E. Newman has been appointed registrar to the Philadelphia General Hospital, in succession to Dr. Charles M. Montgomery, resigned.

A Banquet in Honor of Koch.—A banquet at which Professor Robert Koch is to be the guest of honor will be given under the auspices of the German Medical Society at the Hotel Waldorf-Astoria on April 11. Dinner cards can be obtained from Dr. Geo. Mannheimer, 60 East Fifty-eighth street. The price is $7, including wine.

The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered by Professor Frank B. Mallory, of Harvard University, at the New York Academy of Medicine, on April 4, 1908, at 8:30 P.M. The subject will be "The Results of the Application of Special Histological Methods to the Study of Tumors." The lecture will be illustrated and all interested in the subject are invited to attend.

Medical Society of the Missouri Valley.—The semi-annual meeting of this association was held in Lincoln, Neb., March 19-20, under the presidency of Dr. W. F. Milroy of Omaha. The address in medicine was delivered by Dr. C. H. Hughes of St. Louis.

The American Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held at the Academy of Medicine on April 9, at 8:30 P.M. Papers on the Social Evil will be read by Dr. S. A. Knopf and Mr. Frank Moss.

American Proctologic Society.—The tenth annual meeting of this society will be held in Chicago June 1 and 2, 1908, under the presidency of Dr. A. Bennett Cooke of Nashville, Tenn. The secretary is Dr. Lewis H. Adler, Jr., of Philadelphia.

Confederate Army Surgeons.—A reunion of the surgeons who served in the Confederate army or navy is to be held in Birmingham, Ala., in June, under the auspices of the Jefferson County Medical Society.

International Congress of Thalassotherapy.—The fourth International Congress of Thalassotherapy is to be held in Abbazia on September 28, 29, and 30. The general secretary is Dr. A. Oliven, Berlin.

Dorchester Medical Society.—An organization with this title was formed in Dorchester, Mass., on March 25 with the following officers: *President,* Dr. Madison T. Thurber; *Vice-President,* Dr. Robert M. Merrick; *Secretary and Treasurer,* Dr. H. F. R. Watts.

Abilene County (Kan.) Medical Society.—At the meeting of this society held in Abilene on March 17 the following officers were elected: *President,* Dr. P. B. Witmer; *Vice-President,* Dr. S. S. Steelsmith; *Secretary,* Dr. S. Nichols; *Treasurer,* Dr. Klingberg.

Tenth Councilor District (Ark.) Medical Society.—At the meeting of this society, held in Fort Smith on March 20 officers were elected as follows: *President,* Dr. G. F. Hynes of Fort Smith; *Vice-President,* Dr. Young of Springdale; *Secretary,* Dr. D. R. Dorente of Fort Smith; *Treasurer,* Dr. Bourland of Van Buren.

Medical Inspection of Schools.—The medical inspectors of schools of Chicago examined 6,887 pupils during the week ended March 21, and excluded a total of 217 on account of contagious diseases. The principal causes of exclusion were as follows: Chicken-pox, 41; measles, 41; whooping cough, 6; mumps, 4; scarlet fever, 9, and diphtheria, 1. School children to the number of 827 were vaccinated by the inspectors.

Stony Wold Sanatorium. The sum of $1,200 was realized at a bridge tournament held last week at the St. Regis for the benefit of this institution.

Christian Science Death in Chicago.—The Chicago Board of Health is investigating the death of the wife of a naval officer who died under Christian Science treatment after an illness of thirty days without medical care.

Yacht Quarantined.—Owing to the presence on board of two sailors ill with symptoms not unlike those of plague the steam yacht *Wakiva* from South American ports was fumigated and kept in quarantine pending bacteriological examinations by the Health Board.

Plague in Ecuador and Venezuela.—Numerous cases of plague are being reported from Guayaquil

and La Guayra and a quarantine against these places is being enforced in the canal zone.

Against the Antivivisection Bills.—A considerable delegation of medical men, comprising some of the best known members of the profession in this city, went to Albany last Wednesday to protest before the joint Judiciary Committees of the Senate and Assembly against the antivisection bills under consideration.

College Closed Owing to Diphtheria.—As the result of an epidemic of diphtheria, Concordia College, at Hawthorne, in the northern section of Westchester County, has been closed, and the eighty students have been sent to their homes.

New York Infant Asylum.—Plans have been filed for enlarging the four-story building of the New York Infant Asylum, at the corner of Amsterdam avenue and Sixty-first street, by the addition of three new stories, at a cost of $30,000.

Vacancies in Genitourinary Dispensary.—There art two vacancies at the Genitourinary Clinic of the West Side German Dispensary, Tuesday, Thursday and Saturday evenings, 7:30 to 8:30. Applicants may communicate with Dr. Abr. L. Wolbarst, 105 East Nineteenth street.

Obituary Notes.—Dr. John A. McIlwain of Mount Tabor, Or., died on March 18 at the age of thirty-eight years. He was graduated from the University of Pennsylvania Medical School in 1891 and practised for a time in Kansas City, Mo. He had been a resident of Mount Tabor for about three years.

Dr. Herbert O. Pease of Springfield, Mass., died on March 23 at the age of fifty-two years. He was a native of Monson and was a graduate of Dartmouth, receiving his medical degree from the New York University Medical School in 1882, since which time he had practised in Springfield.

Dr. Robert F. Burleigh of South Braintree, Mass., died on March 22 at the age of forty-six years. He was a native of New Hampshire, but had practised in Braintree for about ten years, and was a member of the Board of Health of that place.

Dr. Anne A. Wilson of Washington, D. C., died on March 14 of diabetes at the age of fifty-one years. She was a native of Baltimore, and received her medical education in several European universities. In 1894 she returned to this country and began practice in Washington, where she held a prominent position in medical and social circles.

Dr. John Bryant of Boston, Mass., died on March 20 at the age of forty-seven years. He was born in Boston, the son of Dr. Henry Bryant, and was graduated from Harvard in 1873, receiving his medical degree from the Harvard Medical School five years later. Dr. Bryant devoted his life and professional activities largely to charity and philanthropical work, and accomplished much in alleviating the condition of the working classes. He was an enthusiastic yachtsman and took part in a number of the America Cup races.

Dr. D. M. Finley of Cascade, Ia., died on March 16 at the age of sixty-nine years. He served through the Civil War, and then began the practice of medicine in Canton, Ia. About thirty years ago he removed to Cascade.

Dr. George F. Butman of Somerville, Mass., died on March 22 at the age of seventy-one years. He was born in Boston and was graduated from Harvard Medical School in 1864. He practised in Wrentham until fourteen years ago, when he retired and removed to Somerville.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described with remarks on their appropriate treatment.

——————— Indiana.

Dear Doctor:

I met at the shore this summer one of your patients, who told me how much relief she had got from following the plan of treatment you outlined for her in New York last winter. She made me promise that I would write to you and describe my symptoms and ask you whether or not I may look forward to any relief from the suffering which for twenty years I have borne with little fortitude.

When I was fifteen years old, parenthetically, I am now 37, happily married and blessed with three children, I began to have headache. Periodically since then, first once a month, later every two weeks, I have had attacks. I was nearly 14 years old when I first menstruated. When I have a headache at the time of my period it is more intolerable, but aside from this I have never been able to satisfy myself that there is any relationship between them. They have so overwhelmed me that I am "out of commission" for nearly a week. The first two or three days from the pain and then another day from the prostration which now always follows. When the headache first came the pain was located between the right eye and the temple. From there it would gradually spread over the right side of the head and sometimes extend even to the other side. The truth is, that after the pain has been present for a few hours I am so miserable and unable to give thought to anything save to the struggle to live through the attack, that I can't say just where the pain is or is not. When the attacks are severe they are apt to be preceded by nausea and vomiting. This occurs less frequently now than formerly. Sometimes, also, before an attack, I experience an indefinable sadness and depression not attributable to anything in my surroundings, which occasionally lasts as long as two or three days. At other times before the attack I experience a very peculiar disturbance of sight. I am not sure that it should be so described, for the sight does not seem to be really affected. What occurs is that just before the pain sets in or, simultaneously, there seems to be a small black spot which floats around in my field of vision. Every time I move my eyes it moves too. At times when the pain in the head comes on with unusual severity and rapidity this black dot seems to be transformed into a small ball of light. On a very few occasions this light seems to have had a zig-zag movement. Lately I have had, in addition to headache, a great deal of trouble with digestion, gas forms in the stomach and intestines, and I think that it must be that that causes so many queer sensations in my abdomen, fluttering, distention, sometimes so great as to necessitate removal of stays and loosening of waistbands. I have also got very much run down and nervous. I cannot do the things socially or in my family that I could a few years ago, for if I do I am so used up that I am sure to get a headache. Perhaps I have said enough to give you an idea of my case, but I must tell you what has been done for me, or rather, how I have been done by your confrères.

It is a long story, longer even than that which I have written about myself. When I first had headaches my mother took me to our family doctor, who gave me a new medicine every time I went to him and who finally acknowledged he could not help

me. He consoled me, however, by saying that I would grow out of them, and on one occasion I overheard him tell my mother that they would probably disappear after I married. I won't say that I accepted the first man that proposed because of this knowledge, but when I did accept one he was lacking the magical possession that was to cure me. I had fewer headaches the first two years after I was married than before, but after the baby was born they came with the old time frequency, and I took a great many medicines, but without relief. Then the doctor discovered that I had a slight tear of the neck of the womb, from which he said the headaches were reflex, so I was curetted and repaired. But I had headache just the same after I got about. The next year I was sent to Chicago to have my eyes looked after and the doctor there was sure that my headaches came from astigmatism and "improper implantation" (those were the terms he used, so I thought I was a speciment though now I know I was a farm—and he a "farmer") of the muscles, so he decided to plant them over. He did. I was sorry for myself, and I have not got over it yet.

About a year later one of your New York men, an individual with a manner, a white waistcoat and an oracular way of being laconic, came out to read a paper before the doctors here. He seemed to have brought his tools with him, for he operated upon three of my sex the day after he arrived, and the day following upon me. I had floating kidneys, he said, and they should be anchored. I had been planted, now I must be anchored. I couldn't understand how floating kidneys caused headaches once or twice a month and not at other times, but then the trouble was with me in more senses than one. I shall make no further comment than to say that I am sorry that he came out here to read that paper.

About this time Dr. ——— settled here. No one knew much about him except that he had practiced in Chicago and had been extremely successful there, but the climate did not agree with his wife and he decided to throw off the hold his practice had upon him and devote his life to his wife. This seemed to leave him time to devote himself to practice here, for within a month after he came he was doing nearly all of it. I am no better than my neighbors; I had him. At last I seemed to have found a pillar of strength and a tower of wisdom to tie up to. He was sympathetic and understanding, and he had seen hundreds of such cases among the best families on Prairie avenue, and although it was not a patency of good form to have such headaches in Chicago, they were much more common in the first families than in the newcomers. Such headaches come from the liver. They are dependent upon "insufficient metabolism"—a process which is carried on in the liver. In my case the procedure was insufficient because the capsule of the liver had stuck to that organ in the same way as a veil sticks to your face (our faces I mean) when it becomes wet. I learned to talk the lingo and I was only sorry that I couldn't be present save in the spirit when he shook the sistrum and lifted the veil from the goddess of metabolism. I was ill in bed a long time after this. I don't know just what they did to me then, but the doctor said it was a capital operation. At times he used language loosely, very much as he did my anatomy.

I then decided to give up doctors and bear my cross as best I might. I had whiled away some of the weary hours while convalescing from the last operation by reading the "Power of Silence," and I decided to fill my mind with love, the world beautiful, an abstract God and other pain-preventers and misery-mitigators, and it worked splendidly until the first real headache came, then my idolized trinity was a flash in the pan and there was scarcely a memory of them left. After that a friend of mine, a lady who had been cured of cancer after having been given up by all the doctors, came to see me and told me of her own miraculous delivery and of scores of others, so I was prevailed upon to send for the wonder-worker. He told me that my spine was dislocated and from that the headaches flowed. I can't imagine how he knew this, for he didn't look at my spine or make any examination whatsoever, but he could cure me, he said, in about forty treatments, and as that is what I was searching for, the promise of it even was better than nothing. My spine was an obstinate one and forty interviews only served for a bowing acquaintance, so I took forty more; then I suddenly felt poor in purse and proud in person and decided to give it up. As a matter of fact, I felt better generally after this treatment than I had for some time, but it had no particular effect upon the headaches.

These latter experiences, while causing me to lose faith in the supernatural, did not restore that restful and supreme confidence which I once had in the educated, level-headed members of your profession and which I wish I might have again. I resolved firmly to have no more opinions from doctor or priest concerning the nature of my ailment nor to solicit expressions of opinion as to the course to be adopted to cure it. I need scarcely tell you that this resolution was made in an interval during which I was freer from attacks than usual.

My good intentions (perhaps you will not appreciate my adjective) fell before the demon Pain and I was glad to consult a physician in Cincinnati who had been recommended to my husband. I went to see him and spent a week at a hotel there while he was completing the examinations, which were made with much thoroughness so far as I, a laywoman, could judge. He gave me a test breakfast, then pumped it out and analyzed it. I had too much acid. Heretofore my doctors had found me deficient in things (*they* were lacking in what I considered to be one essential, I thought) so this was quite encouraging to me. Then I had to swallow a ball as large as a marble, of lampblack, which I was assured was inert and then weigh all the food I ate for a certain period, then swallow some more lampblack. I got quite interested in this. Then there were a lot of other examinations to determine my "metabolic coefficient" and my "elimination capacity" and things which I never knew any human being, let alone a woman, had. At last it was decided that the trouble with me was that I was the director of a large manufacturing plant situated in "our midst" engaged in making poison. I was the sole consumer and of course the monopoly wasn't good for me; in fact it gave me headaches. This was a most plausible and alluring explanation, at least so much of it as I was able to understand. I didn't fancy myself very much when I let my mind turn to my occupation, but in reality I didn't have much time to think about anything save the stunts I was obliged to do to get well. I had a green vegetable diet. The word green or the sight of green calls up memories that I would gladly be without. The sight of spinach has the same effect upon me that the odor of garlic, consumed the night before, has upon most people. And so far as baked apples are concerned, well, if it hadn't been that an apple and Newton were responsible for gravitation, I could wish the

apple had never been born. I suppose I must tell you of the "irrigation" too, though I should prefer not to do so. When I hear the word irrigation I have the shivers. When I read of how the deserts of Texas and Utah have been reclaimed and converted into fertile valleys laden with tropical vegetation, blossoms and fruit which rival in their appearance the panorama once seen by mortal eye from the summit of Mt. Pisgah, a silent prayer is registered that irrigation will soon be reserved for such purposes and not applied to the human anatomy. All this time I took disinfectants until I was convinced that my interior was no better than a pest house.

Oh, well, why burden you with more of this, you know I didn't get well. Had it been otherwise I should not be consulting you. Sir Leslie Stephen, in his delightful "Hours in a Library," says everyone should write an autobiography, first, because human documents are always interesting, and second, to explain, if possible, how one can be so dull. I am not aiming for either of them. My inquiry is a simple one. Can I be relieved or must I go on suffering these occasional torments until I am translated? I don't care a fig about the name of the disease, that geniuses have had it, or that it accompanies usually a high order of intellectual or emotional endowment. I know it, your colleagues have told it to me, and it doesn't help me a bit. What I want to know is, what shall I do to be saved, and I cry out with the anxiety and agony of a penitent sinner who sees the traditional hell being adapted for the conveniences of his immediate occupancy.

Yours respectfully,

New York, Feb. 24, 1908.

Dear Madam:

You have had an unfortunate and, I hope, uncommon experience with the guild of which I am a member. Headache is a very common affliction. It has been stated that one person in five is subject to it. This alone indicates that it is the expression of many different diseases and disorders, most of which are curable. For instance, nothing is more firmly established in our art than that headache is often dependent upon defects of the sight apparatus, causing what is called eyestrain. That is why so many patients with headache are benefitted by the ministrations of an oculist. What I wish to convey is, that headache is nearly always the symptom of some disordered condition of the body, and that this disordered condition can usually be relieved, but in your case headache is a disease.

The disorder from which you suffer and which you have described so fully is known to physicians as migraine and to the laity as sick headache. The headache and other symptoms that you have more or less periodically is merely the expression of a disorder which you have all the time. This may be difficult for you to believe when you reflect that you are in excellent health and corresponding spirits in the interval between the attacks, but no one doubts that the unfortunate victim of epilepsy is still the victim of the disease even though his attacks be separated by intervals of many months. In other words, migraine is a constitutional disorder, the symptoms of which occur occasionally. We physicians speak of it as a nervous disorder of degeneracy or deviation. By thus designating it we endeavor to indicate that it occurs in individuals whose evolutionary development has not been sufficiently harmonious to allow the different components of the finished product to so work in unison that the result is a symphony, emotional, intellectual or physical. Such a condition is a defect of heredity and if you will search your ancestry you will find that someone from whom you are directly descended, very likely your mother or grandmother, was similarly afflicted or had some oddity of her mental, emotional or physical makeup that distinguished her from other people. You will gather from this that I lay great stress upon heredity as a potent factor in the causation of so-called functional nervous diseases. Men and women learned in the laws of heredity, and professional biologists tell us of many things in our moral and physical makeup that is the result of reaction to environment, but one cannot have been a neurologist for twenty-five years without having been led to the conclusion that it is heredity, and not environment that contributes materially to his clientele.

All this is very interesting you may say, but what bearing has it upon the cure of your headache? A very great deal, I assure you. If you can gain a conception of the nature of your ailment and the way in which it developed, then you will not be overwhelmingly disappointed when I tell you that the profession of which I am a member is powerless to cure it. We are able to suggest to you certain reforms in your mode of life, in your conduct, in your habits, etc., which, if instituted, will be followed by very great relief. Not infrequently we are able, by correction of certain structural faults of the different sense organs, such as the eyes, nose, ears, etc., to very materially diminish the number of attacks, but we are not able to cure the disorder any more than we are able to give a harmonious blend to the hirsute appendages of the gentleman who has black hair and red beard, or who has one blue and one green eye, or to overcome long prehensile index-fingers, to do away with other signs of disharmonious evolutionary development.

Headache, you know, may be caused by indigestion and constipation, which may be relieved by taking calomel or other aperient. Headache often comes to those who do not eliminate adequately through the skin and through the kidneys, and headaches occur frequently in individuals whose eyesight is poor and who have other abnormalities of their visual apparatus. Headaches occur in persons who have obstruction of the nasal passages and of the hearing passages, and headaches occur in individuals who are "run down" and exhausted from innumerable causes. I should not particularize them did I not wish to say that these organs are oftentimes a little off the key, as it were, in individuals who manifest that sign of disharmonious development known as migraine, which you have. Therefore, one of the first things that a migrainous individual must learn about himself is, what manifestations of departure from the normal has he in any of these organs, and how completely can such abnormalities be overcome? The migrainous individual who accomplishes this and who looks after his digestive apparatus and his avenues of elimination, who avoids over-fatigue, who maintains a high degree of bodily health (which, by the way, I hold is inconsistent with the habitual use of stimulants and the modern habit of excessive meat eating), will have headaches very rarely and when it does occur it will probably be not very severe.

I hear you say that to accomplish this you must become a self-centered, self-watchful individual. I do not admit it. One of the first things that every individual must learn is his or her limitations. The more closely he safeguards them the

less often and severely will he be injured. If a sensitive person goes about saying disagreeable things about everyone he sees or knows, sooner or later he is sure to hear similar things said about him. The sensitive person should acquire the habit of praising or he should get tongue-tied. Neither one will subtract from his moral or intellectual stature. On the contrary, they will contribute to his happiness. In this same way you will materially smooth your path and lighten your burden by adopting a practically vegetarian diet, while walling up every avenue that leads to useless exhaustion of your energy.

Make a careful inventory of the things you do in the name of pleasure or diversion, and find out how many of them give you real thrills comparable to that which you felt when your husband, then courting you, first read to you those verses beginning:

> There's a woman like a dew drop.
> She is fairer than the fairest.

and with all your intellectual and emotional soul you thought he meant you; or anything approximating the divine strength and resistance you felt march majestically into your soul on conquering some mean and ignoble temptation, or the upilft that you have had from listening to inspiring music, or the peaceful serenity and contentment that has come from the growth of family feeling. You will find, I think, that most of the things that you do in the name of pleasure are stupid, inane, boring, stultefying and profitless. I advise you to cut them out, they contribute to migrainous attacks! In the same way scan carefully the incidents of daily life that exhaust you. You will find that most of them are purposeless and can be avoided without curtailing your activity or your efficiency. Ask yourself seriously the purpose of life, and having answered it bend yourself to the realization of it joyously. You will find that it is not exhausting, it is exhilarating. It goes without saying that if you find the purpose of life is to be harassed by the problem of domestics, to devise means of suppressing vivisection, or to win the first prize in a transcontinental bridge whist tournament, you are likely to be disappointed with existence here below, and also to have many headaches. On the other hand, if you see your way clear to devote your life to making this world a most attractive tarrying place for your husband, children and neighbors, en route to Heaven, you will find that serenity and contentment which the sage in meditation found, and with it health and happiness. Moreover, you will find that such conduct is an anodyne in hours of suffering, a stimulant in hours of weariness and an added joy to life at other times.

"But," I hear you say, "am I to take no medicine?" Yes, dear madam, you are to take ten grains of gray powder every 21 days on retiring, and in the morning take a mild saline laxative like sulphate of magnesia. Gradually as your headaches get less frequent, make the interval between such doses longer. This may soon be accomplished if you will so arrange your diet, your exercise and your habits, that you get a copious and adequate evacuation of your bowels each day—for that which we call "hepatic inadequacy" is a powerful force in causing attacks of migraine.

When your headaches are very severe, send for any good common-sense doctor, and ask him to give you one or two doses of some simple pain reliever. Tell him you don't want to be cured, you want only to be relieved. Smile blandly at the doctor who says he can cure you.

Yours sincerely, ——.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

INFECTIONS OF THE URINARY TRACT—ULCERATIVE COLITIS OR DYSENTERY?—COLLEGE OF SURGEONS' LECTURES—INTERNATIONAL CONFERENCE ON SLEEPING SICKNESS—WHISKEY—GRANT FOR RESEARCH—DIARRHEA AND FLIES—OFFENCE UNDER THE HUMAN LAWS—OBITUARY.

London, March 13, 1908.

The Erasmus Wilson lecture for this year was delivered at the Royal College of Surgeons on February 14 by Mr. Leonard S. Dudgeon, who took as his subject "The Acute and Chronic Infections of the Urinary Tract Due to the Bacillus Coli." He discussed the clinical and bacteriological points at length, but perhaps his most interesting statements relate to treatment. Apart from infections due to the *B. coli*, those due to other causes are often rapidly improved by drugs. The success from urotropin is phenomenal, especially in *B. typhosus* infections. But when the *B. coli* is the cause the lecturer's experience gave no encouragement. Most of the cases he had investigated had been previously treated with almost every known drug without benefit. To account for reported cases he suggested that they had not really been due to the *B. coli*, in the diagnosis of which there was great lack of method, or else that the condition was only relieved, not cured, or that treatment was begun just as spontaneous recovery was about to occur. It is well known, too, that infections due to *B. proteus* rapidly yield to antiseptics and washing the bladder, but the lecturer had seen no beneficial effect from this when the *B. coli* was present.

Treatment by anti-colon bacillus serum has been tried in over fifty cases, twelve by the lecturer himself. In five of these he found the effects rapid and permanent, no return having occurred so far as he knew. In four cases considerable benefit ensued: in two only slight improvement; in one, which was the least acute, the joint pains and rashes produced by the serum seemed almost worse than the disease. No doubt some people possess an idiosyncrasy for horse serum, but this is not recognizable until the remedy is injected. Calcium lactate, 20 grs. t.d., was advised at the time of using the serum, as in many instances it had mitigated the objectionable effects. In subacute cases the lecturer pronounced serum to be decidedly useful, though much less so than in the severer type. In chronic cases it occasionally may do good, though probably the apparent effect is a mere coincidence and usually, Mr. Dudgeon said, it was absolutely useless. It seemed best in acute and to a less extent in subacute cases. His experience indicated 25 cubic centimeters each day for three days. If no effect was produced, it should be discontinued, lest complications follow.

Vaccine treatment does not give such satisfactory results in cases due to *B. coli* as in cases of *Staphylococcus aureus* and *albus*. After treating many cases, the lecturer could not report material improvement except in a few instances, though some patients felt better, but he disregarded that if the urine remained in the same condition as at first. Moreover, he thought improvement as estimated by the opsonic index could give little satisfaction to either patient or doctor so long as the urine remained unsatisfactory. Further, chronic cases have a great tendency to relapse, and that, too, with extraordinary suddenness. This is a most important fact to remember, as cases supposed to be cured may pass into other hands with the urine turbid from *B. coli*. The lecturer had seen a case in which the urine had become quite clear and no bacilli could be found even after centrifugalization, but on addition of large quantities of that urine to culture media growth of *B. coli* was obtained. As to the question who should be treated by vaccine and who should be left to nature's efforts, Mr. Dudgeon said, it is certain that every chronic case is liable to acute attacks which are often of the greatest severity. On the other hand, there are many people who have never had any definite symptoms necessitating medical aid, although the urine has been known to be turbid for a long time, and there are also many whose urine is infected unknown to themselves or their medical advisers. There is therefore considerable difficulty in settling the question. But "if definite treatment is decided upon in chronic infections of the urinary tract due to *Bacillus coli*, the vaccine treatment should be adopted, employing the organism isolated from the patient's urine."

What is colitis? The question of one form at least

was raised at the Medical Section of the Royal Medical Society, apropos of a case described by Dr. Sidney Phillips, which, although associated with some unusual symptoms, he diagnosed as "acute ulcerative colitis." The patient was a house painter and his illness was at first considered lead colic. But on the third day he went to the hospital with profuse diarrhea, pain, and some pyrexia. On the seventh day anuria appeared, and he said on the ninth, at the autopsy, the whole length of the colon was found to be acutely inflamed with general denudation of the epithelium and small early ulcerations. The rapidly fatal course thus gave the opportunity of seeing the condition of the colon in the acute stage. Early cardiac failure and anuria were unusual and perhaps due to toxins. Dr. Herringham thought that ulcerative colitis was almost certainly due to a special bacillus. Dr. H. H. Tooth's experience in South Africa led him to believe that these cases were in reality dysentery—the post-mortem appearances were the same. Dr. H. P. Hawkins admitted that it was hardly possible to distinguish these cases from tropical dysentery. He had applied in two cases Shiga's bacillus and obtained agglutination. He thought it best to open the colon early. Dr. Norman Dalton attributed the differences to a varying virulence of the organism. Dr. Weber described a case of dilatation and hypertrophy of the colon (Hirschsprung's disease) in which ulcerative colitis came on and was fatal. Dr. A. M. Elliott said that in dysentery the post-mortem appearances often resembled those of kala-azar. Dr. S. West held that the cases were dysenteric. Mr. Symonds had tried washing out the colon from the appendix in two cases without benefit. The point to consider was at what stage to perform colotomy. Did colitis terminate in recovery? Dysentery certainly did. Dr. Phillips, in reply, said that if ulcerative colitis was identical with dysentery there were many more cases of dysentery in England than there were a few years ago. He had examined for Shiga's bacillus with a negative result. He declared he had witnessed recovery in undoubted cases of ulcerative colitis.

The Hunterian professor of surgery, Mr. D. J. Armour, has given three lectures at the College of Surgeons on the "Surgery of the Spinal Cord and Its Membranes." In opening the course he remarked that when he chose the subject he vainly imagined he could comprise in the three what he proposed to say, but he found that spinal cord tumors alone might have sufficed for the whole course. This he thought a striking proof of recent advances. Other lecturers and authors will sympathize with him in his miscalculation and some, I doubt not, will congratulate him on the skill with which he condensed his teaching on the important subject. He devoted the first lecture to spina bifida, the second to fracture dislocation so far as it related to injury of the cord, and the third to spinal cord tumors on which, as he remarked, the science and art of surgery now occupies no uncertain ground.

The second International Congress on Sleeping Sickness has been sitting all the week. As it is regarded as a continuation of the first conference, Lord Fitzmaurice again presided and welcomed the delegates in the name of the British Government, at whose invitation it assembled at the Foreign Office. Seven countries are represented. The proceedings of the first day were formal and subsequently the conference has discussed very fully the Draft General Act drawn up by the British and German Governments and the Italian chief delegate has set forth at length the views of his Government on the steps that should be taken to combat sleeping sickness.

A Royal Commission on Whiskey is now sitting and the other day some striking evidence was offered by a medical man in defense of this spirit as a therapeutic agent and of "pot-still" as against "patent-still" whiskey. It was Dr. William Murrell who undertook this rôle, and, questioned by Dr. Buchanan, he said whiskey had almost entirely replaced brandy in practice, but in the last year or two the old pot-still article had been mixed with spirit prepared in the patent still and thereby its value diminished. He would not prescribe such a spirit. When whiskey did not produce the effect he expected he ordered the genuine pot-still to be obtained and he had then had the result. He had tried rectified spirit in typhoid and pneumonia without benefit. He then tried pot-still whiskey with marked beneficial effect. The by-products had no deleterious effect if taken in solution in the whiskey, though they might be toxic if separated and taken next. Pot-still whiskey was a stimulant to the heart, blood-vessels and nervous system. The effect was temporary and that is why it was given every four hours and sometimes every alternate hour. The patent spirit did not deserve the name of whiskey, did not contain the by-products which gave it the flavor and odor by which it was made relishable and wholesome. The genuine article improved by age because the by-products increased. He suggested that as pelagra was caused by eating maize, the pot-still spirit, largely made from it, might also have deleterious effects!

In reply to Dr. Bradford, he declared that, though surgeons might still use brandy, physicians, in his opinion, preferred whiskey. He admitted that the pharmacopœia recognized brandy but not whiskey. In either he thought the alcohol of little value, the work being done by the by-product—whiskey was largely used in insomnia, the "night cap" was well known. Pot-still was more rapidly absorbed than patent, judging by the pulse! On this Dr. Bradford remarked, "A very interesting result of your experience, is it not?" and Dr. Murrell replied, "Yes, I am quite clear that I have obtained results with pot-still which I failed to get with patent whiskey. I never looked at either from the point of view of the alcohol being used as a food."

Asked by Dr. Horace Brown whether the difference in the ethers or by-products would not be less than one-eighth of a grain in one wineglassful, Dr. Murrell said: "Well, I can't go into calculations; I can only speak as a physician, not as a mathematician."

At this point the commission adjourned until next Monday. How far they were impressed by this advocacy of pot-still whiskey we must wait for their report to see. Meantime doctors can think it over.

The following researches are authorized by the local Government Board under the Parliamentary grant: 1. Further studies by Drs. Andrewes and Horder as to methods of inhibiting in the animal body the activities of infection by certain cocci. 2. A study of the various forms of pneumonia, especially in children, by Mr. Foulerton. 3. A study of acid-fast bacilli in butter, by Dr. Nabarro. 4. An investigation of the injurious gases evolved during artificial illumination, by Dr. J. Wade.

By direction of the Public Health Committee of the County Council, Dr. Hamer includes in his report a note on the possible conveyance of disease by flies. Referring to the observations of Dr. Niven of Manchester on the simultaneous prevalence of diarrhea and flies last summer, Dr. Hamer points out that contamination of food and loss of sleep sometimes caused by the insects are injurious influences of a serious character.

Dr. L. S. Forbes Winslow has been fined £50 at the Middlesex sessions for what he considered a technical offense under the lunacy acts—aiding and abetting a woman in boarding and lodging a lunatic at a house not licensed under the act.

The chairman said every medical man ought to know the provisions of the act. Dr. Winslow, as an expert, must have known the lunatic's condition. To show it was anything but a mild offense, the penalty must be appreciable though not heavy. The keeper of the house might very well have relied on Dr. Winslow. He was fined £10.

The death of Mr. E. R. Bickersteth, consulting surgeon of the Liverpool Royal Infirmary, recalls a passed generation, his father having been his predecessor at that hospital, and both having been eminent operating surgeons and otherwise distinguished. The recently deceased became M.R.C.S. in 1851, soon after settled in practice in his native town, and in 1857 was appointed surgeon to the infirmary, at the age of twenty-eight. There he worked for more than thirty years, devoted great care also to teaching, and was always in the front of surgical progress. He was one of the first to follow the antiseptic system, Lister having been a fellow student and friend. He has been retired for many years, but his son is now surgeon to the infirmary, the third generation in the position.

Dr. Andrew Halliday Douglas, ex-president of the Royal College of Physicians of Edinburgh, died on Tuesday in his eighty-ninth year. He took his M.D. in 1840, his M.R.C.P. in 1843, both of Edinburgh. He had served for many years as physician to the Royal Infirmary and also to the Chalmer's Hospital. He had been retired for many years, but numerous friends and pupils keep his memory green.

A Pioneer Surgeon.—Dr. Antoine François Saugraine settled in St. Louis in 1800 and was the first surgeon to practise regularly west of the Mississippi river. He is credited with being one of the first to make lucifer matches in this country.

THE AWAKENING OF CHINA IN MEDICINE.

To the Editor of the Medical Record:

Sir:—An ordinary native Chinese doctor, Wong-Yik-Chee, practising entirely among his own countrymen, was reputed to have made extraordinary cures with two or three American patients, and twenty-five native patients were awaiting their turn when I paid him a visit. He was then making his weekly visits to the various towns along the China coast, with two interpreters, who generally accompanied him to dispense his prescriptions, usually small powders and pills. I found him adorned with huge circular horn-rimmed spectacles and thin patriarchal chin whiskers, sitting behind his counter with his stock of remedies which is necessary in practising the healing art.

There is not yet a college for the study of medicine in China, but two are now under way, one at Singapore and the other at Shanghai. Anyone can proclaim himself to be the medicine man of his district. At times he is required to do some surgery, which is very crude and primitive, for the barber is still the recognized man for all ills. It is the custom for a Chinaman to visit his barber every week to have a general overhauling; first the head and face are shaved; second the ears are scraped and cleansed with a small bush made of duck's hair; third the upper and lower lids are scraped with a dull-edged knife, all granulations being smoothed away, and then an application is made, with a duck's hair brush, of salt solution. This is the reason one will find so much blindness in China, as they take no antiseptic measures whatever: all instruments are held in the operator's mouth during the process of operation. Finally the patient's back is massaged, and after paying a fee of three cents and no tip he leaves the shop, feeling clean outside, but now must consult his regular physician.

After going through the usual examination, which is a form of military inspection, Dr. Wong-Yik-Chee will diagnose the case and treat it, unless a devil happens to jump down the patient's throat. If this has happened, the doctor can do the patient no good until he promises to set off one hundred fire crackers to drive the devil away from his body and to make a daily visit to the joss-house. This he does, and after five days he again consults the doctor, with a feeling that he has left the devil behind or with a friend he had no use for. Dr. Wong-Yik-Chee is then not slow to take note of the good prognosis, although he may not remember his patient at all. However, being assured that the devil is no longer in him, he tells his patient he can now help him, and gives him the usual pills given to all those whom the devil has left.

Presumably on account of the high fee, 25 cents, these pills are regarded as an infallible cure for any sickness.

What a Chinese pill may consist of: (1) Spotted rhinoceros horn. It appears that the ordinary variety is of little value, but the spotted horn is a wonderful cure for intestinal troubles, at least so says Dr. Yik. The spotted rhinoceros horns come from Southern China and in the market at Singapore a single specimen will bring as high as $25. Tiger bones, when ground to a powder and mixed with Chinese wine, make a great blood tonic, which is used by all classes of Chinamen in Northern China. The recipe is held by a firm in Shanghai, who have become very wealthy by the sale of this tonic. (2) Old deer horns are boiled down to make the medicinal glue which binds the fifty ingredients composing the average Chinese pills. As in these one may get anything from a pinch of gunpowder to powdered cobra tail dust, it is not the fault of Dr. Wong-Yik-Chee if just the right kind of specific escapes the patient.

Equal in medicinal efficacy to the above are three high-grade tiger remedies, the eyeball, liver, and blood. As may be imagined, tiger eyeball, the genuine article, can be prescribed for only the exceedingly wealthy Chinese. Similarly the liver, when dried and reduced to a powder, is worth its weight in gold all over China. Tiger blood, when evaporated to a solid at a temperature of 110° and taken in the form of a powder, is believed by all Asiatics to make a redoubtable warrior out of the most craven-hearted.

As liniments the Chinese physicians pin their faith to the fats and oil of serpents and the bile. Apparently the more deadly the serpent the greater is the benefit to be derived from its extract, but the chemist must have three various kinds to make one set. These are separated by the chief in charge and he labels them, one for the head, the second for the body, and the third for the legs. When these three drugs are well preserved in ginger and orange peel they bring thirty or forty times the cost of their preparation.

Application of hot pitch poultices are used by the Chinese physicians who attend the poor, as no drugs are required to cure their ills. The effect is usually the same.

After the patient has made the rounds of the barber and traveling physician, he now looks up his dentist, whom he will find on any street corner in all large Chinese cities. One is greatly impressed by the seriousness of this gentleman, who is always reading and thinking of his collection of some two thousand teeth on a table and a few bottles of some secret drugs which upon inquiries my Chinese interpreter informed me contained the moisture of the inner side of an old coffin, which was collected after being buried some ten years. A dentist in China is called a "boxer" by all Chinamen, for he is supposed to have great strength in his arms and hand, and also some great magic power.

After we had waited some twenty minutes, a patient came along and the operator arose with great dignity to receive his patient. After examining the teeth, he inserted his left forefinger around one of the molars and out it came with a few twists of his finger, and then another, in the meantime the patient swallowing the blood from the bleeding cavity. Everyone stopped to see the operation, so that after a few minutes standing room was at a premium. After pulling the first two teeth, the operator now makes a deal with his patient in regard to the rest, as there is no charge for the first two. He will now pull as many as the patient can stand and pay for. Upon inquiries, I found the operator had pulled ten teeth for this patient, who had agreed to settle for eight at the rate of two cents gold for each tooth, and I must say that the operator certainly did earn his fee. I tried to congratulate him upon his good work, but he would not have anything to do with a foreign devil, and I began to think he was afraid of being infected by an American.

At the time of making these notes in Shanghai, January 20, 1908, the Chinese authorities had under consideration a beginning made by a German physician at this port to open this spring a German-Chinese school for the study of medicine in Shanghai, so that the average young Chinaman of brains can get a chance to study in his native land. As the city of Shanghai affords a student many advantages in having a general hospital and several clinics under European management, it is not too much to expect that in five or six years a class of one hundred students will receive medical diplomas from the Shanghai Medical College and will go forth into the world to practise as doctors, equipped with as thorough a knowledge of their profession as could be gained in most of the seats of medical learning in the West. In a few years they expect to open other institutions for the study of law and engineering, or any of the other subjects which Chinese students now go to Japan to be taught. As China is in much greater need of scientists and scholars than of politicians, its well-wishers would seem to have ample reason in desiring to keep her students at home. The future history of the German-Chinese School of Medicine will constitute a fair test as to whether such a policy is feasible or not for the present young man of China who is anxious to rise in his own country. The student problem, which now threatens to become a very dangerous one, would thereby be solved in the most triumphant manner and the most vital interest of the empire would be materially promoted by the practical scheme which this enlightened German physician has proposed to the Peking Government.

China at the present time naturally looks to Japan for instruction in modern science. The Japanese realize that the Chinese Government needs thousands of teachers, so the Japanese instructors are pressing in into all professional works. From what is seen of the modern Chinamen and of their astounding capability as students, their diligence, endurance, attainments, patriotism, and solidarity of feeling concerning the coming greatness of China, one cannot but feel that the future of this country is assured. The advances will be along the lines of the useful arts and sciences, and the West need not fear any military aggression on the part of the Chinese Empire.

James F. Donnelly, M.D.

New York.

Voluntary Ambulance Service in Vienna.—Twenty-five years ago a voluntary street ambulance association was formed in Vienna. That year its services were required 2,000 times; last year nearly 30,000 times.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 19, 1908.

The Use of Fat-Free Milk in Infant Feeding.—C. W. Townsend says that many infants are condemned to a low proteid diet on account of the difficulty they have of digesting, not the proteids, but the fats that go with them. The use of dilutions or modifications of weak creams instead of the strong creams, so commonly advised, and the earlier recourse to undiluted cow's milk would, in the light of these studies, appear to be a more rational procedure. He further reminds us that exact imitation of the percentages in woman's milk is far from being the solution of infant feeding. We must take heed lest we worship the fetish of percentage feeding too blindly, for, no matter how cleverly we calculate the fractions, or how nicely we split the proteids, the resulting mixture is still cow's milk and not woman's milk. The main conclusions of his experience thus far with fat-free milk are expressed in the following propositions: (1) While fat is very necessary to the normal infant, it is more often given in excess than is generally supposed. (2) Excess of fat may cause one or more of a number of symptoms, as, for example, constipation, white and "curdy" stools, a ravenous appetite with atrophy, convulsions. (3) In gastrointestinal disturbances it is desirable to exclude fat. (4) The proteids of undiluted fat-free milk appear to be remarkably well borne even by young infants, and there is an absence of so-called curds from the stools.

The Serum Treatment of Epidemic Cerebrospinal Meningitis.—C. D. Hunt recapitulates the various steps in the elaboration of the serum treatment of this malady up to the present time. His personal experience with the Flexner serum comprises 15 cases. Of these 8 have completely recovered, 2 have died, and 5 are still pending. Of the recoveries, all were free from any of the usual sequelæ of the disease. Both of the fatal cases had been running for a considerable time before coming under observation. Of the 5 pending cases, 4 are convalescent, and will undoubtedly recover. Detailed histories of the cases are given. Naturally, the serum must be early in the disease. The author believes that we can safely conclude that in any event it does no harm. In all but one of his cases the correctness of the diagnosis was proved by the finding of the *Diplococcus intracellularis* in the cerebrospinal fluid. The effects of the serum may be delayed at times, but in the majority of cases the good effects are even startlingly prompt in their appearance. The author admits that his series of cases may have been exceptional, and that much remains to be proved in regard to the Flexner serum, but believes that we are justified in urging a widespread trial of the serum in this disease.

New York Medical Journal, March 21, 1908.

How to Estimate the Functional Power of the Heart.—P. C. Franze calls attention to the value of the following methods of examination: (1) Blood pressure. In absolute insufficiency of the heart muscle, pressure fails. Yet here fall of the blood pressure is no criterion of cardiac weakness. Far less is high pressure a sign of a strong heart. The reasons for this are that the former may be due to undertension, the latter to undertension in the arterial system. So far, therefore, the value of blood pressure is minimized as a means of judging the cardiac power. (2) Pulse.—Frequency, rhythm, and volume of the pulse are quite useless in themselves as criterions of the heart's strength for they are subject to nervous influences. (3) Respiration.—Dyspena in rest speaks for cardiac failure, but the reverse, its absence, is no guarantee for a sound heart. (4) Urine.—Scanty urine, high specific gravity, and albuminuria are signs of a weak heart, if other sources are excluded. But the absence of these signs is no proof of a sound heart. (5) Cyanosis.—This, in a person with sound lungs, is a valuable adjunct to the diagnosis of a weak heart. (6) The size of the heart.—As a rule, a heart of sufficient functional capacity is nondilated, and when incompensation sets in begins to dilate. So, naturally, the size of the cardiac diagram is in some degree an means of forming an opinion as to the organ's functional capacity. But for this purpose, of course, only the most exact measurements can be relied upon. Such ones can only be made by the various *x*-ray methods.

The Question of Sour Milk.—After a reference to the use of sour milk in various countries of the Orient, L. Haim considers its use in therapeutics and its industrial applications. He discusses the various varieties of koumyss and calls attention to the various fraudulent preparations which have been imposed on the public. Such, for instance, are the following: Milk to which a sufficient quantity of any acid has been added to coagulate it, and afterwards, as is practised in soda water drinks, adding carbonic dioxide under pressure of 1 to 2 atmospheres. In another case a similar beverage was obtained by adding to milk some sugar and baker's yeast and keeping until fermentation had occurred. In order to prevent such undesirable practises, the public ought to be very careful in their choice, and preference should always be given to those possessing the guarantees necessary in such cases. No matter whether the product is manufactured by or under the supervision of a physician, the product should be registered with guarantee of a definite chemical standard and standard of bacteriological compositions, according to the regulation of the pure food law.

Symptomatology and Diagnosis of Nephritis.—D. Vander Hoof adopts the classification of Senator, and presents the subject under the following headings: (1) Acute nephritis: (*a*) parenchymatous, (*b*) diffuse. (2) Chronic diffuse nephritis, without induration (chronic parenchymatous nephritis). (3) Chronic indurative nephritis: (*a*) secondary induration (secondary contracted kidney), (*b*) primary indurative (chronic interstitial) nephritis, (*c*) arteriosclerotic induration. Under each heading symptoms and diagnostic considerations are presented in considerable detail.

Treatment of Eczema in Infants and Young Children.—J. M. Winfield enumerates the various plans of treatment which have proven efficient in his hand, following the usual conventional methods. He notes that children fed on sterilized or pasteurized milk are more subject to reflex eczema and disordered digestive organs than are those fed on plain or modified milk, and if the former varieties are given to children already having the disease, the latter becomes aggravated. The dermatoses with which it is most often confounded are scabies, impetigo, erythema, and syphilis, and differential points are enumerated. He notes that it would be better for the cutaneous integrity of the infant if water for bathing could be avoided, and some bland oil, such as olive or almond, be substituted; but it is almost impossible to properly remove crusts, soiled secretions, and débris without water—yes, even soap and water! The water should be soft, rain or spring water, but if this is unattainable, water that has been boiled and cooled will be found quite as good; bran baths, to which a small quantity of sodium bicarbonate has been added, will often be found useful; castile, or the superfatted soaps, can be used when soap is indicated, but it is better to use as little soap as possible, for even the mildest will irritate some skins. After the child has been thoroughly dried, the body, diseased portion and all, should be thoroughly inuncted with some bland grease, such as cold cream or almond oil. The physician should be careful to prescribe a perfectly fresh oil or the best cold cream, for it is a fact of common observation that much of the olive or almond oil procured from the drug store is apt to be rancid, and the cold cream so badly made that it acts injuriously on sensitive skins.

Journal of the American Medical Association, March 21, 1908.

Injuries of the Spinal Cord.—A. R. Allen discusses at length the injuries of the spinal cord, due to external violence, such as gunshot wounds, fracture-dislocation with involvement of the cord and involvement of the cord in spinal concussion without spinal lesion. Stab wounds of the cord are not considered. After describing the anatomic conditions, he points out the liability to injury of the different regions of the cord. A vertebral dislocation without injury to the intervertebral disc is considered by him an absolute impossibility in spite of the numerous instances reported to the contrary. More careful histological study, he thinks, would have revealed an injury. Fractures and dislocations in the thoracic region, above the tenth thoracic vertebra, are not so frequent as those in the cervical region or as those below the tenth thoracic vertebra. In the upper thoracic region, dislocation without fracture is impossible, and, while it is theoretically possible in the lumbar region, the vertebræ slipping forward or backward, there are many who think that fracture always plays a part. In the cervical and lower thoracic region self-reducing dislocation without fracture frequently takes place. It has been claimed by many that the spinal musculature is a preventive factor against dislocation, but Allen considers this an error. A number of cases are on record, however, in which fracture has been caused wholly by muscular action. In injuries to the spinal column the cord may be injured in various ways, transversely squeezed, cut in two, obliquely, or even longitudinally lacerated. Allen reports nine fatal cases, with autopsy; six of them following fracture-dislocation; one due to gunshot wound; one was a pure self-reducing dislocation without fracture, and one followed spinal concussion without spinal lesion. In his comments

on these cases he calls attention to various special features, such as the hematuria that sometimes follows, even with no kidney trauma, which he thinks can be explained by a traumatic anemia causing necrosis of renal parenchyma; the question of erection centers in the cord, as shown by penile turgescence; the danger from operative interference; the cause of hematomyelia in simple spinal concussion, etc. As regards operation, he takes a conservative position, but says that in compound fractures it may be often advisable, but here one should do as little as possible in the way of removal or reposition of fragments. Of course, if there is a lamina driven into the spinal cord, its removal is indicated, but any attempt to remove all existing débris is condemned. It is better to trust to Nature, with the aid of immobilization. When the canal is opened the greatest care should be taken to avoid pressure on the cord, and he would remove blood clots, etc., by irrigation with warm sterile salt solution, after time has been given for the oozing from small vessels to cease, rather than by sponging. There is much testimony in favor of operating in fracture-dislocation involving the cauda equina. The treatment of the bladder troubles and the trophic disorders must be carried out along the lines of general medicine and surgery.

An Endemic of Cancer.—A. L. Tynes gives an account of an endemic of cancer in Fisherville, Va., and vicinity. About thirty years ago there was a very high mortality from this cause, then for about two decades there was comparative immunity from the disease. Within the nine years, 1898 to 1907, there were 18 deaths from cancer out of a total mortality of 105, or 17 per cent. Heredity does not appear to play any important part in the incidence of the disease. There is, however, some suggestion of house infection in the details as given. In a nearby city, within an area a little larger than a city block, twelve cases have developed during the last seven years, and this in a city in which the physicians say there are elsewhere very few cases of cancer. Tynes thinks the facts in these localities point strongly to an infectious organism transmitted directly or by means of a host. A number of interesting details are given, and the article is illustrated.

Sex Life of the Tuberculous.—W. H. Peters considers it demonstrated by observation that there is, in consumptives, an abnormal sexual excitement or erethism that leads them to excess that is liable to be disastrous. He attributes this to the enforced idleness, the temperature and toxins, the forced feeding essential to the cure, the tonics employed, and, in some cases, to a certain recklessness induced by the disease. The tendency may be obvious even to the last moments of life, and it is rather remarkable that the indulgence does not more often have the fatal effects that are sometimes observed. In sanatoria much can be done in the control of this factor, but difficulties are encountered even there. These are still greater in the home treatment that is all that is available for the majority of consumptives. Here the physician can only advise, but he should point out the dangers and insist on the patient sleeping alone and on continence in all respects. The danger to the other partner and to offspring must also be insisted on. He considers absolute abstinence from sexual intercourse one of the most important things to consider and one of the hardest things to insure in the home treatment of the "great white plague."

Traumatic Pneumonia.—J. J. King reports a case of pneumonia, observed about three weeks after the swallowing of a carpet tack, in a child aged six. Later the tack was coughed up and the patient returned to her normal health. He remarks on the grave prognosis in such cases when treated by the expectant plan, but thinks that with Killian's method of examination by introducing long tubes in the bronchi and thus locating and removing the foreign body, only an occasional patient should be lost. Brief notes of cases illustrating the varieties of traumatic pneumonia, from injuries such as contusions, as well as from aspiration of foreign substances, are appended to his account of the case.

The Lancet, March 14, 1908.

Five Cases of Appendicostomy.—The case histories are given by J. L. Stretton, who states that of late he has enlarged the opening sufficiently as to allow of easy manipulation and to make a thorough examination of the abdominal contents. The increased risk he regards as infinitesimal and the advantage gained is that the appendix can be placed in a position most suitable for the future passage of the catheter. He fixes the appendix outside by means of a pin passed through its mesentery and closes the wound round it in layers, being careful not to constrict it too tightly. It is a disadvantage to put any sutures through its walls. At the end of 48 hours it may be amputated, but unless there is pressing need for immediate irrigation, it is better to leave it for two or three weeks. Early removal may cause wound infection, which not only prolongs the process of healing, but makes the catheterization extremely difficult, owing to granulations and the retraction of the appendix orifice. The author found colonic irrigation with silver nitrate solution useful in his personal cases. It is often difficult to persuade the patients to continue the irrigation regularly. The dilatation of the orifice is also difficult. In none of the author's cases was there any discomfort. The orifice did not emit any discharge, and was easily kept clean.

Congenital Hypertrophic Stenosis of the Pylorus and Its Medical Treatment.—The history of one case is given by G. Carpenter, who notes that the records of surgical treatment of this complaint show that the infant does not readily tolerate plastic operations on the abdominal viscera, and believes that in time to come we must look on surgery as the last resort. Much attention attaches to the detection of the pyloric tumor. The treatment must be conducted on the same general lines as have been approved in the uncomplicated spasmodic cases. Carpenter has very little faith in the usual antispasmodic remedies and believes that the question narrows itself down to the proper regulation of the diet and its selection with reference to the requirements of each individual child. Regular meals are no less important than restricted meals, and not only are meals that are too bulky to be carefully avoided but the meal must be administered slowly. The dyspeptic infant becomes an inveterate food-bolter, and a meal that is dumped down into the infant's stomach is bound to disagree. The man who is in a hurry to change the dietary because the infant's stomach does not immediately respond to his treatment will never succeed. Success can only be compelled by shaping a course and intelligently sticking to it. It will be found on inquiry that those who claim that they have tried everything have really tried nothing. Ringing the changes on a variety of foods invites dyspepsia, it does not cure it, and such panic-bred dietaries must be avoided. Abdominal massage in the direction of the pyloric outlet has proved efficacious in at least one case. But in regard to topical treatment gastric lavage has a well-merited reputation. Thorough stomach washing with warm normal saline solution should be used twice a day until the complaint shows decided signs of improvement, when it may be tried once a day. That the remedies are working satisfactorily can be seen by the improved condition of the stools. And there are two other precautions that must be taken—viz., to keep the infant's stomach warm and not to upset his digestion by starchy foods.

Treatment in Delayed Chloroform Poisoning.—A. P. Beddard calls attention to the prevalent use of alkalies on the theory that an acute acid intoxication of the body is at least an important cause of the symptoms and fatal result. He regards a mere acidosis as not a poisoning of the body by acids and that it is only when the supply of basic material begins to fall behind that acidosis passes into acid intoxication. In certain conditions of acidosis such as acute yellow atrophy of the liver phosphorus poisoning, etc., systemic or tissue death supervenes far too rapidly to be due to the passage of acidosis into acid intoxication. Hydrazin poisoning, which produces liver changes similar to those of phosphorus presents no acidosis. The same is true in multiple necroses of the liver following hemolytic sera. Hence the author concludes that alkalies cannot be of much service in the treatment of delayed chloroform poisoning, and he declares than clinical experience confirms this view. In chloroform poisoning the somatic cells are starving for fat. When cells are poisoned by chloroform they can oxidize proteids but imperfectly and fats even less well. Consequently as soon as the cells have used up their meager store of carbohydrate, their hungry condition causes a breaking down of tissue proteid and a transference of fat to them; but since neither of these foodstuffs, and especially the fat, is properly utilized, the cells remain in a condition of severe starvation which may rapidly lead to their death through lack of energy. He and other observers have shown that if the poisoned animal is fed with dextrose the transport of fat is prevented because it is no longer necessary; and further, that recovery is much more likely to take place than when the animal is starved. Feeding with carbohydrates, of course, does not prevent the poison from damaging the cells, and it has been found to be useless when protoplasm has been too severely damaged, as in acute poisoning by phosphorus, but carbohydrates do provide the cells with the source of energy which they can most easily utilize, and may therefore prevent their dying from acute inanition and so give them time in which to recover. The author suggests that under the conditions of delayed chloroform poisoning, it would be advisable to feed the patient with dextrose either by the mouth or by enema or continuous

rectal infusion of a ten to twenty per cent. solution or by infusing into the veins a six per cent. solution. It is impossible, to say whether the ingestion of dextrose before the use of chloroform could have any value. It might be possible by inquiry to find out whether an abnormal susceptibility to chloroform is associated before the operation of such food as will keep up the store of glycogen in the body, and whether conditions which reduce this store increase the susceptibility. From animal experimentation it would seem that every chloroform anesthesia must induce some change in the metabolism, and yet the vast majority of patients do not exhibit the serious symptoms of delayed chloroform poisoning.

Lymphangioplasty.—Under this title W. S. Handley presents a preliminary note on a new method for the relief of the brawny arm of mammary cancer and for similar conditions of lymphatic edema. The author states that the permeative spread of a cancer is accompanied by an almost coextensive destruction of the lymph-vascular system. His aim is to provide an artificial lymphatic system for the affected area and consists in the introduction into the subcutaneous tissues of the swollen area a number of buried silk threads running (*e. g.* in the brawny arm) longitudinally upwards from the wrist to terminate in the loose and healthy areolar tissue in or beyond the axilla and spaced out at convenient intervals around the limb which is thus drained by capillary attraction. The operation is closely analagous to the drainage of a marshy field by lines of buried pipes. The details are given of one case in which this plan was followed, and while the author admits that its ultimate results await the verdict of time, he declares nevertheless that they have exceeded his hopes.

British Medical Journal, March 14, 1908.

Excessive Patellar Reflex of Nervous Origin.—P. C. Smith reports four cases in which in the course of mental alienation of various kinds, excessive patellar reflex occurred but later disappeared without any change in the general deterioration of the chronic malady. In the author's experience it is not uncommon for the insane to show contraction of certain individual muscles when they are lightly tapped, like that displayed, only more universally by some emaciated patients and by those in the lethargic stage of hypnotism. The muscle most frequently affected seems to be the vastus externus sometimes of one side only; others are the deltoid, the pectoralis major, the triceps, the biceps, and the muscles of the hypothenar eminence. The patients who exhibit this phenomenon are mostly general paralytics or chronic alcoholics, in either case having organic changes in the brain; but the author has seen it in a case of acute alcoholic insanity that recovered in less than a month, and in a case of simple melancholia which became chronic. This association with cases that are probably free from organic change, and the similarity of the phenomenon to that occurring in emaciation and the hypnotic state, point to its being due to a functional disorder of the cortex. The theory that it is necessarily due to the cutting off of inhibitive currents that pass down the pyramidal tract is hard to reconcile with its occurrence in deep sleep, in old age, in hypochondriasis, in emaciated persons, and even in the healthy. The results of Jendrassik's method of reinforcement are also hard to reconcile with the arrest of inhibition theory. No doubt it is said that this method acts by distracting the attention, and so cutting off the inhibiting currents; but, in the first place, the method may still prove successful (in cases where the reflex is not obtainable without it), even if the patient deliberately directs his attention to the knee while pulling on his hands; and, secondly, it has been shown that the action of one set of muscles does not diminish, but actually increases the energy of the cerebral cortex in other directions.

The Colony and Bromide Treatment of Epilepsy.—A. J. McCallum reports his experience at one of the English institutions saying that the treatment is based on the assumption that early epilepsy is far more frequently the direct result of peripheral irritation than of Gowers' "abnormal state of chemical nutrition, whereby the molecules are more easily detached and their atoms yield with undue facility to the attraction of the adjacent oxygen," and that the liberal use of bromide prevents this peripheral reflex from disturbing the cerebral harmony and saves the brain from contracting the bad habit of epilepsy on the slightest sensory disturbances. The dose of bromide given is that amount which is necessary to control the fits. This is done in some cases by 40 grains a day; oftener 100 grains is required, and as much as 300 grains has been necessary. The author believes that bromide treatment is necessary and curative in peripheral, traumatic, emotional, and toxic cases. Epilepsy being due to severe prolonged, or repeated sensory stimulation of the brain, he uses that amount of the remedy necessary to stop this sensory stimulation. He has seen only three cases of rash out of forty patients forming one series of cases. For those cases originating from absorption of toxic products from over-eating, from unsuitable food, or from constipation, diet is of importance, but for the bulk of cases diet might be summed up in—three meals a day everything fresh, everything limited, flesh never oftener than once a day and three times a week is ample. In the salt-free or purin-free diet he sees no likelihood of good being done.

Hysterical Somnambulism Showing Abnormal Acuity of Vision in the Somnambulistic State.—The patient of J. W. Russell was a girl of 21 years, typewriter and student, of nervous and reserved disposition whose somnambulistic attacks began three years before she came under observation. These attacks are described in full as she was placed in hospital and closely watched. In one of these attacks a lamp light was turned full on her face, but she took no notice. The pupils were widely dilated and responded but slightly. Physical examination showed little of importance. Superficial and deep reflexes were a little exaggerated. In one attack she wrote a letter on a technical musical subject and its composition was free from any errors. The light in the ward where she was lodged was quite insufficient to allow of any writing or work to be carried out by any normal individual, and the author thinks that an abnormal acuity of vision was present during the somnambulistic state.

Berliner klinische Wochenschrift, March 9, 1908.

Hyperemia in the Treatment of Internal Diseases.—Lewandowski points out that the principles of treatment by hyperemia promulgated by Bier are also applicable to many internal and general disorders of nonsurgical nature. Prominent among these are cardiac affections, pulmonary diseases, skin diseases, diseases of the stomach and intenstine, disorders of the vasomotor and trophic nerves, and disturbances of metabolism such as anemia, obesity, gout, and diabetes. While the differentiation between active or arterial, and passive or venous, hyperemia is well founded and to be adhered to, it is frequently difficult to separate the two forms in practice, and undoubtedly in many cases the results obtained are due to a combination of the two. In the treatment of internal disorders it is chiefly active hyperemia that comes in question, though at times the other type is also of service. Hot air is one of the best means of inducing arterial hyperemia, and the application of hot water in various ways is also an effective and convenient method of securing the desired effect. In some cases, as in gastrointestinal affections, hot beverages are of service, while in others hot local baths or compresses may be employed with advantage and furnish a means of treatment that is easily regulated in point of duration, intensity, etc. The action of hot water applications is like that of the hot air and is characterized by local relief to pain, inhibition of bacterial growth, resolution and absorption of exudates, and nutrition of the tissues. They also afford a means of influencing the general circulation and may form a useful addition to treatment having this end in view.

Münchener medizinische Wochenschrift, February 25 *and March* 3, 1908.

The New Municipal Hospital for Prostitutes in Frankfurt.—Hübner says that three and one-half years ago the German Society for the Prophylaxis of Venereal Diseases was founded in Frankfurt and now a further step in the direction of the restriction of these maladies is marked by the opening of a special wing of the municipal hospital devoted exclusively to the care of prostitutes. In this city there is police control of the prostitutes with compulsory medical examination and treatment, and it is one of the aims of the new institution to make the women feel that these measures are for their own advantage. With this end in view care has been taken in the construction of the building to have the four wards of ten beds each as pleasant and agreeable as possible for the inmates, while all outward evidences of restraint of liberty have been avoided. Adequate laboratory facilities have been provided and it is hoped that fruitful investigations, particularly from the standpoint of treatment, may be made. The study of the patients themselves, not as cases of disease but as individuals, is also expected to yield useful material from the social side, and it is the intention by supplying opportunities for useful occupation, reading, etc., to endeavor to wean the patients from their former modes of life.

Rheumatismus Tuberculosus.—Esau understands under this term a destructive process involving the articular surfaces of the joints and leading to serious damage through ankylosis and contractures, but which is purely inflammatory and aseptic, apparently being caused by an

intensive action of the tubercle toxin in a manner comparable to that of the gonococcus in gonorrheal arthritis. The affection is a polyarthritis which may begin with ankylosis, or a number of joints may simultaneously be the seat of pseudorheumatic pains. The inflammatory reaction is not severe but within a few months ankylosis appears, resulting in complete loss of function and putting an end to the pain. Sometimes fever, sweats, and emaciation are present and dominate the picture. There is no tendency to abscess formation or ulceration and the pains vary in intensity like those of rheumatism. A peculiarity is that corresponding joints are frequently affected simultaneously or after a short interval. The ankylosis is usually fibrous and bony.

The Bactericidal and Hemolytic Properties of the Leucocytes and Edema Fluid.—Schneider describes a series of complicated experiments in which the leucocytes obtained by the injection of aleuronat or bouillon into the pleural cavities of animals were subjected to various procedures in order to test their bactericidal and other properties under different conditions. As the result of these observations it appears that the leucocytes may be kept alive for hours after their removal from the body, and that under these circumstances they behave as independent individuals with the power of secreting substances of various sorts for a considerable period. The bactericidal agents are secreted by leucocytes in a manner comparable to the activity of gland cells, and the author believes that bodies to which he gives the name "leukins" are formed which are different from the alexins. The natural protective agencies comprise the alexins of the serum, phagocytosis, and these products of the leucocytes, which are probably an active factor in the results obtained by the congestion treatment. The bactericidal action of inflammatory fluids depends on extracellular leucocyte products, while the lymph of the vessels contains alexin. The hemolytic action of the extracts from lymph glands is different in nature from that of the blood. The blood plates do not take part in the production of alexin.

Fat Absorption in Infants.—Schelble proposes the following method for obtaining an objective guide to the efficiency of fat absorption in infants, though the plan may also be resorted to in the case of adults. Several drops of blood are obtained in the usual way, in infants by puncture of the great toe, and are placed in a tube of 3 mm. diameter which is immediately put in the centrifuge. By means of a platinum wire the fibrin is loosened from the wall of the tube or is carefully drawn out, and the centrifuging is continued. The serum from a fasting individual is clear, but that taken shortly after a meal containing fat is more or less cloudy, owing to the presence of minute fat droplets. The author recognizes five grades of this appearance: Very fairly cloudy, slightly cloudy, cloudy, very cloudy, very heavily cloudy. It is important not to break up any red cells in performing the test as the presence of a red tinge to the fluid makes accurate estimation of the cloudiness very difficult.

French and Italian Journals.

Experiments in General Therapeutics by Means of Antidiphtheritic Serum.—Mongour has treated a number of nondiphtheritic general conditions by means of injections of antitoxin, with the best of results and no bad effects. The effects are almost immediate and in nondiphtheritic angina recovery is so rapid that convalescence is almost absent. He believes that we have here not a panacea for all diseases, but a medication that is worthy of use by physicians in general diseases. Among the diseases that were successfully treated were typhoid fever, septicemia, pneumonia, cholecystitis, malignant scarlatina, and unknown infections.—*Revue Mensuelle des Maladies de l'Enfance,* October, 1907.

The Origin of the Digestive Gases.—Paul Carnot says that normally the digestive tube is filled with gas which makes the abdomen elastic. This is of triple origin: most of it is ærophagus, swallowed gas; in pathological conditions some is of microbian origin; some comes as an exhalation from the blood. Air is swallowed with the food, with the saliva and aside from deglutition in special gulps; some enters the intestine by aspiration. The quantity is very variable. It consists mostly of atmospheric air. A certain amount is permitted by the stomach to maintain normal tension; still more air increases tension beyond normal and then comes the stage of evacuation by the esophagus, or by the intestine. Gaseous fermentation occurs only when food remains too long in the stomach and microbial fermentation occurs. The gases thus formed are carbonic acid gas, hydrogen, foramire, ethylene, and sulphuretted hydrogen from decomposition of albuminoids. Exhalation of gas from the blood by way of the intestine occurs, but to a small degree only.—*Le Progrès Médical,* November 22, 1907.

Treatment of Tuberculosis Based Upon the Antitoxic Action of the Liver.—E. Gerard and G. Lemoine believe that the liver is the defender of the organism against infections and intoxications. Infectious diseases are less severe in persons in whom the liver is in good condition. Based on this theory they have made experiments on the action of cholesterin and its purified principle paratoxine. This has an action of arrest against the evolution of the tuberculous process. Following their success in the use of this substance in animals they have used it in human tuberculosis at the Hospital of Saint-Sauveur with success in the early and second stage cases. In later cases it was of some benefit also. The patients finally used as material of experiment were outpatients who continued their ordinary avocations and life. They used paratoxine in subcutaneous and intralaryngeal injections, and by mouth. Injected the dose was from one to four cubic centimeters per day. It should be given for several months to get a good effect. General condition was improved, digestion and appetite increased, weight increased, cough rendered loose and lessened in frequency and force, expectoration lessened, temperature and night sweats were relieved. Tuberculous laryngitis was relieved and autopsy showed cicatrization. Tuberculous enteritis was especially benefited even in most urgent cases.—*La Tribune Médicale,* November 23, 1907.

Isolation of the Bacillus Typhosus.—Alberto Altobelli has made extensive experiments as to the possibility of isolating the *Bacillus typhosus* from the colon and other bacilli. He worked on the theory that an agglutination reaction could be established for this differentiation. His results are thus given; the method of agglutination is not applicable to the isolation of the *Bacillus typhosus* by means of a serum of the *Bacillus coli.* It is not possible to prepare a polyvalent anticolibacillary serum which will agglutinate most or all of the bacilli of the coli family. A serum prepared from an immunized rabbit will agglutinate only its own particular variety of colon bacillus. Serum of a rabbit immunized against the *Bacillus typhosus* agglutinates also the *Bacillus coli.* The agglutinating power of an anitcolibacillus serum is inferior to that of a typhus agglutinating serum.—*Giornale Medico del Regio Escrcito,* October, 1907.

Treatment of Loss of Substance in Bones.—Pietro Chorone fu Giovanni sums up the treatment of loss of substance in bony structures thus: Whether traumatic, post-operative, or pathological we should attempt the most rigorous asepsis so as, if possible, to get healing by first intention and thus shorten the treatment and obtain repair without deformity. In cavities and loss of substance of the cranial bones grafts of bone, periosteum, and osteocartilage, and absorbable substances may be used. In long bones with superficial cavities grafts are useful; in deep ones the cavities may be filled with absorbable substances. In loss of continuity of the shaft sterilized bone disks are available. In short bones transplantation of bone is better. When we cannot totally arrest the process of suppuration, especially in the tuberculous variety, second intention healing must be permitted.—*Giornale Internazionale delle Scienze Mediche,* September 15 and October 31, 1907.

Abdominal Drainage with Aspiration.—Delassus discusses the advantages and disadvantages of drainage in abdominal operations. He believes that there are some simple operations in which the abdomen may be closed without drainage. But in the majority of more complicated cases it is advisable to use drainage. He thinks that he has obtained better results since he has adopted the practice of leaving a drainage tube in place to remove the fluid which always exudes from the tissues and may be found collected in the posterior cul-de-sac. He uses aspiration each day with a small syringe passed down into the lower part of the abdominal cavity. Asepsis may be as complete as possible and yet there may be some source of infection in the patient herself, or in the utensils or the dressings used. The only real objections are the pain caused the patient in removing the drain or the gauze, and the tediousness of daily dressings. Uselessness, illogical nature of drainage from below upward, danger of infection, and danger of eventration at the point of the tube the author rejects as baseless objections.—*Journal des Sciences Medicale de Lille,* February 15, 1908.

The London Hospital.—Since this hospital was founded, more than 6,000,000 patients have been treated. Every day an average of fifty patients are operated on, and it is estimated that in the course of a year 1,500,000 pills, a ton of cough lozenges, a hundred miles of sticking plaster, and 3,000 leeches are used.

Book Reviews.

THE PROLONGATION OF LIFE. Optimistic Studies. By ELIE METCHNIKOFF, Sub-Director of the Pasteur Institute, Paris. The English translation edited by P. CHALMERS MITCHELL, M.A., D.Sc. Oxon, Hon. LL.D., F.R.S., Secretary of the Zoological Society of London, Corresponding Member of the Academy of Natural Sciences of Philadelphia. New York and London: G. P. Putnam's Sons, 1908.

THE author of this interesting book is a many sided man, a philosopher as well as a scientist, and a writer who charms by the simplicity of his style and the directness of his argument, holding the attention of his reader from the first page to the last. He makes his points with no show of polemics and meets his opponents with a gentle reasonableness which disarms the most captious critic of his theories. To the readers of his earlier work, "The Nature of Man," of which this is a continuation or a supplement, no commendation of the present essay is needed. They will find in it the same optimistic view of man's present and future, and the same fixed determination to dwell on the bright side of man's physical and mental constitution, without glossing over its imperfections, which characterized the preceding volume.

The author believes that most of us do not reach the length of life to which we are entitled, and if a few of us do so it is only through travail and by paying toll to a senility that comes before its time. Death from old age—natural death—is at present one of the rarest of phenomena but it is not impossible of achievement even now, and eventually it will be the normal end of man. Accidents from without it may never be possible to prevent absolutely, but the accidents of disease will in the course of time be excluded, and then man will live out his natural term happily and peacefully, and when the inevitable end arrives it will be welcomed; life having reached its physiological limit, the instinct of its preservation will be replaced by an instinct of death, and the final act will be accepted with the same peaceful content that one feels in dropping off to sleep after a day of pleasurable activity.

The cause of old age, that is to say, of premature and morbid old age, such as senility usually is, is, according to Metchnikoff, autointoxication, which either weakens the noble cells directly or acts upon them as a sort of opsonin, making them attractive to the phagocytes which destroy them and replace them by fibrous tissue. The elaboration of these autotoxic agents takes place through bacterial action in the intestine, and chiefly in the large intestine. The colon is to the author of this book the *bête noir* of human anatomy, serving no useful purpose, and acting only as an immense culture tube for the noxious bacilli. Since the removal of this part is impracticable as yet, the best we can do in our efforts to attain to a healthy old age is to repress the growth of the intestinal bacteria by restricting the intake of meat and sowing the nutritive tract with the friendly lactic acid bacilli. This is done by taking either a pure culture of these bacilli or milk soured by their action.

This, in brief, is the argument of the treatise so far as relates to the subject noted by the main title, but there is much more, and this is the most interesting part, expressed by the subtitle, "Optimistic Studies," which treats of the ascent of man and of the relation of the individual to the species and to society. The limits of this review will not permit a further analysis of the work, which at best would be unfair to the author and unsatisfactory to the reader. It is a book which must be read to be appreciated, and its perusal will well repay anyone interested in the varied topics of human interest of which it treats.

PREVENTABLE BLINDNESS. An Account of the Disease Known as Ophthalmia of the New-Born, and of Its Effects, With a Plea for Its Suppression. By X. BISHOP M.A., M.B. Cantab, F.R.S.C. Eng., Ophthalmic Surgeon to the Belgrave Hospital for Children; Chief Clinical Assistant, the Royal London Ophthalmic Hospital, Moorfields; Senior Ophthalmic Assistant, the Middlesex Hospital; Oculist (with Care of Blind Children), London County Councils Schools; Demonstrator of Pathology, Middlesex Hospital Medical School; late Examiner, Natural Sciences Tripos, Cambridge University. New York: William Wood & Company, 1907.

IN this small volume of 109 pages the subject of ophthalmia neonatorum is discussed, particularly in regard to its economic relation to the municipality and to the State. The disease in all of its phases and the treatment are sufficiently fully and clearly described. Interesting tables of the number of blind in England, particularly in London, are given, together with the percentage due to ophthalmia of the new-born. Measures of prevention are considered in full. While prophylactic treatment is advised, the author does not think that it is wise to make prophylactic treatment compulsory, as he is of the opinion that such a law would be a dead letter. He pleads for compulsory notification on the part of physicians, midwives and attendants, and thinks that the proper enforcement of this measure will go far to prevent the disastrous results of the affection.

The book is printed in large, clear type, and although its economic considerations are largely adapted to the English public it is well worth being read by American physicians.

SQUINT AND OCULAR PARALYSIS. With a Short Account of the Disturbances of Muscle Balance. By E. LUCAS HUGHES, M.R.C.S. Eng., L.R.C.P. Lond., Fellow of the Royal Institute of Public Health; Clinical Ophthalmic Assistant, Royal Infirmary, Liverpool; late Clinical Ophthalmic Assistant, Westminster Hospital; Assistant in the Service des Maladies des Yeux, Laribosière, Paris, etc. Illustrated by the author. London: H. K. Lewis, 1907.

THIS volume of 208 pages is really a work on the motor anomalies of the eye and their treatment. It is divided into three parts, of which the first treats of "Squint," the second "Ocular Paralysis," and the third, "Disturbances of Muscle Balance."

In Part I. a brief history of squint is given. This is followed by a description of "binocular single vision" of the "fusion faculty" and "the relation of convergence and accommodation." In the author's opinion concomitant strabismus is due to faulty innervation and lack of proper development of the fusion faculty and not to inherent excessive strength of certain extrinsic ocular muscles. The treatment advocated, namely, principally by means of orthoptic exercises, is based on this belief. Javal, Parinaud, Rémy, and Worth are largely quoted, and theirs are the teachings followed. If operation is resorted to, which is advocated in some cases as supplementary to the other treatment, it should not be done before the age of nine years.

Part II. contains a chapter on the "Anatomy and Physiology of the Extrinsic Muscles."

Part III. deals with heterophoria and heterotropia. Heterophoria is regarded as a congenital condition due to excess of muscle-power either (*a*) from excessive development or (*b*) from peculiarity of insertion; a condition in which operation is more frequently required than in ordinary squint. Methods of examination are given in full. An appendix devoted to a description of the use of Rémy's diploscope completes the work. The text discloses evidence of a careful study of the subject. The book is well worth reading by all who are engaged in treating muscular anomalies of the eyes.

TRACHOMA, ITS CHARACTER AND EFFECTS. By Passed Asst. Surg. T. CLARK and Passed Ast. Surg. J. W. SCHERESCHEWSKY. Prepared by direction of the Surgeon-General. Treasury Department, Public Health and Marine-Hospital Service of the United States. Washington: Government Printing Office, 1907.

THIS brochure on trachoma is the result of a study of the disease as observed in the United States Public Health and Marine Hospital Service. A description of the disease, "its effect on the community" and "the effect of restrictive legislation" are given by Passed Assistant Surgeon T. Clark. The same ground is again covered by Dr. Schereschewsky, and to this the prophylactic and immediate treatment are added. Some excellent colored plates of trachoma in its various stages are found in the back part of the pamphlet. The work is creditably written.

LE CRIMINEL, aux points de vue anthropologique, psychologique et social. Par le Dr. EMILE LAURENT. Préface de M. le Professeur LACASSAGNE. Paris: Vigot Frères, 1908.

DR. LAURENT is the author of "Habitués des Prisons de Paris." He was interne at the infirmary of the Prison de la Santé, medical inspector of schools, and connected with the Board of Charities of Paris. In these various capacities he has seen and studied the criminal in embryo, as a vicious and ungovernable child, and "full blown." He has also studied him in his environment in various quarters of Paris and in his travels to the "five parts of the world," he has compared his mentalities, crimes, and mental disorders. His style is florid and very entertaining. Among the chapter titles are: "The Morphology and Physiology of the Criminal," "Psychology of the Criminal," "Degeneracy and Criminality," "Responsibility."

Society Reports.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held February 24, 1908.

The President, Dr. J. Riddle Goffe, in the Chair.

The Optometry Bill.—Dr. Lambert, acting for Dr. Harris, Chairman of the Committee on Legislation, called attention to the Optometry Bill, the hearing on which was to occur Thursday afternoon (February 27), and the strong efforts that were being made to carry it through. This was a very important matter; the supporters had everything to gain and nothing to lose. This bill should be opposed not only by ophthalmologists but above all by the profession at large. A resolution opposing this bill was offered and was adopted by the Society.

Pensions for the Families of Drs. Lazear and Carroll.—Dr. Loughran, member of the Committee on Legislation, called attention to a bill which was now before Congress, giving pensions to the widows of Drs. Lazear and Carroll. A resolution endorsing this bill was offered and adopted by the society. It was also resolved that the Medical Society of the County of New York send a copy of this resolution to the United States Senators and each Congressman representing the State of New York, and also that they be urged to further the passage of this measure.

Treatment of the Opium Habit in India and China.—Dr. W. D. Silkworth, of Brooklyn (by invitation), told of the so-called Malay cure with burnt opium and the method of employment. A demonstration was made before the society of the making of the pill, and how it was used in the pipe. The remedy was discovered by a Chinese wood cutter and its introduction was furthered by Sir Charles King. Six patients were presented to demonstrate the results of the treatment.

The Nature of Colic and Its Diagnosis.—Dr. George Franklin Shiels read this paper. He said the existing definitions of colic were not only misleading, but to a very material degree incorrect. After going over the medical literature of this and other countries, and after a very careful analysis of a series of answers to the question, "Give a short, concise definition of colic, referring especially to its nature and cause," which question he addressed to well-known teachers of medicine and surgery throughout this country, he had constructed the following: Colic was an acute, violent, paroxysmal, spasmodic, periodic, griping pain due to the contraction of a hollow viscus or structure, whose walls were composed of smooth or unstriated muscle, with irritation of the sensory nerves therein, and was produced by an effort on the part of such viscus or structure to rid itself of an irritant or obstruction. While this composite definition was generally true it lacked the one essential element to make it correct, for without the presence of peritoneum there could be no colic. Therefore a proper definition would be: Colic was a characteristic, acute, spasmodic, peritoneal pain wave most frequently, but not always, associated with an effort of a hollow viscus or structure, whose muscular walls were of the smooth or nonstriated variety, to rid itself of an irritant or obstruction, such viscus or structure being either covered by, or in close relationship to, the peritoneum. Dr. Shiels called attention to a paper by Professor K. G. Lennander, of Upsala, Sweden, which was read before the Section on Surgery and Anatomy of the American Medical Association last June (Medical Record, July 6, 1907). In this paper Lennander said: "From my published works it may be gathered that I have not been able to find any abdominal organ innervated only by the vagus or sympathetic nerves which is provided with the sense of pain. Sensations of pain within the abdominal cavity are, according to my experience, transmitted only by the phrenic nerve, the lower six intercostal nerves, the lumbar, and the sacral nerves." Again: "Should this view of ours prove correct it speaks decidedly in favor of a specific character of the nerves of pain. In other words it goes to prove that only the parietal peritoneum is provided with nerves of pain. It is my opinion that all painful sensations in the abdominal cavity are transmitted only by means of the parietal peritoneum and its subserous layer, both of which are supplied with cerebrospinal nerves around the whole of the abdominal cavity." Again: "Pains do not originate within the abdominal organs which are supplied only by sympathetic fibers and the vagus nerves." The work of Meltzer and Kast, of the Rockefeller Institute, and of others, refutes this theory of Professor Lennander and the results of their experiments might be summed up in the statement that the normal gastrointestinal canal possessed the sensations of pain, that the findings of Professor Lennander were based upon a false premise, that the insensibility of the viscera and visceral peritoneum during operation was not due to any lack of sensory nerves but to some inhibitory process; this inhibitory agent was the cocaine used to render the abdominal walls insensitive. In colic the abdominal sympathetic, as well as the vagi, phrenics, and cerebrospinal nerves were collectively the tracts through which this special pain sense was conveyed; the fact that they were supported and conducted toward their terminal destination by means of the peritoneum no doubt altered the pain wave, and gave it that peculiar type which was understood in speaking of colic. Moreover, the inordinately violent and peculiar symptoms brought about by trivial causes were reasonably explained by the multitudinous ramifications and important vital ganglionic anastomoses of these nerves. Other organs or structures not noted in this composite definition of colic, when obstructed, gave rise to pain, but in no sense was this pain colic. No one had ever heard of colic of the vas deferens or of the Eustachian tube, or of the bronchi. Irritation of the vessels and lymphatics in close relationship to the peritoneum doubtless gave rise to pain of a colicky character, which was either directly or reflexly elicited. Having proven to his satisfaction the fallacy of the smooth-muscle-pain theory of colic, he reiterated that without the presence of peritoneum colic could not be developed. He firmly believed that many postoperative colics were due to irritation brought about by other causes, such as blood clots, slight traumatisms, too much handling, exposure to cold, etc. Dr. Shiels believed that if his definition of colic was a correct one, and the extent of the peritoneum and of the wide anastomoses of the abdominal nervous system were kept in mind, all the reflex and typical colics would be more easily understood and accounted for.

Dr. George E. Brewer repeated the definition of colic as given by Dr. Shiels, and said that the intestines, the biliary apparatus, the kidneys, the ureter, the appendix, etc., were all hollow organs and typical colic was produced by explosive efforts. In intestinal obstruction particularly one could see these waves produced by contracting intestine, visible through the abdominal wall. So soon as the obstruction was relieved, the pain was relieved. This was true of the appendix. The presence of a concretion, without fever, inflammation, or evidences of irritation, produced at times the most violent colic. The same was true of stone in the ureter, the kidney, or the biliary passages. A thought that occurred to him was, "Why not say that colic was due to the presence of areolar tissue because this tissue surrounded all organs?"

Dr. Florian Krug asked if Dr. Shiels included in his definition the colicky pains resulting from ectopic gestation and tubal abortion. The most violent colics were those connected with the attempt of the Fallopian tube to expel foreign bodies.

Dr. Ludwig W. Kast spoke of the work of Dr. Metzler and himself on the subject of abdominal pain and sensi-

bility of the abdominal organs, and said he wished to correct the statement quoted with regard to the fact that their experiments concerned solely the sensibility of the abdominal organs of the dog. In that animal the stomach, the small, and the large intestines were sensitive to touch, to heat, to the galvanic as well as the faradic current. But this sensibility disappeared after the injection of cocaine, and this injection might be applied near the peritoneum or far away from it. Lennander, in order to explain the different forms of abdominal pain, made the explanation that the pain resulting from gastric ulcer was not due to muscular contraction, but was due to the absorption of the hydrochloric acid into the tissues of the stomach, and this being carried further down to the peritoneum caused pain.

Dr. Shiels said that Dr. Brewer had misunderstood him; he did not wish to convey the impression that the irritation of the peritoneum caused the pain, but that the type of the pain was given by the peritoneum; it was only when the peritoneum was present that the peculiar type of pain known as colic could exist. The theory of areolar tissue fell to the ground, for this tissue existed in the esophagus, the rectum, and other structures where no colic occurred. The peritoneum was in close relationship with the Fallopian tubes.

The Treatment of Intraperitoneal Hemorrhage from Rupture or Abortion of Tubal Pregnancy.—Dr. Hiram N. Vineberg read this paper. (See page 554.)

Delayed Treatment of Tubal Pregnancy.—Dr. Hunter Robb, of Cleveland, Ohio, read this paper (by invitation). He said he would endeavor to present his own convictions with regard to the treatment of ectopic pregnancy, especially in cases where rupture had taken place, and referred to some of the points already noted in his paper read before the American Gynecological Society last May. Tubal abortion was said to occur in from 75 to 78 per cent. of the ectopic pregnancies, but in his experience the percentage was higher. Most authorities agreed as to the treatment in the absence of contraindications; immediate operation was indicated in the early cases in which there was a positive or a probable diagnosis of ectopic gestation before rupture or severe hemorrhage had occurred. Complete cases of tubal abortion were dangerous because the hemorrhage might suddenly become profuse, and the patient then was said to be in no condition to stand stimulation. Dr. Robb did not believe in this. Frequently one would find the fetal sac plugging up the tube. Patients were often in a state of collapse and operation was advised under the belief that the patient was bleeding to death. As a result of this doctrine he said a great many lives had been lost by a resort to operation, either abdominal or vaginal section. When a surgeon advised immediate operation in such cases, the procedure was open to criticism. Many would recover without operation. Many surgeons were losing cases because they believed that such cases must be operated upon immediately. In dealing with ectopic gestation the first factor to consider was the hemorrhage. It was well known that the quantity of blood was 7.7 per cent. of the body weight in the human; the question then arose, what percentage of this could be lost without detriment. A healthy person might recover after losing three per cent. of the body weight. Therefore, a woman weighing 130 pounds might recover after losing four pounds of blood, or 1,650 c.c. He believed that sometimes these patients recovered not because of the operation, but in spite of the operation. He asked how often the abdomen had been opened in cases of ruptured ectopic gestation and bleeding had been found to be still going on? If hemorrhage was not going on, with the patient in shock, what could be gained by operation? How frequently did one actually see bleeding vessels in these cases? How could we know that the manipulation was not responsible for any hemorrhage encountered? In his experience with over fifty cases he had found threatened bleeding but no actually bleeding vessel. It might justifiably be assumed that there was something faulty in reports of series of deaths resulting from a ruptured ectopic pregnancy. Many operators had reported no deaths from deferred treatment. In many cases immediate operation took away the patient's chance for recovery. Dr. Robb then described his procedure, which gave him satisfactory results. He carefully stimulated the patient with a saline infusion under the breast. If there was no vomiting stimulants were given by the mouth; also morphine was administered either by the mouth or hypodermically. Heat was applied to the body, and the head of the bed was elevated. Strychnine was given. While this treatment was carried on, the operating room was made ready, and so soon as the woman recovered from the shock, operation was performed. Dr. Robb protested strongly against the removal of such patients to the hospital, for this aggravated the condition of shock as it increased the loss of blood. He instanced the condition of five patients who were admitted to the hospital in such a serious condition of severe shock that death seemed imminent. None of the operations were done earlier than from eighteen to twenty-four hours after rupture in these five patients, while in the remainder the periods varied from three to twelve days, with an average of five days. Among his cases there was but one death. In concluding his paper Dr. Robb emphasized certain points: Conservative operations upon the tubes and ovaries now were common, although a few years ago radical operations were deemed necessary. More conservatism in the treatment of ectopic pregnancies was called for. When the diagnosis of an ectopic pregnancy was certain, an operative course was indicated. Many women not only survived the effects of ectopic pregnancies, but recovered without operation. When seen in a state of collapse, operation was not necessarily indicated; when they died, they succumbed from shock and not from loss of blood. Most of the cases when operated upon showed no bleeding from the blood-vessels, unless it was caused by the manipulation. Large quantities of recently accumulated fluid in the abdomen should not be removed suddenly; the vessels should have an opportunity to adapt themselves first to the changed mechanical conditions. Cases in which the bleeding was sufficient to cause death were rarely seen in time to save the patients. The results obtained by good operators who deferred operation were worthy of consideration.

Dr. Brooks H. Wells called attention to the classic monograph of Parr, which was written in 1876; among the 500 cases of ectopic pregnancy which formed the basis for his work, there were 329 deaths, and of these 174 were the result of hemorrhage from an early rupture of the gravid tube. It was not convincing to say that as a bleeding artery in a tube or broad ligament of a dog would not cause death a bleeding artery in a tube or broad ligament of a pregnant woman would not be fatal. Twenty-three years ago it happened that, as the assistant of a prominent gynecologist, he was fated to sit by the bedside of a young woman, inactive so far as efficient aid was concerned, and he saw her fade into death while her surgeons, men prominent and skilled, waited for the reaction that never came. The diagnosis had been made of an internal hemorrhage and the question of a ruptured ectopic pregnancy was considered, but those in charge refused to operate because of the presence of a marked degree of shock. The abdomen was opened after death and a ruptured tubal pregnancy found. Within less than a month the bitter experience was repeated and so great was the impression made by these two cases that never since had he dared to refuse operation to a woman with a bleeding tube, and in a large experience he had never had one die after the bleeding point had been secured. Experience gleaned from multitudes of cases made it certain that many women with ectopic pregnancy would not die if left with-

out any treatment. It was also true that many cases of appendicitis in which operation was urged would recover without operation. But which ones? In the majority of instances the bleeding would be found to have ceased at the time of operation, but there were important exceptions. Where the surgeon had reason to believe that active bleeding was going on, he should not employ stimulants until he was ready to control the bleeding. Dr. Wells' experience was to take out a pregnant tube as soon as he was reasonably sure of his diagnosis, and he had never had cause to regret it. When he considered the pathology of the condition, the probable sequelæ of an early or late rupture, the probable mortality, and contrasted all this with the very slight mortality or morbidity following expert operation he repeated without hesitation that: "Undoubtedly without the necessary surgical skill the waiting policy may be best; but, if the patient with an ectopic pregnancy can be put in the hands of one reasonably expert in abdominal surgery, operate at once. Should rupture have occurred with serious and progressive hemorrhage so that the patient seems in danger of death, operate at once and do not wait to see whether she is to die or recover."

Dr. Howard C. Taylor said there was no question that in the great majority of cases of ectopic pregnancy the bleeding ceased spontaneously. In many of these cases the symptoms came on slowly, they might not be severe and often resembled those of inflammatory conditions, and the correct diagnosis was made only at the operation. Neither in his opinion was there any question that there were a certain number of cases in which the bleeding did not cease spontaneously and the cases died from hemorrhage. If a patient came under observation shortly after an acute onset of bleeding from an ectopic pregnancy, should they wait and trust that the case might be one in which the bleeding would cease spontaneously and ignore the fact that there might be a fatal outcome?

Personally, he would not do so. The operation was not one associated with special shock, and in his judgment the danger of the additional shock of the operation was less than the danger of additional bleeding. He had been greatly interested in Dr. Robb's paper, but there were some points with which he did not agree. That he would operate on a pregnant dog, as he had described, and the dog live, did not prove that bleeding from a single vessel might not cause a fatal hemorrhage as had happened as the result of the slipping of a ligature. While it was true that there might have been some fluid in the abdominal cavity previous to the hemorrhage that might make the amount of blood present seem more than the patient had really lost, it was also possible that some of the fluid parts of the blood would probably be absorbed so that the amount of blood present would not be as much as the patient had really lost. Again, while it might have been proved experimentally that an animal might lose a certain percentage of its body weight and live, it did not prove that a woman might bleed the same percentage of her body weight into her peritoneal cavity and still live. It had been often noted that the blood in the peritoneal cavity was there under pressure and spurted out as the abdomen was opened, and that at the same time there was an improvement in the condition of the pulse, showing that the pressure of the blood in the abdominal cavity might be a factor in producing the shock from which the patient was suffering. His judgment was that the immediate operation gave often the only chance to save the patient.

Dr. Hermann J. Boldt said that the question of the wisdom of operating on patients who were in absolute collapse following a ruptured ectopic pregnancy was one of the greatest importance. All must agree that it was a serious procedure to operate upon a patient in absolute collapse. However, such a patient seldom died from the primary hemorrhage from a primary rupture. He believed it was erroneous to wait and wait until the patient got better and better after a certain period of time. If going to do that, he asked why operate at all, unless certain symptoms set in. How was a surgeon going to tell that a patient would recover by the expectant plan of treatment? As a rule he took the ground that all patients with an ectopic gestation should be submitted to operation unless there were contraindications, when the expectant plan of treatment would be the proper course to pursue. But all other patients should be submitted to operation, and the sooner the better.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held February 18, 1908.

Dr. Onslow Allen Gordon in the Chair.

Blood Transfusion as a Therapeutic Measure.—Dr. William F. Campbell of Brooklyn read this paper.

Bad Air and Good Air, and the Uses of the Latter.—Dr. W. P. Northrup of New York read this paper. He said that old conceptions as to what was meant by bad air, and which were taught in the schools, were that bad air contained a deficiency of oxygen and an excess of carbon dioxide. These conceptions were later supplemented by the observations of Brown Sequard and D'Arsonval, who distinctly stated that there was a breath poison, which accounted for the symptoms produced by confinement in a close room. Paul, one of the workers in Pflüger's laboratory, set out to put this view to an experimental test. He constructed a cubical cabinet whose sides were two meters long, just large enough to enable him to sit within it, in order to study the effects of the close confinement upon his body. He found that when the cabinet was cool he could remain in it for four and a quarter hours without any ill effects. On the other hand, when the cabinet was heated to 72°, at the end of a quarter of an hour's stay in the cabinet these ill effects would appear. There were a band-like sensation about the head, headache, vertigo, nausea, vomiting, and, finally, fainting. If a person outside the cabinet now breathed through a tube the air contained in the cabinet, he did not suffer these symptoms. The introduction of a fan into the cabinet, and, by means of it, the vigorous stirring up of the air, made a decided difference, by retarding or delaying the symptoms produced by close confinement in the cabinet. The question then arose, why did the individual confined in the cabinet suffer from the symptoms, while one on the oustide, breathing the same air, was immune from them? The answer was that the heat and moisture in the cabinet, in other words, the steam jacket surrounding the occupant's body, made the difference. The case of the lady who fainted in the theatre was not one of breath poisoning, but was similarly a practical application of the experiment performed above, that is, it was a case of the presence of a steam jacket about the body, which would not permit the latter to unwarm itself. This unwarming of the body was quite essential for the proper performance of its functions. The ill effects following the stagnation of warm, moist air about the skin were just as important as those following the breathing of foul air. In this sense, one might, with a stretch of the imagination, say that the skin breathes quite as much as the lungs. The diminution of oxygen and the increase of carbon-dioxide in the air were, therefore, not the main causes of the unpleasant and dangerous symptoms, in the acute cases of close confinement, although they had a more far-reaching and important rôle in chronic cases. Pflüger, applying these facts, stated that one should not wear furs, paper, or rubber about the body, since these favored the retention of a steam jacket. It was essential for the proper maintenance of health that the body should be permitted to lose its heat. There was nothing so important as varying the temperature of one's atmospheric environment. In spite of this, people habitually lived in overheated rooms. The steam-heated apartment was an abomination in this

respect. The old-fashioned hospital ward was overheated. At the Presbyterian Hospital the wards were kept during the day at from 60° to 65°, while at night the temperature of 50° to 55° was found sufficient. There was nothing that added so much to the discomfort of the patients as the warm, stagnating air of the hospital wards. They now had an open-air ward on the roof of the Presbyterian Hospital. Recently, through the munificence of Mrs. W. C. Vanderbilt, Sr., they had been enabled to construct a shed over this ward, providing shelter against the sun and wind. There was also a sun room. The beds were on wheels, so that the patients could be moved from one part to another of the open-air ward. It was desirable that the casters should be of wood. The speaker's experience in the treatment of sick children upon the roof was unique. He said that a visit to the open-air ward at present, even with the roof banked with snow, would show cases of double pneumonia, empyema, and abscess of the lung. Under this treatment the patients usually progressed favorably. In sharp contrast to the behavior of similar cases formerly kept in the wards, they slept and ate decidedly better. The speaker facetiously criticized the modern treatment of tuberculosis by means of the window-shack method; in this it was designed to have the patient breathe the outer air, while his body was confined indoors. He thought it was more important that the body should be outdoors as well. In the open-air roof ward, by the avoidance of drafts, there was no danger of catching cold. In fact, it was found that nurses who had caught cold downstairs progressed favorably when assigned to day or night duty on the roof. The avoidance of drafts was effected by means of the shed, as well as by the mode of dressing the bed. This was of great importance. Below the mattress was a layer of paper; beneath this was a blanket, which thus surrounded the mattress completely, and came up on the sides, and was pinned in the middle above the patient. Another blanket was placed on top. In this manner no drafts could reach the patient. The speaker had observed that a tiled flooring on the roof was a disadvantage. The children who were allowed to be up chose to play on the board-covered part of the roof. The open-air ward of the German Hospital had this very disadvantage, and, worse, the entire roof was tiled. The hard, warm, or cold floor did not invite the little feet of the children. In the open-air ward the sick children required less constant care than in the other hospital wards. It was unusual to find the children awake at night, while indoors it was not uncommon to find the little ones at night, their eyes wide open, and also crying continually for water. The idea of the roof ward had already taken hold in the medical community. Roosevelt Hospital was building one that would surpass by far that of the Presbyterian Hospital. Open-air wards were likewise in process of construction at King's Hospital, London, at Shrewsbury, at St. Luke's Hospital, and the New York Eye and Ear Hospital.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held January 21, 1908.

DR. HERBERT S. CARTER IN THE CHAIR.

The Metabolism of Nitrogen and Sulphur in Pneumonia.—Dr. ALEXANDER LAMBERT and Dr. CHARLES G. L. WOLF presented this communication, which was read by Dr. Wolf. So far as they were aware, there were on record no complete analyses of the urine in this affection, which had been made with trustworthy methods, which would especially serve to correlate the metabolism of nitrogen with that of sulphur, and it was on this account that they presented two sets of analyses of the urine out of a series of fifteen which they had made. Among the questions they attempted to answer in this work were the following: Did the breaking down of large quantities of body protein lead to the same relative distribution of nitrogen and sulphur as when the same quantity of food protein was catabolized? Were the end-products qualitatively the same? To what extent did the protection of protein by fat and carbohydrates effect the excretion and distribution of the nitrogen? To summarize, what they found to be some of the unusual features of the metabolism in pneumonia were the following: (1) The very high loss of protein, in spite of the fact that the organism was receiving amounts of food which in the normal individual were sufficient to protect from any loss. It had been shown, moreover, that the addition of protein to the diet did not protect from loss of body protein. All the protein given was excreted in addition to the individual loss which occurred under general conditions. From this point of view, the attempt to spare the body by the administration of protein was merely adding a burden in excretion to the already overtaxed organism. That the addition of fat, or especially of carbohydrate, might protect in a marked degree had been shown by Coleman and Shaffer. It was along this line that feeding experiments with patients suffering from toxic fevers must be carried out. (2) The high elimination of creatinin during the precritical period denoting an increased metabolism of a special and important type. This type of metabolism became subnormal during the postcritical period, when the patient was attempting to recover from the severe drains to which he had been subjected. (3) The excretion of creatin during the toxic period, and the disappearance of this substance from the urine after the crisis. They were inclined to attribute very especial significance to this substance and did not altogether associate it with loss of body protein. The amounts in which it was present were much larger than what was found in urines of starvation, and besides one found the compound in urines which were not at all associated with loss of body protein. (4) The very high amount of undetermined nitrogen, pointing to a disturbance of a type in which the nitrogen catabolism did not go as far as ammonia formation, the end product which was subsequently synthetized to urea. This undetermined nitrogen must be made up largely of substances containing sulphur, for the neutral or undetermined sulphur to a certain extent predominated. What the substances were which entered into this mysterious group was absolutely unknown. They were probably very complex compounds of the sort isolated by Bondzynski and his coworkers, and which had received the name oxyproteic acids.

Dr. P. A. SHAFFER thought that perhaps it would not be out of place to call attention to the rather unusual amount of work which this paper of Dr. Lambert and Dr. Wolf represented. No one, who had not carried out similar experiments, could have any adequate idea of the very large amount of work and time which such a study demanded. In this age of experimentation, too many were in the habit of choosing problems for their research which might be solved in a very short time and by a few experiments. And while, of course, there was not necessarily any relation between the amount of time and the worth of one's conclusions, it very often happened that the value of the results was quite commensurate with the completeness of the observations. Certainly the results obtained by Drs. Lambert and Wolf were of value because of the completeness of the analytical results. Such work would in the end repay for the large amount of analytical drudgery which it demanded, for it was only by such complete observations that one could learn the details of this interesting subject, metabolism in fever. During the last few years knowledge of the normal variations in the excretion of the products of protein metabolism had been materially advanced. Two of the most interesting of these products appeared to be creatinin and creatin. These two substances were very

closely related chemically, but so far as their appearance in urine was concerned, they probably had nothing to do with one another. Creatin was not excreted normally unless the subject had ingested creatin. Creatin did appear, however, in high fever. Subjects of exophthalmic goitre in the acute emaciating stage excreted relatively large amounts of creatin. He said he had found it also in the urine of a woman a few days postpartum. It also was said to occur in fasting. The muscle tissue in the average individual contained altogether about 90 grams of creatin, none of which appeared in the urine in health. These facts indicated that creatin was excreted only when there was a breaking down of muscle tissue, in starvation to greet the physiological demands for energy-producing material; in women just after parturition, because of the rapid physiological resolution of the uterus; in cachexia, and in fever, because of the pathological consumption of muscle tissue, due perhaps to some form of bacterial or other toxins. If this view was correct, we had in creatin a means of knowing whether the muscle tissues were being pathologically drawn upon or destroyed. In pneumonia Dr. Lambert and Dr. Wolf found large amounts of creatinin excreted during the fever, and the amount dropped suddenly with the fall of temperature at the crisis. This was in accord with other recent observations. Creatinin, unlike creatin, was present in large quantities in normal urines and in complete health. The amount excreted was constant for a given individual from day to day, and, as some unpublished experiments of his own indicated, just as constant for every hour during the day. In high fever the amount excreted was increased, but when the temperature fell and the patient was left in a muscularly weak condition, the amount excreted was very markedly below the normal. He believed that, exclusive of fever, the amount of creatinin excreted had a direct relation to the potential muscular efficiency of the individual. Strong and active individuals excreted much creatinin, while subjects who were muscularly weak excreted correspondingly small quantities. After a pneumonia, for instance, he believed that the amount of creatinin excreted was an expression of the degree in which the efficiency of the muscles of the individual had suffered during the disease. Unfortunately, however, one did not have the opportunity of determining the normal excretion of the subject before the pneumonia was contracted.

Dr. Warren Coleman said that he had been interested in the practical rather than the purely scientific side of the work, and it was a matter of great satisfaction to him to find that by means of the diet Dr. Shaffer had spoken of, reaching 4,000 calories, one could protect the body proteid of typhoid patients. He had arranged a special dietary for typhoid fever patients, consisting principally of milk, milk sugar, fat, and eggs; this was a good diet, but not satisfactory from the gustatory standpoint.

Dr. Charles G. L. Wolf said that it appeared that the question of diet was important not only in pneumonia, but in other hyperpyrexial conditions and should be worked out scientifically and practically with material benefit to the patients. It had been shown years ago that in the stage of pyrexia, no matter how much protein one got, the organism got rid of it in the way or urea and ammonia by the kidneys.

Experimental Notes on Artificial Nutrition, with Special Reference to the Hypodermic Method.—Dr. Herbert S. Carter read this paper. He called attention to the inadequacy of rectal feeding in many cases and asked how the nutritive equilibrium could be kept up more satisfactorily than by this means. After reviewing the important contributions to the subject, and the literature on this subject was very scant, he referred to experiments made on dogs with injections of certain agents of nutritive value, and said that he did not think it was unreasonable to believe that the application of the same method might be used with benefit on man.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 28, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	539	200
Diphtheria	405	58
Measles	1813	38
Scarlet Fever	1113	40
Smallpox	—	—
Varicella	135	—
Typhoid Fever	22	4
Whooping Cough	15	3
Cerebrospinal Meningitis	17	8
Malarial Fever	—	—
Totals	4059	351

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending March 27, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alabama, Mobile	Mar. 1–8	5	..
California, Los Angeles	Feb. 29–Mar. 7	10	..
San Francisco	Feb. 29–Mar. 7	12	..
District of Columbia, Washington	Mar. 7–14	13	..
Florida, De Funiak Springs	Mar. 7–14	4	..
Jacksonville	Mar. 7–14	1	..
Illinois, Chicago	Mar. 7–14	6	..
Rockford	Mar. 7–14	1	..
Springfield	Mar. 5–12	16	..
Indiana, Fort Wayne	Feb. 29–Mar. 7	5	..
Indianapolis	Mar. 1–15	10	..
Muncie	Mar. 7–14	4	..
Nebraska, Nebraska City	Mar. 7–14	2	..
New Jersey, Newark	Mar. 7–14	1	..
New York, New York	Mar. 7–14	1	..
North Carolina, Charlotte	Mar. 7–14	1	..
Ohio, Cincinnati	Mar. 6–13	14	..
Dayton	Mar. 7–14	1	..
Sandusky	Feb. 29–Mar. 7	1	..
Toledo	Mar. 7–14	2	..
Oregon, Portland	Feb. 22–Mar. 7	6	..
Iowa, Ottumwa	Mar. 7–14	1	..
Kansas, Kansas City	Mar. 7–14	12	..
Topeka	Feb. 29–Mar. 7	1	..
Wichita	Mar. 7–14	30	..
Kentucky, Lexington	Mar. 7–14	1	..
Louisiana, New Orleans	Mar. 7–14	17	8 imp'ted
Michigan, Saginaw	Feb. 22–29	2	..
Minnesota, Winona	Feb. 29–Mar. 7	1	..
Missouri, Kansas City	Mar. 7–14	8	..
St. Joseph	Feb. 15–Mar. 7	78	..
St. Louis	Mar. 7–14	1	..
Tennessee, Knoxville	Mar. 7–14	3	..
Nashville	Mar. 7–14	6	..
Texas, Galveston	Mar. 6–13	2	..
San Antonio	Mar. 7–14	18	
Washington, Spokane	Feb. 29–Mar. 7	15	..
Wisconsin, La Crosse	Mar. 7–14	2	..

SMALLPOX—INSULAR.

Philippine Islands, Province of Pangasinan—			
San Fabian	Feb. 25	100	..

SMALLPOX—FOREIGN.

Africa, East London	Jan. 26–Feb. 8	1	2
Arabia, Auen	Jan. 11–25	..	4 Imported
Brazil, Rio de Janeiro	Feb. 2–23	105	40
Canada, Halifax	Mar. 7–14	1	..
Egypt, Cairo	Feb. 11–25	3	3
Formosa	Jan. 26–Feb. 1	4	..
France, Marseille	Feb. 1–29	..	11
Paris	Feb. 22–29	10	..
Great Britain, Glasgow	Feb. 22–Mar. 6	1	..
Honduras, Tegucigalpa	Mar. 1–8	2	..
India, Bombay	Feb. 11–18	29	..
Madras	Feb. 8–14	2	..
Rangoon	Feb. 8–14	1	..
Italy, General	Feb. 20–Mar. 5	163	..
Japan, Kobe	Feb. 15–22	181	108
Moji	Mar. 16	1	Present
Osaka	Feb. 8–15	199	63
Shimonoseki	Mar. 16	..	Present
Tokyo	Feb. 25	..	"
Yokohama	Feb. 15–22	64	16
Java, Batavia	Jan. 26–Feb. 8	6	..
Mexico, Mexico	Feb. 5–12	..	2
Monterey	Feb. 1–8	1	1
Russia, Batoum	Jan. 13–Feb. 13	44	..
Moscow	Feb. 15–22	48	12
Odessa	Feb. 15–22	4	2
Riga	Feb. 22–29	2	..
Spain, Barcelona	Mar. 1–10	..	2
Denia	Feb. 22–29	5	..
Malaga	Jan. 1–31	..	2
Valencia	Jan. 25–Mar. 1	17	..
Turkey, Constantinople	Feb. 9–Mar. 1	9	..
Venezuela, Maracaibo	Feb. 18	..	Present

YELLOW FEVER.

Brazil, Manaos	Feb. 15–22	..	6
Para	Feb. 22–29	11	8
Ecuador, Guayaquil	Feb. 8–15	10	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Feb. 1–8	6	5

CHOLERA—FOREIGN.

India, Madras	Feb. 8–14	..	26

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Original Articles.

DIABETES AND THE FOOD FACTOR.*

BY HENRY S. STARK, A.M., M.D.,

NEW YORK.

THE exposition of recent studies of the minute physiology of the functions of metabolism has paved the way for many innovations in the care of diabetics. Advances along this line of research have made it clear that the physician who treats diabetics simply with codeine and a starch-free diet is setting back the hands of the clock. Such a routine is classic and savors more of the antelaboratory period than of the present day of scientific research.

Among the many factors that have contributed to change the principle of treatment, the following are the more important: Our advanced knowledge of the physiological values of the food elements, of their ultimate disposal in the human economy, and of the destination of their end products; a clearer conception of the reaction of the human organism to diet; a better understanding of the genesis of urea and uric acid; the discovery of the detoxicating function of the liver and of the emunctory virtues of the kidneys; a more comprehensive knowledge of the nature of enzymes, and finally the almost patent fact that diabetes is viewed as a biochemical process whose origin is hidden somewhere within the confines of the alimentary canal.

In order to manage diabetics intelligently something more than a passing knowledge of urinalysis is required. The time has long gone when the physician's obligation to his patient was discharged by the mere performance of Fehling's test. The fact that both diabetic and non-diabetic urine may contain other substances than glucose that may cause chemical reduction, and others that may prevent reduction, must not be lost sight of. The objective evidence obtained by a detailed chemical examination of a twenty-four hours' specimen is necessary to indicate the line of treatment in individual cases. The presence of the acetone bodies, the fluctuations in the glucose element, the variations in the normal ingredients, especially the nitrogen compounds, the probable presence of pentose or lactose, are all factors which must be determined. In borderline cases the reduction tests must be supplemented by others, such as the fermentation, and the phenylhydrazin test. In all cases it will be found useful to adopt the following routine for the identification of glucose. Suspend all drugs for one day, then secure a specimen of a twenty-four hours' collection, test the same for albumin which should be removed by boiling. Next filter the urine at least once through animal charcoal, which frees it of urea, uric acid, creatinin, coloring agents, and other ingredients. Thus we obtain a product which it is possible to examine for glucose with some degree of reliability. In cases where doubt is felt as to the nature of the reduced substance, the two control tests before mentioned should be employed, as well as the orcin test for the pentoses. These formalities are not mere pedantry but really essential. For you will be surprised how many disturbing factors may prevent or cause reduction. These are not only chemicals, but certain food ingredients and some products of intestinal digestion. In those diabetics who have a slight glucose output, the reduction may be completely masked by the presence in the urine of the by-products of a disturbed metabolism.

A significant condition for the successful management of diabetics is a comprehensive knowledge of scientific dietetics. For as far as the treatment by drugs is concerned, diabetes belongs to the category of therapeutic failures. There are few subjects connected with the practice of medicine so little understood by the profession as the food factor in health and in disease. And yet when we consider that the number of diseases attributed to a disordered nutrition is constantly increasing, it is to be commented upon that our medical institutions should devote so little attention to the science of dietetics, and that the vast majority of them should furnish no facilities for acquiring practical instruction in this branch of therapeutics. Probably in this era, when the science of bacteriology dominates the spirit of research, the problem of feeding has not yet caught the fancy of the medical mind. But I believe a healthy sentiment is being aroused in favor of the study of foods and feeding. The efforts and labors of the United States Department of Agriculture deserve especial mention. In the field of pediatrics the subject has been threshed out to a nicety; in other branches it has met with scant favor.

The percentage composition of various foods, the nutritive values of their components, their potentialities as conservers of heat and creators of energy, their economic values with reference to their assimilative qualities, are unerring guides to the proper management of diabetics. To prescribe the right food at the right time is an art in itself. And to prescribe a diet which shall not transgress the limits of sugar-assimilation requires more than a passing knowledge of food constituents, and the methods of their preparation. As stated by me in a previous communication, the question of diet in diabetes is not so much one of restriction as it is one of regulation. It is not a question of how much is swallowed, as it is one of how much is absorbed. It is manifest, then, that from a dietetic standpoint there are two practices in vogue which should be condemned. Firstly, the danger connected with a one-sided diet, and secondly, the danger of latent starvation due to subalimentation. The former results from an inordinate indulgence in nitrogenous food, the latter from a too rigid exclusion of carbohydrates.

A proteid, or any other one-sided diet, cannot be indulged in for a long period with immunity. Path-

*Read at a meeting of the Eastern Medical Society, March 13, 1908.

ological effects will eventually manifest themselves. Physiologically, the economy shows no predilection for any one of the proximate food elements; each has its own service to perform, while all three are essential for the maintenance of a physiological equilibrium.

A continuous diet rich in nucleins will result in nitrogenous excess with its evil consequences, such as a subalkalinity of the blood, emaciation, a tendency to coma, irritation of the kidneys, cutaneous lesions, disturbed liver function, intestinal manifestations due to the large amounts of ingested extractives, arthritic affections, and autoinfections from toxins formed in the body. Further, the custom of overcharging the body with a nitrogenous diet may tend to the formation of lower oxidation products, such as the xanthin bases, which also may cause constitutional disturbances. In short, excess of proteids means excess of waste products.

If these changes are liable in healthy subjects, how much more liable are they to occur in diabetics whose physiological functions are below par for years?

The average healthy subject produces about 30 grams of urea in twenty-four hours, on a mixed diet. In diabetics, an increased elimination is the rule, due firstly, to the one-sided diet and secondly, to an increase of tissue-destruction. When a patient is on a rigid proteid diet, say 400 grams per day, which by the way, should be the maximum allowance, frequent tests for acetone and diacetic acid should be the rule. Positive reactions would point to a reduction of animal foods, and the exhibition of carbohydrates. So you see that the orthodox belief that diabetics should religiously eschew carbohydrates is not sanctioned by scientific analysis. Modern chemism has entirely upset that tradition. In point of fact there comes a time in the life of most diabetics when foods containing starches are absolutely essential. When the urinary index points to an acidosis or when progressive emaciation or an obstinate neuritis is a marked feature, such carbohydrate food as cereals, bread and potatoes, should be pushed to the limit of assimilation, in order to check the formation of the acetone bodies. It is an acknowledged fact that this latter group may put in an appearance even in healthy subjects when fed for a time on a nitrogenous diet. In grave cases of diabetes with alarming disturbances of the general nutrition, it is surprising how quickly some patients respond to the administration of cereals and vegetables with low sugar contents, even though the glycosuria persists. In the diabetes of the aged, this dictum is especially true. Too much stress should not be placed on the severity of the glycosuria, for this phenomenon is often a delusive guide to the patient's condition; more reliable as an index of the severity of the disease is the loss of nitrogen and the rapidity with which the body fat is burned up. An excessive acetonuria usually can be arrested by exhibiting measured quantities of carbohydrates beginning with 50 grams and going up to 100 grams daily. This behavior of the metabolic functions has not yet been explained. It is presumed that the end products of fat digestion and those of starch digestion are antagonistic in their final catabolism, or else the carbohydrates protect and prevent proteid loss.

Fat as an article of diet has a greater fuel value for diabetics than the other food elements, and besides it is the only one which does not influence the quantity of urinary glucose. It would seem on this account to be the ideal food for persons suffering from a disease accompanied by progressive emaciation. Fortunately diabetics assimilate fats well, especially those of low melting power, such as butter, cream, etc., and those of vegetable origin, such as olive oil and that derived from nuts. They must be employed cautiously, for overindulgence may be followed by intestinal putrefaction with the well-known symptoms accompanying this state, or by fatty diarrhea, gastric disturbances, dealkalinization of the blood, or fatty infiltrations. As generators of energy or body force, their nutritive value is about twice that of carbohydrates and of proteids. Unlike proteids they are completely burned up during metabolism.

Fats are especially indicated in the more serious cases. I refer to those subjects who excrete glucose even on a carbohydrate-free diet, and who exhibit the ravages of the disease by the gradual disappearance of the subcutaneous and adipose tissue and finally of the musculature. Here loss of weight and waste should be balanced by an increased supply of fuel; fats such as are contained in butter, cream, or meats are indicated. Likewise soups, cheese, oily nuts, fried meats, bone-marrow, codliver oil, eggs, salads with oily dressing, and edible oils. Recent investigations indicate that fats are largely concerned in the production of the acetone bodies, and further that this property is possessed by different fats in different degrees. The higher fats, palmatin, and stearin, it seems, are less prone to cause an acid intoxication than the lower fats such as olein and butyric acid. One observer declares that the acetone group could be suppressed by the employment of fats in the form of bacon, but that butter promotes their appearance. If this theory could be substantiated, namely, that certain fats suppress the formation of the urinary acetones, its clinical significance would be most important. It would mean that the danger of an acid-intoxication could be minimized. I purposely use the expression "acid-intoxication" in lieu of "coma" for the reason that it has always been a question in my mind to what extent this phenomenon could be held responsible for the coma of diabetics. It seems by common consent to have been accepted as an explanation for this fatal type of coma, but it cannot be regarded as established until certain clinical facts and pathological findings are better understood.

In a previous paper I made the statement that "We cannot logically accept the acid theory of coma until certain apparently contradictory events in diabetism are reconciled." I made that claim three years ago, and to-day in the light of more recent investigations I am more emphatic in that belief. The theory of the origin of diabetic coma that would more completely harmonize with the clinical picture and with the physiological data would be, to my mind, one based on the recognition of endogenous toxins formed somewhere along the intestinal canal, subsequently finding their way into the general circulation, then causing paralysis of the nerve-centers. Clinically, I have had evidence of this sequence of events in not a few cases; notably those diabetics who suffer from surgical diseases, such as carbuncle or gangrene, or who have submitted to surgical operations. Other evidence is the frequency with which the coma is preceded by gastroenteric phenomena. It seems to me that when the formation and elimination of the waste-products of nitrogenous metabolism are better understood and ready methods for their detection discovered, we shall be many steps nearer the solution of the problem of diabetic coma.

The investigations of Knoop of Strassburg have established the fact that the acetone bodies result from the metabolism of both proteids and fats, and

that the most probable method is through the oxidation of the fatty acids. The researches of Embden and of Baer and Bloom, cited by Folin,[3] make it appear that those fatty acids which contain an odd number of carbon atoms may become converted during assimilation into β-oxybutyric acid, which is the mother substance of the other acetone bodies, and the agent directly responsible for the presumable blood acidosis.

While fats and oils take first rank as sources of energy and heat, they must be administered slowly to the diabetic. A quantity should be allowed to satisfy the requirements of the normal organism plus the energy lost through glucose excretion.

Besides the danger of a one-sided diet, I have alluded to that of under-feeding. I think I am on safe grounds when I make the declaration that many physicians are starving their diabetics; the treatment practically amounts to a scientific inanition in which the patient innocently acquiesces. In many instances instead of supplying food of sufficient quantity and of definite quality to maintain a physiological equilibrium and to allow for waste and repair of tissue, the diabetic is allowed to consume himself. This statement especially applies to those diabetics with large excretion of acetones accompanied by a progressive emaciation. Such patients are too often the victims of a too rigid exclusion of carbohydrates. To require a diabetic to live on two elements of food to the exclusion of the third means consigning him to live on his own flesh and blood, in other words at the expense of his own body. Healthy assimilation and repair cannot long proceed in such a way; emaciation must ensue, and with it a diminution in the functionating power of all organs involved in catabolism.

As far as concerns the dietetic treatment, we should not lose sight of the one cardinal fact, that total or partial failure to assimilate carbohydrates is the salient phenomenon of the disease. The principle involved in the treatment, then, must be to lessen the carbohydrates in the food, until the sugar disappears, if that is possible, and afterwards tentatively to replace them, noting the effects of each addition on the urine, as a guide to future dietary measures. In order to carry this principle into effect it is necessary to ascertain experimentally the patient's ability to assimilate carbohydrates. For purposes of estimating, approximately of course, this tolerance, several methods are employed, the most familiar of which is that known as "von Noorden's standard test-diet." This diet consists of three meals, carried out for one or two days, of articles free from carbohydrates, except that a measured quantity of bread is allowed for breakfast and lunch. The urine of the next twenty-four hours is collected, that of the day in a separate vessel from that of the night, and examined quantitatively for glucose, acetone, urea, and other ingredients. Both the percentage of sugar and the amount daily excreted are noted and cases classified as slight, moderately severe, and grave, according to their degree of toleration. To the first class belong those diabetics in whom the excretion of glucose is arrested on a starch-free diet. To the second class, the moderately severe, belong those diabetics in whom the excretion of sugar is not completely arrested, but markedly diminished on a rigid starch-free diet. To the third class, the grave cases, belong those diabetics in whom the excretion of glucose is not even diminished on a rigid starch-free diet. In this last group of cases sugar is formed from the proteid food elements.

The method I usually employ for the toleration test is the following: On the test day three meals consisting entirely of proteids, fats, and water are given, but between breakfast and the midday meal, the patient is told to drink a mixture of 50 c.c. of glucose dissolved in 250 c.c. of water. The urine of the next twenty-four hours is examined quantitatively.

Experiments conducted along these lines will disclose some interesting individual peculiarities. Foremost it will be demonstrated that the tolerance for carbohydrates is relatively represented by a quantity which varies within wide limits in different subjects and at various times. Again it will be found that the same subject reacts differently to various carbohydrates, nor does the same carbohydrate article, be it a cereal, or bread, or potato, or alcoholic beverage, affect the diabetic system always the same way; this phenomenon it appears does not depend upon the chemical constituents of the food but rather upon the pathological state of the patient. Another fact brought out prominently in these test-meal experiments, is that this carbohydrate potentiality can often be developed to such a degree that diabetics whose capacity was at first almost *nil*, will under suitable regimen, exhibit a moderate capacity to metabolize starches. In other words we can train the system to digest sugars, just as in infantile life the digestive organs are trained, step by step, to digest proteids. Reasoning analogously, I think it could be proven, if the matter were to be investigated, that the tolerating point for proteids and fats fluctuates in certain diseases of the liver, the pancreas, and of the intestines, and is rarely a constant function.

Having ascertained the point of tolerance, the diet in individual cases will shape itself accordingly. If the examination of the urine makes it appear that the patient's tolerance is amenable to a selected diet, too great rigidity should not be insisted upon; on the contrary a slightly larger quantity of starches should be allowed than can be assimilated, care being taken that the overproduction of sugar does not exceed a one or two per cent. limit. Of course this principle of dietary treatment presupposes a working knowledge of the percentage-contents of starchy foods, the method of their preparation, and their fuel values. Incidental to this method of treatment, it will be advantageous to place the patient upon an exclusive proteid and fat diet for several days every month in order to ascertain to what extent the excretion of sugar can be controlled and to purge the system of the redundant glucose. These periods of starch-abstinence at regular intervals exert a good influence toward increasing the power of assimilation and maintaining nutrition. Experience has shown that the capacity for sugars grows less and less the longer the diet remains unrestricted, while such evidences of the disease as ulcerations, skin manifestations, pruritus and thirst are directly due to the excess of glucose in the blood.

From a dietary point of view diabetics may be divided into two classes; those with slight disturbances of nutrition, and those with marked disturbances of nutrition.

To the first class belong those whose nitrogenous balance is undisturbed, but who have lost to some extent the power of metabolizing starches. These cases are amenable to diet. Considerable dietary laxity may be permitted under proper surveillance. The second class, those with marked nutritional disturbances, an excretion of glucose even on a starch-free diet, and rapid loss of weight, require all types of the food-elements—proteids to repair waste, fats to supply heat and energy, carbohydrates in quanti-

ties to sustain a normal blood alkalinity, and alcohol as a force-producer on account of its easy absorption.

Regarding the various so-called "diet-cures," such as the oatmeal, the potato, the skimmed milk cures and a host of others, I must record myself as having little faith in their value, despite the extravagant claims of the authors. When I read of cases that defied all treatment but showed marked and rapid improvement on potatoes or oatmeal gruel, it seems to me that the general restrictions of diet, that forms a part of these methods, were mainly responsible for the diminution of the glycosuria. Take the potato cure of Mossé for example; the latter claims that the beneficial results of potatoes are due to their large quantity of the potash salts, yet I have employed potash salts *per se* in selected cases without ever noting any improvement. It seems a contradiction to speak of any article of food as a specific when the whole range of therapeutic resources has been well-nigh exhausted in the search for a remedial agent.

A word regarding recent efforts to compute numerically the fuel values of the food elements, and to employ these coefficients in feeding diabetics. An ingenious theory of feeding patients upon the basis of calories has been elaborated, but as was to be expected, the results of the practical application of this method were disappointing. My own experience was that patients would always balk at this method of feeding. The caloric theory, although more or less convincing, has not yet arrived at a stage where it is possible to make a mathematical problem of the functions of digestion. Such a unit of value is empirical and arbitrary at the outset and does not take into consideration the disturbing influences of age, sex, habit, occupation, severity of the disease or its complications. It ignores the fact that the human machinery may be so out of gear, during disease, as to upset all our calculations, nor is there any assurance that the food doled out in measured quantities will go right to the spot unaffected by the morbid state of digestion.

You cannot calculate the wants of the economy with mathematical precision and you cannot make an algebraic equation out of the stomach and its functions. It might be done with large bodies of men in health, but not with individuals in disease.

The feeding of diabetic patients to-day permits of considerable latitude as to choice of articles; a fact which is in marked contrast to the privations insisted upon in former years. When the methods of testing for urinary constituents are simplified and made available for clinical purposes, we shall have more reliable means of prescribing a diet for diabetic sufferers. It is to physiological chemistry that we must look for great things; both pathology and bacteriology are even to-day of inferior importance.

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1309 MADISON AVENUE.

Infant Feeding in the English Slums.—How some mothers in factory districts feed their babies was related by a medical man at a meeting of the Ancoats Healthy Homes Society the other day. He said: "I was called to see a sick baby, and found the mother feeding it with pieces of corned beef. When I told her not to give the baby that kind of stuff she replied: 'Well, sir, what am I to feed him on? He doesn't like pork'!"—*Medical Times and Hospital Gazette.*

SPONTANEOUS GANGRENE OF THE FOOT DUE TO ENDARTERITIS OBLITERANS.*

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GANGRENE or local death of any part of an organism is always due to a loss of the supply of blood, caused by some obstruction in the main artery of the region. The artery itself may be normal; and then the obstruction may be due either to an embolus carried over with the stream of blood, as in gangrene in patients with a lesion of the heart or aneurysms, or else to an abnormal contraction of the muscular layer of the arterial wall, caused by some abnormality of the vasoconstrictor nerves, as in gangrene in Raynaud's disease.

If the walls of the artery are diseased, then the obstruction is due either to progressive narrowing of the lumen by the proliferative inflammatory process or else to a thrombus which forms on the inner surface of the diseased wall.

Recent investigations have shown that arteriosclerosis is not necessarily a general disease, but that the blood-vessels of certain organs (brain, lungs, stomach) may be diseased, while the circulatory system of the entire organism may be normal.

Senile gangrene of the foot, or gangrene in the course of diabetes or acute infectious diseases (typhoid, typhus, scarlet fever, etc.) usually occurs in patients whose whole circulatory system is more or less involved in the disease process, but the so-called spontaneous gangrene of the foot, due to arteritis obliterans usually attacks young people whose arterial system is perfectly normal.

The disease does not occur frequently. Wartburg[1] in his report of fifty-two cases of spontaneous gangrene of the extremities, due to different causes, mentions only three cases due to endarteritis obliterans. It ought to be stated here that while some writers use the name spontaneous for every gangrene, unless due to trauma, frost-bite or other extraneous causes, others again mean by a spontaneous gangrene only gangrene due to endarteritis obliterans.

The cases reported so far differ widely as to the etiology and the anatomical appearance of the involved vessels, and consequently as to the interpretation given by the author. Every new case occurring in practice ought to be investigated so that more light may be thrown on the etiology and pathogenesis of this obscure disease.

The case that is to be reported here presents anatomically certain deviations from the general appearance of these cases, which seem to indicate the right pathogenesis of the disease.

The patient, Mr. L., thirty-five years of age, came to me complaining of severe pain in the right big toe and leg, lasting for about eight weeks. On examination I found the patient poorly nourished and anemic. The right leg and foot were paler than the left and cold and clammy to the touch. There was a small gangrenous spot on the inner surface of the nail phalanx of the big toe. No pulsation in the arteris dorsalis pedis or tibialis postica; faint pulsation at the upper section of the popliteal. Otherwise the patient had no organic disease, no heart lesion, tuberculosis, Bright's disease, diabetes, congenital or acquired syphilis, and no indication of general arteriosclerosis. I made a diagnosis of spontaneous gangrene due to endar-

*Presented in brief at the New York Pathological Society, January 15, 1908.

teritis obliterans and advised amputation at the knee joint. At the urgent request of the patient I amputated first the toe. Gangrene developed on the line of incision, and two weeks later I amputated the leg at the knee joint. The patient made an uneventful recovery.

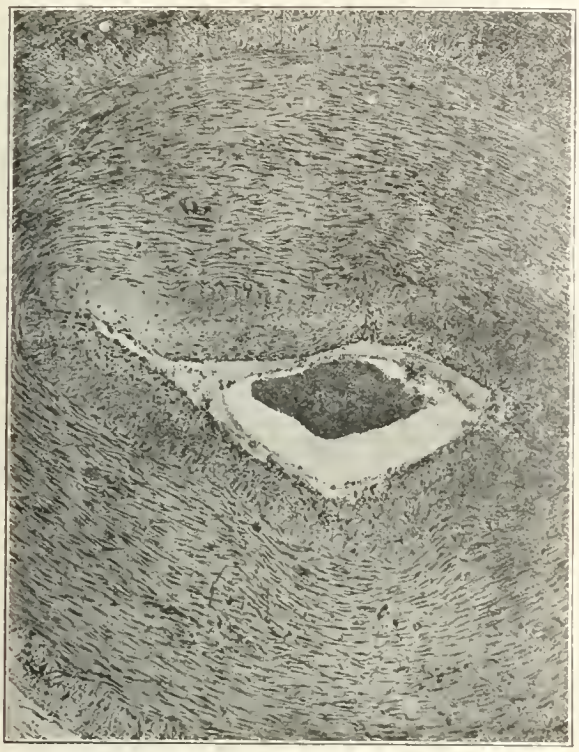

Fig. 1.—Wall of an artery; muscularis thickened.

On gross examination all the arteries of the leg appeared very hard and unelastic. Microscopical sections were taken both from the upper part of the tibial artery and from the stump of the toe. I take here the opportunity to thank Dr. J. H. Larkin for his help in the preparation of these specimens. Study of the specimens reveals the following condition: The walls of all the arteries as well as of the veins are greatly thickened. This thickening is due mainly to the middle muscular coat. The intima is only occasionally found thickened, usually in the vessels of very small caliber, and this thickening is insignificant in comparison with the thickening of the muscularis. The lumen of the vessels, while always diminished, is completely occluded only in vessels of small caliber. Both the tibialis and dorsalis pedis are patent. Most of the veins contain organized or unorganized thrombi; but there is no thrombus formation in the arteries. There was also noticed connective tissue formation in the sheaths and the intrafascicular bands of the nerve fibers.

The microscopical picture of the blood-vessels in this case differs in many respects from those found by other observers. But there is generally no apparent uniformity in the anatomical condition underlying the disease, if the different descriptions found in the literature are studied separately. Winiwarter[2] and Borchard[3] consider the condition mainly a thickening of the intima, which obstructs the lumen of the main artery and produces gangrene. Zoege v. Manteuffel,[4] Weiss[5] and Bunge[6] hold that in this affliction the intima becomes diseased, and on the diseased endothelium there forms a thrombus which obstructs the artery and produces gangrene. According to their opinion the lumen of the vessels can never become occluded by the thickening of the wall of the vessels alone without the formation of a thrombus. Haga[7] describes cases both with and without thrombi. Wulff[8] and Sternberg[9] both report cases which presented microscopically the identical appearance with the case reported here. The most important factor in the narrowing of the lumen of the vessels was the hypertrophy of the muscularis, while the growth of the intima was comparatively slight.

When the same disease clinically presents such apparently different anatomical pictures in different cases, the question must immediately arise, whether these different pictures do not simply represent different stages of the same disease. Wiedenmann[10] explains the progress of the disease in the following way: First, the lumen of the artery is narrowed; subsequent to this stasis forms in the circulation of the capillaries and veins; then the stasis causes formation of thrombi in the veins, and then only thrombi form in the arteries. This explanation certainly has the merit of unifying in a way the different anatomical pictures found by different observers. But it is still easier to correlate all the different anatomical conditions when one takes into consideration the following two facts: First, Wwedensky[11] in his very painstaking studies, came to the conclusion that changes in the blood-vessels are always preceded by disease of the nerve apparatus of the extremity. This opinion is of great importance, as it embraces the investigation of a number of cases. Most of the other observers did not examine the nervous system. In my case, as was stated above, there was found a connective tissue proliferation around the nerve fibers. The other fact to be considered before we

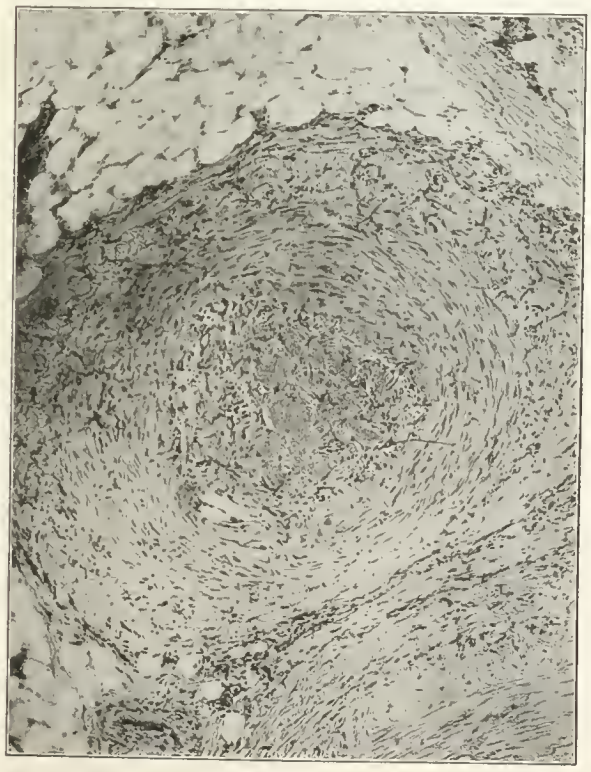

Fig. 2.—Wall of a vein; organized thrombus.

undertake the analysis of the microscopical pictures described, is the close clinical relationship between the spontaneous gangrene due to arteritis obliterans, the so-called "intermittent claudication" and Raynaud's disease. The main clinical symptoms of the latter disease described first by Rey-

naud[12] in 1862, consist in vasomotor disturbances and local pain, which may last for years before gangrene forms. The most characteristic feature of Raynaud's disease is that, even when gangrene is present, absolutely no anatomical lesion can be shown in the walls of the blood-vessels. As Hugo Strauss[13] states, the gangrene is caused either by *spastic ischemia,* with subsequent death of tissue due to lack of food, or by *spastic cyanosis,* with gangrene caused by autointoxication. In other words, the diseased nerves do not affect the tissue primarily, but contract the muscularis either of the arteries, and produce ischemia, or of the veins, with subsequent cyanosis.

Intermittent claudication, "intermittirendes Hinken" of the German authors, was first described by Charcot[14] in 1858. The name is derived from the fact that this disease, which mostly involves the lower extremities, is accompanied in its very early stages by an intermittent limp. The patient feels well, but after he walks a certain time the limb

Fig. 3.—A bundle of nerve fibers; a great deal of connective-tissue proliteration.

becomes painful and weak; he tries to protect it and limps. The same symptom is still more apparent in horses, who suffer very frequently from this disease.

Now intermittent claudication and spontaneous gangrene due to arteritis obliterans are practically the same disease, only in the former cases no gangrene has yet developed. The difference between both these conditions and Raynaud's disease lies in the fact that while in the latter there is no anatomical lesion in the blood-vessels, such lesions of one kind or another play the most important part in the pathogenesis of all cases of intermittent claudication or of spontaneous gangrene due to arteritis obliterans. Clinically it is not always possible to differentiate these conditions. While intermittent claudication occurs usually in the lower extremities, cases have been described where it involved the upper extremities, and lately a very similar condition with endarteritis of the arteries was noticed in the abdomen (Das arteriosklerotische Leibweh—Buch[15]; l'Arteriosclérose intestinale—Cheinisse[16]). The absence of pulsation in the corresponding artery is pathognomonic for the disease, but on one hand there are positive cases of intermittent claudication with the pulsation present, and, on the other, in cases of true Reynaud's disease, pulsation may disappear temporarily. It is also not always possible to determine by touch whether a certain artery is sclerotic or normal.

The following case illustrates these difficulties:

Mrs. S., aged twenty years, married, born in Russian Poland, came to me with complaints of constant pain in the middle finger of the left hand, lasting for a year and a half. The pain is severer when she goes out in the cold and also on nervous excitement. Six months ago the finger was cyanotic for about six hours, and then edematous for the rest of the day. The next day it became normal. Pulsation present; arteries do not feel abnormal on touch. She has no general arteriosclerosis, no syphilis or other constitutional disease, no disease in the bones or joints or any other part of the finger. The pain does not increase on pressure. While this case is certainly one of arterial disease, it is impossible to say whether it is the beginning of Raynaud's or intermittent claudication.

But the question arises whether there is really such a qualitative difference between these various groups, or whether they simply represent different stages in the same disease.

Such a close relationship between these different groups of disease would be very easy to detect, if one accepts with Wwedensky the lesion of the nervous system as a primary pathogenetic factor. Should the diseased part be the vasoconstrictor fibers of the vasomotor nerves, then the first effect on the blood-vessels would be a narrowing of the lumen through a spastic contraction of the muscularis, a condition we meet in Raynaud's disease. Such a continuous spasm would be followed by hypertrophy of the muscularis as described in this article and by Wulff and Sternberg. On the other hand, a spasm of the muscularis through interference with the circulation of the vasa vasorum may interfere with the normal nutrition of the walls of the vessels and produce both proliferative and degenerative changes in the intima. Whatever the reason for the narrowing of the lumen of the artery —spasm or hypertrophy of the muscularis or fibrous proliferation of the intima—there will develop to the periphery of the narrowed place a stasis with subsequent thrombus in the veins. The thrombi met with in the arteries either may be secondary to a complete stasis produced by a venous thrombus, as Wiedenmann describes it, or else the arterial thrombus may be formed in the artery, secondary to a degenerative process in the endothelium. It is self-evident that gangrene may be caused by any of these processes obstructing the lumen of the artery from a plain spasm to a thrombus. It may be interesting to mention here that Carrel and Guthrie[17] in their research on experimental arteriosclerosis also noticed, as one of the first conditions, hypertrophy of the muscularis.

As to the etiological moment producing the disease, there is no uniformity of opinion, nor are we able to indicate any one factor as playing the most important role. Haga[17] thinks that the disease is due to syphilis only. Zoege v. Manteuffel considers the most important factor to be *cold,* and ascribes the prevalence of the disease among Russians to the fact that they live in a cold climate. Erb[18] in studying a great number of these cases

came to the conclusion that while very little importance ought to be ascribed to syphilis, alcohol or cold, the excessive use of tobacco is the real etiological moment. But there are certainly cases of the disease where tobacco was used in moderation or not used at all. Oppenheim[19] and Goldflam[20] seem to lay a great weight on the nervous disposition of the patients, but, as Erb rightly remarks, the prevalence of men speaks against this reason. Most probably in different cases there act different combinations of different etiological factors. In the case reported here there was probably a combination of general malnutrition, overwork of the limbs (a great deal of walking), cold (a damp place of business), and some excess in the use of tobacco.

The treatment of these cases ought to be preventative, *i. e.* before gangrene develops. This should consist in removing the use of alcohol and tobacco and further in improving the general nutrition and the circulation of the limb, without doing anything which overexerts the muscles, like strong massage. If gangrene develops and we do not find any pulsation in the tibial artery, then Zoege v. Manteubel is right in stating that nothing short of an amputation at the knee joint will arrest the process.

While spontaneous gangrene of the foot, due to obliterative arteritis is a rare disease, it would be well for physicians to bear it in mind and, when a patient comes complaining of a constant pain in a toe or finger or even an occasional painful cramp in the muscles of a leg, to examine the arteries of the extremity. It is also well to keep this disease in mind while treating cases of diabetes and senile arteriosclerosis; with proper care an occasional case of gangrene may be prevented from forming.

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So-called Temperance Beverages.—The British Government analyses show a very high percentage of alcohol in many of the favorite beverages of teetotalers. The law makes drinks containing more than 2 per cent. of alcohol taxable as intoxicants, but most of the samples examined contained more than this amount, sometimes as much as 10 to 12 per cent. Ginger beer and herb beer were the worst offenders, but one preparation called dandelion stout contained 12.3 per cent. of alcohol.

THE RELATION OF APPENDICITIS TO GYNECOLOGICAL PELVIC DISEASES.*

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There are conditions occurring in the right lower quadrant of the female abdomen which at times so simulate each other as to symptomatology that, in the early stages especially, a differential diagnosis is sometimes difficult. Certain cases of ectopic gestation and of ovarian cysts with twisted pedicle may render a differential diagnosis from appendicitis necessary, but the most frequent conditions in which doubt exists are acute, subacute, and chronic appendicitis as distinguished from acute, subacute, and chronic inflammatory diseases of the adnexa. In so far as the appendix and, in part, the adnexa are covered by peritoneum any infection of the peritoneum may involve both of these structures. For the very same reasons the element of physical contact comes into play. There are instances of inflammatory involvement of the appendix, in which the structure is so situated that it becomes attached to the uterus, the tube, or the ovary. There are, on the other hand, conditions involving the tube and ovary and even the uterus, in which adhesion of an uninflamed appendix to these structures results. The element of situation not alone brings these two structures into relation, but makes the differential diagnosis at times difficult.

There are cases of acute gonorrheal involvement of the tube with more or less extensive peritonitis in which the differential diagnosis from appendicitis is not made. Instance the case of a patient married only five weeks, suddenly attacked with pelvic pain and diagnosed as appendicitis. Having been made cautious by previous experience, a vaginal examination was made, and this plus the use of the microscope resulted in the diagnosis of double pyosalpinx due to gonococci, which diagnosis was readily verified by questioning the husband. Operation showed the omentum adherent to the right tube at the uterine horn and some of the epiploic appendages of the sigmoid adherent to the left tube, near the uterine horn. The intestines were not markedly injected. Both tubes were the size of the little finger at the uterine horns and their outer ends were the size of the thumb, adherent to the posterior wall of the broad ligament and to the posterior wall of the ligamentum infundibulo-pelvicum. The broad ligament was not much thickened. During the enucleation of the left tube and ovary, pus poured out which was caught with sponges. The tube and ovary were very adherent. The ovary was hard, contained little cysts, but did not seem macroscopically to be infected with pus. The right tube and ovary were found relatively in the same position and were released from adhesions by finger dissection and brought out into the abdominal wound. The uterus was not congested nor red, but seemed large, looking like a pregnancy of about six or seven weeks. The appendix was red and congested. It was removed and the stump was buried. Before completing the operation adhesions of the sigmoid to the lower half of the uterus were loosened by blunt dissection by the fingers which left a rough denuded area of peritoneum about two and one-half inches long and one inch wide. This

*Read as part of a Symposium at a meeting of the East Side Physicians' Association.

was closed by six interrupted sutures. The pus was examined and gonococci were found.

Now cases of this acute nature, and especially cases of a subacute nature, may result in such a situation of the adnexa of the right side that only operation can definitely settle the original site of the inflammation, as is evidenced by the following case. Diagnosis: Retroflexio-versio fixata, pyosalpingitis with adhesions on both sides and high up. Because of the fixed uterus, because of its high position, because of the high lateral situation of the fixed tubes and ovaries, an abdominal operation was done. The uterus found in fixed retroflexio-versio, adherent to the sigmoid, the upper part of which was firmly adherent to the right pelvic brim at the situation of the ligamentum infundibulo-pelvicum. With the hand the left tube and ovary were loosened from their adhesions to the posterior wall of the broad ligament and to the postero-lateral wall of the pelvis, just below the ligamentum infundibulo-pelvicum. The uterus was then grasped with a volsellum. It was impossible to pull it up in the wound because of the short right broad ligament. The adhesions were separated on the posterior wall of the uterus to the sigmoid; they were thick, infiltrated, and brittle and bled readily. The right tube and ovary were not adherent to the posterior wall of the broad ligament. By following the course of the tube it was found that the ovary was attached to the brim of the pelvis about an inch below the appendix and that it was covered by the sigmoid flexure. Epiploic appendages completely covered these adhesions of the sigmoid. The sigmoid was loosened with the finger and then the ovary was dissected out by passing the finger around and underneath it, after which it was freed from its attachment to the posterior wall of the ligamentum infundibulo-pelvicum. The appendix, which was long, thick, infiltrated, and covered with adhesions, was then removed.

So far as the appendix with its peritoneal covering is concerned, it is perfectly natural, as we have seen, to expect that inflammatory involvement of the adnexa with which a peritonitis is associated, may by contact or direct continuity involve the appendix together with other intestinal structures in peritoneal adhesions.

An imporant question is: Do milder inflammatory diseases of the adnexa cause appendicitis? Continuing out from the broad ligament along its upper border and extending to the lateral wall of the pelvis and running up practically to the base of the appendix, is situated the right ligamentum infundibulo-pelvicum. This structure as well as the broad ligament is rich in lymphatics and it has been stated that involvement of the adnexa may permit an extension of bacteria through these lymphatics up to and involving the appendix. While this opinion has been expressed by more than one observer it must be remembered that appendicitis is an affection which occurs from the lumen of that structure and that bacteria passing up through these lymphatics, while they might cause infiltration or induration about the cecum, are not responsible for the occurrence of acute or subacute appendicitis. Those men who make it a routine practice to remove the appendix in all abdominal gynecological operations are in a position to verify this assertion. I myself have never been able to observe an extension of disease occurring by this lymphatic path. I may state on the authority of Dr. Boldt, who has had dozens of such appendices examined, that inflammatory diseases of the right adnexa stand in absolutely no causal relation to the production of inflammatory involvements of the mucous membrane of the appendix. This point may be illustrated by the following case:

Diagnosis: Fixed retroversion, double salpingo-oophoritis with adhesions. History of abortion, followed some time later by a profuse yellowish cervical discharge. The left tube and ovary were situated rather high up. Abdominal operation was selected for this reason, and because of the probability of adhesions. The intestines were free everywhere, except for adhesions to the left ligamentum infundibulo-pelvicum. The broad ligament was thickened and both ligamenta infundibulo-pelvica were as thick as the little finger. The left tube and ovary were loosened from their adhesion to the posterior wall of the ligamentum infundibulo-pelvicum. The ovary was covered and bound down by numerous adhesions. The tube near the fundus contained a nodule the size of a hazelnut. Diagnosis was made of salpingitis isthmica nodosa. The tube was cut by a wedge-shaped incision out of the uterine horn. This incision was closed by four mattress sutures. The right tube and ovary were then freed from adhesions situated in relatively the same position. A special suture was placed around the ligamentum infundibulo-pelvicum. The right tube was found also to have a nodule in the same location about three-quarters of an inch from the uterine horn. The tube was cut out of the uterus by a wedge-shaped incision. The wedge-shaped incision was closed by three mattress sutures. A band of adhesions fully two and one-half inches long and one inch wide extended from the posterior wall of the left side of the uterus to the sigmoid. This were loosened from the uterus by blunt dissection and the cul-de-sac was then found free. The appendix was readily found by following the left ligamentum infundibulo-pelvicum upwards. The appendix, slightly congested and edematous, was removed. With this marked infiltration of the broad ligaments and the ligamenta infundibulo-pelvica no induration or infiltration was found about the cecum or appendix.

The question under discussion takes on quite a different phase when we consider diseases of the adnexa as possible sequelæ of appendicitis. Take for instance the question of tuberculosis. Tuberculosis of the tube and ovary may occur by upward extension of tubercle bacilli through the cervix, or tubercle bacilli may be deposited through the medium of the circulation, or tubercle bacilli may involve the tube and ovary subsequent to their presence in the peritoneal cavity. Whatever may be said as to the occurrence of such an infection through the first two channels, it is undoubtedly true that in the vast majority of instances tuberculous involvement of the appendages occur subsequent to the presence of tubercle bacilli in the peritoneal cavity, with or without macroscopic evidences of tuberculous peritonitis. The tubercle bacilli when present in the peritoneal plasma are carried into the tube lumen by the action of ciliated epithelium, and however much or little the peritoneal covering may be involved by tuberculosis, the lumen of one or both tubes is rarely free of tubercles. I had the opportunity on one occasion to make microscopic sections in a case of tuberculosis of the adnexa in which the appendix was removed. The appendix on examination contained tubercles and giant cells, and they were not present on the peritoneal surface, but were present in the structure and lumen of the tube so that the tuberculous ap-

pendicitis was part of the primary condition and the tuberculous adnexitis was secondary.

Now, as to the question of appendicitis. When an involvement of the appendix takes place and there occurs an associated peritonitis more or less localized or more or less diffuse, we are dealing principally with streptococci or bacteria coli in the peritoneal exudation. This exudation need not be great or extensive, it need not extend down deep into the pelvis. It may be slight and localized immediately around the appendix, for the action of the ciliated epithelium in the tubes attracts towards the adnexa and takes up into the tube lumen these infecting bacteria. Here we have the possibility of an involvement of the peritoneal covering of the tubes and especially the possibility of an involvement of the ovary and its Grafian follicles.

Personally, I have for a long time noted the occurrence of tubal and particularly ovarian involvements, generally infecting the right side, which occurred in patients in whom an infection from below could be almost excluded. In addition these involvements were not all of a nature which spoke for gonorrhea and the tube was generally open. They occurred in individuals at a period of life when the lesions could not be referred to the infectious diseases of childhood, and the history in many cases pointed distinctly to previous mild or more severe involvements of the appendix. Thus, I came to the conclusion that the bacteria thrown out in the peritoneal exudation resulting from appendicitis produced an involvement of the uterine adnexa. This involvement naturally varies in different individuals, according to the susceptibility of the peritoneum to inflammation and adhesions, according to the virulence of the bacteria, the resistance of the patient and other factors which we are at present unable to determine distinctly.

It might be expected that evidences would be present in the genitourinary tract which could definitely settle for us in all cases the point from which the infection started; but we all know that, especially in subacute and chronic cases, evidences in the cervix and uterus may be almost wanting and the point of origin is for that reason sometimes doubtful. The history of previous attacks does not give always a definite picture pointing clearly either to appendicitis or to infection of the adnexa, and only the evidences at the time of operation make the differentiation. I mention the case of a patient suffering for years from right-sided pain, in whom the diagnosis made by several men varied between salpingo-oophoritis, chronic appendicitis, and both. Vaginal examination showed a right salpingo-oophoritis, the adnexa were fixed high up on the posterior wall of the ligamentum latum. The appendix was sensitive and was diagnosed as involved with the right salpingo-oophoritis. The abdominal route was selected because of the involvement of the appendix and because of the desire to fix the uterus high up on the abdominal wall in case a conservative operation was indicated, and possibly to sew the ovary through a slit in the broad ligament to the anterior wall of the ligamentum latum. The right ovary was found enlarged and cystic, containing especially one very large Graafian follicle cyst. The tube was found closed and adherent. The outer half was resected and a large artificial abdominal end was made. Three-quarters of the ovary was resected and closed by interrupted catgut sutures, one mattress suture being placed across the hilus ovarii. Then the ligamentum infundibulo-pelvicum was shortened by the excision of a V-shaped piece, which, with the shortening of the left ligament, left the uterus in a fairly good position. The appendix was found enlarged and bound down by numerous adhesions about the mesoappendix. It was removed. A ventral suspension was done.

The form of pelvic disease very frequently resulting from appendicitis is shown by the following case. Diagnosis: Double salpingo-oophoritis without adhesions; uterus in normal anteflexion. Operation done for pelvic pain. Both tubes were found somewhat congested, but the outer ends were open. The broad ligaments were extremely varicose. The right ovary was enlarged and full of small cysts with very thin coats. Three-quarters of this ovary was resected and closed with interrupted catgut sutures. The left ovary seemed fairly normal but contained many small cysts. It was left in place. The appendix was then looked for and was found at the normal situation. It appeared like a lump the size of a small walnut and perfectly round, with the exception that it had a base which ran into the cecum. It looked more like a gland than an appendix. By cutting the peritoneum along its median margin and by dissecting this back with gauze it was found to be a thick appendix the size of a lead pencil, extremely hard and firm, doubled on itself, and firmly adherent. With the scissors the united sides were separated, whereupon the lining mucosa was exposed, but the lumen was not cut into. The appendix then appeared to be about two inches long, extremely hard, especially at the base, which seemed to project into the intestine, making a mass within the intestine about the size of a hickory nut. The appendix was cut off close to the base and inverted by peritoneal suture in the cecum. Three other interrupted sutures were passed over this, closing the appendix area very thoroughly. Practically no mesoappendix existed, but a bleeding artery was exposed which was tied by a ligature.

After observing many cases in which this causative appendicitis explained for me certain milder involvements of the tube, and especially cystic changes in the ovary, I finally chanced upon the following unusual case: Diagnosis of right ovarian cyst. Abdominal operation was done because the patient was a nullipara, because the cystic tumor, the size of an orange, was fixed laterally to the pelvic wall, and because the left ovary was likewise fixed laterally to the pelvic wall. On opening the abdomen, the omentum was found fixed to the anterior abdominal wall to the right of the line of incision. The omentum was found adherent to the right horn of the uterus, to the right side of the bladder, to the anterior abdominal wall, and to the ligamentum infundibulo-pelvicum on the right side. It completely walled off the appendix and the right tube and the ovary from the general peritoneal cavity. No other adhesions were found here, but later the left tube and ovary were found bound down and covered by loose, very thin, and stretchable adhesions. The omentum was tied, cut, and pushed upward into the abdominal cavity. The right ovary was found adherent and contained one large cyst the size of a very large egg. In loosening it from its adhesions the cyst broke and a clear fluid flowed out, leaving the ovary still the size of an egg. The tube was not thickened or infiltrated. The adhesions to the ligamentum infundibulo-pelvicum and the posterior wall of the ligamentum latum were loosened. Two ligatures were placed around the ligamentum infundibulo-pelvicum and two mass sutures from the middle of the broad ligament were tied to either side of the tumor, an extra suture be-

ing placed at the uterine horn after the tube was cut out. The tumor was then removed. The other tube and ovary were brought out from their adhesions, and the adhesions between the tube and the ovary were loosened. The abdominal end was found open. One-half of the ovary which was cystic was resected and closed with interrupted sutures.

In the course of this operation I expressed the opinion that the inflammation was not gonorrheal because of the character of the adhesions, because the tubes were not infiltrated, and because the tube ends were open. The opinion was expressed that the adhesions were probably subsequent to an appendicitis. The cecum was then drawn out and numerous long, flat, thin, web-like adhesions were found. The appendix was one and a half inches long and was separated completely for the space of one inch from the cecum. The blunt separated end was connected with the cecum by adhesions of the same sort as were present about the appendix. The appendix and its mesoappendix were tied and cut through the adhesions connecting the blunt end with the cecum. Here the appendicitis had caused a spontaneous amputation of the appendix and had produced the associated pelvic peritonitis.

The form of pelvic disease most frequently resulting from mild appendicitis is not associated with adhesions of the adnexa. The broad ligament or ligaments are varicose and the ovary is cystic. The appendix shows constrictions or adhesions.

Pain in the right or left sides or both sides, but especially in the right side, is frequently due to a structural involvement of the ovarian tissue without the presence of adhesions or closure of the tubes. With this is very frequently associated a varicose condition of one or both broad ligaments or a shortening of one or both ligamenta infundibulo-pelvica. This condition of varicose veins of the broad ligament may be due to thrombotic or other changes subsequent to curettage or to mild and often unrecognized infections extending into the parametrium from the cervix or uterus, post partum or after abortion. These may be responsible, through circulatory and inflammatory disturbances, for changes in the structure of the ovary and for the production of small cystic degeneration or cirrhosis. It is certain that appendicitis too may cause such a change in the broad ligament and may produce inflammatory changes in the ovary. These are often found on the right side combined with a special symptomatology and with a shortened ligamentum infundibulo-pelvicum. This pathological involvement of the ovary and broad ligament of the right side is often noted at operation to be associated with involvement of the appendix and the mesoappendix. The ovary may be altered in size and contain cysts. The tunica albuginea may be thickened and the stroma may be indurated so that the term cirrhotic ovary seems justified occasionally. The characteristics of this ovarian involvement are not modified greatly by the symptoms of involvement of the appendix. So far as the ovary is concerned, there is a steady, gnawing, burning pain, which often radiates into the thigh or extends upwards towards the ribs or which may be felt in the iliac bone. The pain is more noticeable after walking or on exertion, and is therefore most marked at night. During the week preceding menstruation it increases in intensity and on the establishment of menstruation it may grow less or it may continue. An associated annoyance is nausea which may be felt before, during, or after menstruation. The pain felt in the ovarian region may, at some menstrual periods be marked, at other periods less severe. The reason for these symptoms can be readily understood. We are dealing with an ovary altered in structure, and with a varicose broad ligament. Menstrual congestion produces a hyperemia in these structures, and pain is therefore increased during the premenstrual period. If a follicle ripens in the involved ovary, the pain is more severe. If the tunica is thickened, the rupture of the follicle is prevented and the follicle increases in size. Rupture of the follicle eases the pain. Bimanual examination at an intermenstrual period may show nothing palpably except a sensitive ovary. It may, if frequently repeated, show the period of greatest pain to be associated with the presence of an enlarged ovary and an unruptured follicle. Women with these alterations may suffer for months and years with this almost constant, but not very severe pain, which eventually has a harmful and injurious effect on their physical and nervous state. Even though this ovarian pain is most frequent in women with a sensitive nervous system, and even though the pain is caused by the functional congestion of menstruation and by ovulation, nevertheless it is this function, carried out in an ovary altered even though slightly as to its stroma and tunica, which causes the local annoyance. Often enough there is associated a uterine displacement or enteroptosis or ren mobilis which are considered the cause of the pelvic annoyance. When these patients are finally reduced to a state of nervous and physical asthenia, the diagnosis varies from appendicitis, movable kidney, nephrolithiasis to neurasthenia and hysteria. A close study of the history of the case, of its development and of its course, shows the annoying symptoms to be related to the functional activity of the ovary. Sometimes these cases are correctly classed under ovarian dysmenorrhea. More often the appendix is removed through a small incision or an Alexander Adams operation is done or a movable kidney is fixed and naturally enough the symptoms continue. It is certain that predisposition to asthenia makes patients more sensitive to pain and that alterations in the ovary need not be marked to produce the symptoms mentioned above. On the other hand, the long duration of pain is sure to intensify the asthenia predisposition and may bring on a state of semi-invalidism.

Conclusions.—My conclusions are as follows: (1) Appendicitis in the form of an inflammation of the mucous membrane does not result from inflammatory diseases originating in the uterus or adnexa. (2) Involvement of the appendix viewed as a peritoneally covered organ may take place as part of a peritonitis, more or less localized or more or less extensive, which has its origin in inflammatory diseases of the adnexa. (3) Severe inflammations of the appendix, in so far as they cause a pelvic peritonitis or in so far as the accumulation of pus is located in the pelvis, naturally involve the uterus and adnexa in adhesions, do not cause pyosalpinx, but may cause tuboovarian cysts. (4) A differential diagnosis as to original site of the infection, when the appendix and right adnexa are involved, is often impossible except from the operative clinical standpoint and even then is not always certain. (5) Mild attacks of appendicitis, without the production of well defined peritonitis, may involve the adnexa without adhesions, but especially by infection of the Graffian follicles, alterations of the stroma and the production of varicocele of the broad ligament. (6) Such alterations in the ad-

nexa generally result from processes extending from the cervix and uterus into the broad ligaments and a definite decision as to the source of the trouble may be often impossible.

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BLOOD-PRESSURE IN THE PRACTICE OF MEDICINE.

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Blood-pressure is the force exerted by the blood upon the cardiovascular walls. This pressure may be supernormal, normal, or subnormal. Any aberration of blood-pressure produces a pathological condition. Therefore, it will be necessary in taking up this subject to consider the various phenomena peculiar to this condition. Dr. Ludolf Krehl, of Strasburg, has made the following observations: stimulation of the peripheral nerves will normally cause reflex arterial contraction and rise of blood-pressure. Nervous impulses from the heart are able to affect the size of the blood-vessels and in a measure regulate the work of that organ. The degree of contraction is dependent on the impulses they receive. As the arteries leading to certain parts of the body dilate and contract, the blood supply to that part is altered." These observations are confirmed by some authorities and denied by others, so it leaves one to investigate for himself.

The study of blood-pressure in lower animals has been very unsatisfactory because of the low scale of the organism. Experiments on normal man have produced some good results, but the only reliable study of blood-pressure disease is the disease itself.

The pathology of abnormal blood-pressure will be dealt with summarily. Blood-pressure may be, primarily, the etiological factor, or, secondarily, the sequence of pathological conditions. When blood-pressure is the causative agent, it produces at first a hyperemia of the capillaries and arterioles, and causes a leakage into surrounding tissue. Long continued congestion of the capillaries results in capillary dilatation, capillary ectasis, or capillary aneurysm as shown in passive congestion of the lungs. Hyaline degeneration may be observed in the brain, kidneys, lymph glands, or tumors. Fatty changes in capillary epithelium occur frequently in various conditions. Hemorrhage may result from diapedesis or rhexis. These conditions also play a part in thrombosis and embolism. Calcareous infiltration occurs frequently, as observed in arteriosclerosis and its sequelæ. The calcareous infiltration may be preceded by amyloid degeneration, as found in the capillaries of the spleen, liver, kidneys, and in general amloidosis. The heart and arteries follow in various degenerations. These changes are fully discussed in ordinary textbooks on pathological anatomy, and I need not dwell on them here.

The etiological factors are: (1) Mechanical; (2) reflex; (3) central—in reference to the central nervous system.

Mechanical factors, such as inelasticity of the arteries, increased amount of blood, capillary congestion, impeded venous circulation, forcible action of the heart, muscular exertion, increased atmospheric pressure, cause increased peripheral resistance, or supernormal pressure. A softening or fatty condition of the arteries, diminished force or action of the heart, decreased amount of blood, and decreased atmospheric pressure produce subnormal pressure.

Reflex causes, such as stimuli direct to the vessel wall or heart wall and contained ganglia, produce at once a supernormal or subnormal pressure. The irritant may be adrenalin, nicotine, alcohol, lead, the nitrites, aconite, digitalis, or caffeine. Chemical and biological irritants are found in gout, chlorosis (von Noorden), autotoxemia, fevers, Bright's disease, and syphilis. Intense heat, electricity, and vibration are among other causes that may be classed reflex.

Central causes, or those due to influence on the central nervous system, such as worry, grief, joy, fear, produce at once vasoconstriction, or dilatation. "Stimulation of the central nervous system will stimulate vasomotor centers and thus produce contraction of the splanchnic vessels and great rise of blood-pressure" (Krehl). "Continuous high pressure may accompany renal disease, arteriosclerosis of the aorta or of the splanchnic vessels" (Krehl).

The symptoms of aberrated blood-pressure are varied and complex. They stimulate symptoms of other diseases and may partake of or complicate other diseases. The brain, because of its large blood supply, is generally the part first affected by the abnormal pressure and gives rise to headache, vertigo, syncopal attacks, disorders of vision and hearing, blunted intellect, irritable temper, and perhaps hallucinations or acute mania. The face and eyes may be red and congested, and the cartoid pulsating. The sleep is disturbed by dreams and cramps in the limbs. The patient has usually no complaints unless he is attacked suddenly by a sensation of falling and may stagger, if standing, and sink unconscious and completely relaxed to the ground.

The next to be affected, and perhaps the next to come to notice, is the heart. Uneasiness and precordial discomfort are ordinarily the first symptoms. Palpitation or pain is seldom complained of except when there is much increased demand on the heart. The general symptoms are, flushing of face, headache, carotid pulsation, tinnitus aurium. In the early stages of high blood-pressure, the first and second sounds of the heart may be metallic and accentuated. In the early stages of atheroma, the cardiac impulse is forcible and the second sound accentuated. The patient may be walking along the street, when he feels a peculiar heavy throb in the chest which is accompanied by a momentary sensation of choking or smothering. He feels everything give way under him, loses control of limbs, staggers, and by chance falls, at other times recovers before losing his balance. This is a condition which I shall call artery block, producing temporary or transient stoppage of the heart. This block, caused by spasm of capillaries, arterioles, arteries, and probably the heart, may be so forcible as to cause paralysis, rupture, or valvular lesion of the heart.

Following closely, or simultaneously, the kidneys, liver, and lymphatics are affected. When these organs are affected the blood-pressure is, at all times, abnormal unless regulated by treatment. The lungs are generally the last to be affected, except in tuberculosis, bronchial asthma, or cardiac asthma (Hare).

Diagnosis may be determined early by the characteristic variations of pressure. I have found in my own cases, using the Riva-Rocci sphygmomanometer, or the Cooke modification, that the physiological variation of blood-pressure is, when lying at rest:

For children of 1 to 5 years..	80 to 98 mm.
For children over 5 years...	98 to 112 mm.
For adult women.....	110 to 130 mm.
For adult men.....	120 to 140 mm.

I have used the sphygmograph a great deal for experimental purposes, but find it inconvenient for practical use, on account of the delicate mechanism. Otherwise the diagnosis is made only by close study of symptoms and sequelæ.

The prognosis is invariably good if the abnormal pressure is recognized early, and when not produced by degeneration of heart or vessels, or the presence of unconvertible substances in the blood. When aberrated pressure is associated with degenerative processes, the prognosis is fair, provided a compensatory metabolism exists or can be produced. In degeneration and noncompensatory conditions the prognosis is grave, though life may be prolonged by active and persistent treatment.

The peculiar psychic influence that governs us in modern society brings about various degenerations in the human organism. It is not the environment, but the many attributes due to heredity that influence one individual's thirst for alcohol, and another's desire for tobacco. The gourmand, whose features and organs are engorged by unassimilable material, loaded with poisons for the blood, possesses an organism which is at once abnormal. To change this order of things brings before us a most complex problem. Primarily, the individual must be warned of the dangers before him, and the necessity of seeking advice. Secondarily, the part of the clinician should be the early recognition and treatment of blood-pressure diseases.

The indications for treatment are, if the blood-pressure is supernormal, reduce to normal, if subnormal, raise to normal, and remove the cause of abnormal pressure whenever possible. Supernormal blood-pressure is best met by persistent use of tincture of veratrum viride, aconite or their alkaloids, in small frequently repeated dosage. The nitrites, atropine, and iodides combined with Fowler's solution, may be used with beneficial results, at the same time keeping the bowels, kidneys, and skin acting freely. The habits of the patient should be corrected. The patient should take light exercise in the fresh air before meals. The diet should be restricted, avoiding all forms of stimulants, meats, and the ingestion of large quantities of liquids.

Subnormal blood-pressure is met by adrenalin, alone or combined with physiological salt solution, ergot, suprarenal extract, hydrastinine hydrochlorate, digitalis, ammonia, camphor, alcohol, apocynum, strophanthin, caffeine, convalleria, physostigma, and strychnine. These drugs must be absolutely pure. They may be alone or combined as indicated.

A rigid hygienic system should be enforced. The patient should be given wholesome food, such as eggs, fresh meat, fish, milk, stewed fruits, vegetables, fats, and carbohydrates. He should have baths, plenty of rest, sunlight, and fresh air; should wear wool or silk and wool in all seasons. Patients fare better in rural and mountainous districts or at the seashore.

I have presented the treatment by drugs and diet in a cursory way that I might add suggestions which I consider most important in treatment of blood-pressure diseases. I have found most diseases affecting normal circulatory equilibrium due to foreign substances in the blood. These substances so disturb the vessel walls and nerve supply, that they not only interfere with anabolism, but produce marked catabolism of the entire organism. The irritant may be a chemical or an organic agent, such as lead, alcohol, nicotine, arsenic, mercury, phosphorus, the various gases, products of autointoxication, and food poisons. The most pronounced of the biological irritants are the *Spirochæta pallida*, bacillus of Eberth, diplococcus of cerebrospinal meningitis, bacillus of diphtheria, diplococcus of pneumonia, *Plasmodium malariæ*, bacillus of Pfeiffer, or their toxins. In uremic poisoning and eclampsia, the causes of which we do not exactly know, a regulation of the blood-pressure, blood quantity, and blood quality, ameliorates the diseases.

The use of electricity, light, heat, and hydrotherapy in blood-pressure diseases is to be encouraged.

The most valuable adjunct to medical treatment is venesection. In any hypernormal pressure, when immediate relief is needed, venesection should be resorted to. This relieves the intracardiac and intravascular pressure. The specific gravity of the blood is reduced, the amount of toxic or irritant material is lessened, engorgement of the lymphatics, and venous stasis, is relieved. The heart and vessels regain their equilibrium, and cell activity gives new life to the overworked organs. It may be remarked that this is a credible clinical picture. I call to mind a man who came of an apoplectic family. All were very stout. His brothers died at the average age of forty-five years. Being the youngest brother, he had opportunity to learn the prodromal symptoms of the disease. At the age of forty he began feeling the same symptoms as the brothers. He consulted a physician and was depleted of thirty ounces of blood. This he had repeated whenever he felt any return of the symptoms, sometimes as often as four or five times yearly. To-day he is living and well at the age of sixty-five. This man is one of many who have benefited by this so-called old and effete practice. In a paper on "Venesection; its Therapeutic Value," published in *Clinical Medicine*, for January, 1907, I have presented the technique and results in some 600 cases of various diseases. I do not wish to be misunderstood as heralding venesection as a panacea. I want to impress you with its value. There are thousands of deaths every year from apoplexy, heart, and other diseases, where medicine is practically inert, that may be prevented by timely venesection. It bridges the chasm of empiricism, affects suggestive consciousness of the patient, and gives time for therapeutic accuracy.

In a conversation on venesection, one of the foremost educators and medical authorities in America said, "I do not know much about the value of venesection, although I believe it is a good thing." This seems to be the status of the profession concerning the scientific application of venesection. This does not reflect on the individual physician, but it certainly casts a shadow over the teaching in our medical schools.

The object to be kept ever in view is the cause of the disease. This should be searched for carefully until found, and if not found, the disease must be treated symptomatically.

In the study of abnormal blood-pressure, we have the underlying cause or sequence of over half the human ills, which makes it one of the most profound subjects known to the science of medicine. Much is understood and much is misunderstood. I have proven by my own experiments and observations that the life of the human organism, whether through heredity or other causes prone to be aberrated blood-pressure, may be prolonged ten to twenty years. So long as normal blood-pressure can be maintained, the life of the organism will be sustained until the natural sequences of decay result in death.

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HEALTH OF OUR HIGH SCHOOL CHILDREN.

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MEDICAL EXAMINER TO THE BOARD OF EDUCATION.

In an article on the "Health of School Children" (*Outlook*, November 17, 1906), Mr. G. W. Wharton tells with great definiteness what is being done in New York by the Boards of Health and of Education, acting conjointly, to guard the well-being, physical and mental, or perhaps I might say, physical and therefore mental, of New York's great school population.

I was one of the first set of inspectors appointed by the Board of Health, and having worked in the schools for nearly six years, can testify to the rapid strides which that work has taken. For the past five years, however, my work as Examiner for the Board of Education has put me in close touch with the upper end of the line, so to speak, with the high school graduates and those who have finished their work in our two great public colleges, and it is of the health of these girls and boys, at the close of their twelve to fifteen years of school work, that I wish to speak, and incidentally sound a word of warning.

In my present work as Examiner, there come before me every year from eight to twelve hundred applicants, men and women, averaging from eighteen to twenty-five years of age. These one might call the finished product of our public school training, physical and intellectual. They are all candidates for some post in the public schools, either as elementary teacher, or in some special branch, such as cooking, physical culture, drawing, kindergarten, shop-work, etc. Of course, some of this vast number come from other States; some are considerably older than twenty-five, but for the purposes of this article the statement that the majority of them are under twenty-five and are the output of our New York City school system, will stand.

Under the present bylaws of the Board of Education, every candidate for the post of teacher in our public schools, in addition to the so-called written examination, which determines intellectual fitness, and the oral examination, which brings into prominence the personal equation, general bearing, self-control, power of language, etc., must also pass the physical examination. This examination aims to cut out those applicants afflicted with permanent incurable organic disease. Briefly, it includes an examination of eyes, ears, throat, heart, lungs, kidneys, as well as of the general nervous condition, and a statement as to the presence of any physical defect or deformity, from which the applicant may be suffering. The wisdom of this examination we will not now fully discuss. When I state that in the first year seven per cent. of all the applicants were rejected on the ground that they were likely in a few years to become a burden on the pay-rolls, and that the causes of exclusion included cases of marked tuberculosis, organic heart lesions, Bright's disease, deafness, irremediably poor sight, as well as tuberculous spinal conditions, still in the active stage, it will probably be admitted that the examination is not altogether without its usefulness.

But the point to which all of this leads is this: I have been repeatedly amazed at the low standard of health among the younger groups of candidates, those coming from our high schools, Normal College and College of the City of New York. The Normal College, as a rule, sends us between five and six hundred a year to examine, the Boys' City College a much smaller number, and the output from the high schools of Greater New York (entering the Training Schools for Teachers) averages over six hundred every six months. Few of these candidates are under eighteen; few over twenty-four. These form the bulk of our examinations.

In this younger group especially, are found many cases of anemia, albuminuria, and organic heart lesions. The cases of anemia and of functional heart trouble are as a rule readily cured. Given a rest from the strain of school and other work, and a few weeks or months in the country, and they usually pass the reexamination in the fall. But it is found that the cases of albuminuria have been strained a point farther in the matter of endurance and do not respond so easily to rest and treatment. Many applicants upon being notified of the cause of their temporary rejection put themselves under the care of their physicians; others were under the supervision of well-known specialists; yet the drain upon the system continued in spite of the best of treatment, often for many months and in some cases for years. Tests were made at frequent intervals to determine the improvement. Many of these cases came as a complete surprise to the examiner, the family and the family physician; it was the first note of warning. But the stubborn fact remained that these boys and girls had worked and worried a point beyond the limit of healthy reaction, and that an important organ was in a fair way to become permanently damaged. Some cases had passed beyond the limit of simple albuminuria and showed distinct evidence of permanently damaged kidneys. There were only a few, however, of these.

It had been the custom of the Board physicians to examine the Normal College girls and the College of the City of New York boys immediately after their written examinations. This meant that they came to us after the prolonged strain of their own faculty examinations plus those given by the Board of Education. It was a noticeable fact at that time that the number of cases showing this condition of the kidneys was very large, comparatively. The examiners then tried giving these applicants their physical before their academic examinations, with much better results, showing conclusively: (1) That a strain of even a few weeks may produce in these young people a temporary derangement. (2) That those with organisms sufficiently strong react immediately upon removal of the strain. (3) That a small percentage have had the way paved for permanent injury to a vital organ.

One expects the kidneys of a man of over fifty, subjected to the strain and worry of a hard business life, to show evidences of wear and tear, but one does not expect weakness in the kidneys of the young adult, at least, not in any such proportion of cases as the examinations have brought to light.

As to the frequency, comparatively speaking, of organic heart lesions, I confess myself fairly puzzled. The majority of these cases occur among the boys, especially those of foreign birth. These boys are often anemic, generally undersized; many show no other evidence of anything wrong. In many cases no amount of questioning has sufficed to bring to light an adequate cause for the valvular difficulty. Sometimes the diagnosis of organic trouble has been questioned by the family physician, but an appeal to the specialist or an attempt to obtain

a life insurance policy has proven the existence of the lesion, however inaccessible its origin. They can scarcely all be congenital. Is it not possible that the defect is nutritional, *i. e.* that it owes its origin to defective nutrition in infancy and early childhood? This is the conclusion to which I have been forced in the years in which I have watched these cases. Many of them are temporarily debarred until their general condition is improved, and often, while under reexamination they have voluntarily disclosed the hardships and privations of their early and oftentimes of their present lives.

It is the story of the immigrant family, of the ambitious father and mother, and of the no less ambitious son or daughter; of the educational facilities, so new to them, so within reach; of the struggle at home to make the scanty loaf go round; of the goal at the end—$900 a year to the successful lad, $600 to the successful girl—with all that it means in the way of an immediate uplift, better living, better food, and the chance for the younger brother or sister to be kept in the educational path. Is it not a goal to be striven for, even at the temporary sacrifice of much needed food, much needed sleep, much needed recreation? Many a time are the hearts of the examiners, generally accredited with being hard as flint, softened almost to the point of passing some ineligible who would in a short time become a burden upon the pay-roll.

It is right here that the connection between our work at one end of the line and the work of the Board of Health and that of the Board of Education at the other end, comes in. *We* get the finished product of the public school system: *they* deal with the raw material. Ours is a sifting process, a cutting off of the weakly, an applied survival of the fittest: they can preach prevention, prevention, and again prevention, all along the line.

The influence of these physical examinations is reaching down through the high schools and lower college classes gradually, and the pupils are beginning to recognize that ill health is a poor credential to present to the Board, backed up even by the family physician's certificate that the condition of the candidate is due to strain and overwork. Ambition that strains its possessor beyond the safety point physically defeats its own ends, no matter how high may be the mark received for academic attainment. If even this baldly utilitarian aspect of the value of a sound physique could be hammered into the boys and girls from beginning to end of their high school and college courses, we should find the names of fewer honor students on our list of rejections for physical disability. Still, as I said, the influence is percolating down and the percentage of rejections becoming smaller.

But the ounce of prevention must be administered still earlier to obtain the best results. Down in the crowded districts of our city are thousands of families, representing tens of thousands of school children. The majority of these are foreign born. The parents, accustomed to a certain diet in the land of their birth, got along—that is, they lived and grew up. But the conditions of living here are vastly different, and the children's needs cry out for more liberal nourishment. Many of the mentally and physically defective in our schools come from this class, and Dr. Elias Brown, examiner of defective children, has repeatedly pointed out, as, of course, have many others, the fact that nutritional defects are the basis of a large proportion of these cases. Not only are these children fed wrongly, but they often are not fed enough. Many and many a principal has told me of little ones in school without breakfast, whom they and the teachers have fed. And while the discussion goes merrily on as to whether the feeding of these little ones *in* the schools by the city would tend to pauperize the family, the children keep up a vain and weary struggle to satisfy their mental needs on an empty basis—that is, a hungry stomach. Is it any wonder that lean, stunted, dwarfed intelligences result? I know it is a large question, one with many sides, but the fact of malnutrition among the children of this group is so apparent, so easily demonstrable, and the pernicious results so long lasting, that it would seem time for at least a partial experiment to be tried, along the lines of ampler satisfaction for downright physical need.

The statistics given by Dr. Cronin of the Health Board at the meeting of the Society of Health Board Inspectors at the Hall of the Board of Education, November 16, 1906, were, to say the least, startling. The prevalence of adenoids, enlarged glands, chorea, catarrhs of eyes, ears, nose, throat amongst our school population showed most strongly the need of preventive work even further back than the time when the child enters the schoolroom. All of these troubles are preventable, many, if not all of them, dependent upon poor nutrition. Right into the homes must the ounce of prevention be carried. The ratio of its value to the pound of cure is none exaggerated.

Of course there are other sides to this question than the one of the duty of the city to its school children. Parents are many times to blame for the physical breakdown of the growing school girl or boy. Over and over again have I questioned the advisability of keeping boys and girls at high school or college whose parents could ill afford the expenditure entailed in the loss of money which would have been coming in had the boy or girl been at work. There are in our high schools and free colleges to-day sons and daughters of the very poor, the widowed seamstress, the washerwoman, striving to keep up a struggle lasting five, six and now in both colleges, seven years. We honor the self-sacrifice which toils and complains not, but if the struggle is being kept up on insufficient nourishment and with the probability of physical breakdown before the goal is reached, is it worth while? I often feel that many of these lives could be lived just as sweetly and far more healthily and serenely on different lines. But the social position of the teacher in New York, the permanency of the position once attained and the fairly high salaries, are great temptations, especially to our young women.

"Your daughter is ill, anemic, nervous, run down, not fit to teach in her present condition," and the reply always is, or very commonly, "She has not had sufficient food: it has been a struggle to keep her at college; there are others too, to feed, and I am the only wage-earner. The salary of her first year will put us above want. It will give us all the food we need," and then, too often, comes the personal appeal, so hard to resist, to give her a trial "for charity's sake." One little girl, an upstate candidate, came to us, well advanced in pulmonary tuberculosis. We did not tell her the cause of her rejection the first time, feeling that if her family physician had not seen fit to do so it was not our business, and within a year, at considerable expense for railroad fare, she reported again. It was the same story—a self-sacrificing, ambitious mother and a family who had "gone without" to "get her through." There was no shadow of a chance for her.

One lad, whom a very marked organic heart trouble, coupled with failing kidneys, debarred, told

me that his parents' sole support depended upon him; that they had striven painfully to the limit to have him finish his course and now were too old to work longer. Another had gone through on money borrowed from a friend, to be returned from his first salary.

But, as I stated before, I believe our work is becoming, in a measure, preventive. Knowing that this examination looms ahead, the girls are themselves more careful and their parents have been awakened. Many a girl is now sent, well or ill, to the family physician for a general overhauling some time in advance of our examination. Students with spinal trouble, extreme nearsightedness, organic defect, or deformity often ask advice in their early college years as to whether it is worth while to continue with the distinct idea of becoming a public school teacher. Others, positively defective, drop out by the way. But the more insidious forms of trouble continue to be overlooked, to the great disappointment of the candidate when refused on the physical examination.

Possibly many will find in my statements food for criticism on the amount of work required of our high school boys and girls. No such criticism is intended. Far more is it my purpose to call the attention of parents and physicians to a better care of the growing boys and girls under their charge, as to diet, hygienic surroundings, healthful exercise; to an insistence on more sleep and less excitement. The unexpected results of these examinations, and they number between four and five thousand cases (plus those referred to me by the other examiner), added to a large personal experience with school girls as physician and one-time teacher, have proven, to my own satisfaction at least, that the foundation of many a long-lasting, if not incurable, condition is laid during school life. The average high school girl could accomplish her work with far more credit to herself and less detriment to her health if her life outside of school hours were planned with more forethought and a deeper insight into the dangers which beset the growing girl in the way of outside distractions. Several matinees or theater parties a week, a large amount of miscellaneous novel reading, late hours, injudicious food, an unbelievable amount of coffee —add these to the normal strain of school or college life, where the work of each day must be closely welded to that of the day before and the day after, and where the least break means trouble and disaster, and you have paved the way for these very conditions of which I speak, conditions due to strain, which should be wholly unknown in the life history of the young adult.

1 West One Hundred and First Street.

THE SOLUTION OF THE LODGE AND SOCIETY PROBLEM OF THE EAST SIDE.*

By JULIUS WEISS, B.S., M.D.,

NEW YORK.

The practice of medicine on the East Side in New York is unique. It differs from the practice of any other section of this country for the reason that in this locality almost 75 per cent. of the population are insured for medical attendance in lodges and societies. Here also three-fourths of the physicians accept contract practice from these organizations. While many of the conditions described below may apparently deserve censure for the physicians, still, upon careful reflection, it will be seen that in reality no physician can be blamed at the present time. The conditions described herein were forced upon a badly disorganized body of 300 conscientious and industrious physicians by a strongly organized body of men, numbering thousands, and working through the medium of well-established lodges and societies. No excuse, however, should in the future be accepted from any physician of the East Side, who, after reading this article, should still refuse to join with his colleagues in promoting the necessary reforms.

It is the purpose of this article to point out the rôle the physician is forced to play in these lodges and societies, the conditions he is confronted with therein, and to suggest a plan for the amelioration of some of the existing evils.

The young graduate who hangs out his shingle on the East Side usually starts with such financial resources that he cannot afford to wait until he establishes a private practice. He must from the very beginning seek other means whereby he may be able to pay his immediate expenses. He very early learns that there are in this section hundreds of lodges and sick-benevolent societies employing physicians on contract practice, each of which insures an income for the physician of from twenty-five to one hundred dollars quarterly. It is therefore natural that a young physician should under the circumstances make an effort to obtain such employment.

The question, "How long shall a physician of the East Side accept society practice?" is still a debatable one. The facts are that of the physicians who had society practice and dropped it, some have succeeded in establishing a paying private practice, while others have failed. Time alone cannot be taken as a criterion for the retaining or dropping of societies. Physicians should be permitted to retain societies until they feel that they are sufficiently well established and can earn a living from private practice alone. This should be a matter for personal decision.

At the present time many physicians of the East Side who are from eight to fifteen years in practice find that it is still advisable for them to accept society practice. This being the case, it happens very often at elections that old physicians find themselves competing against one another, as well as against younger men. As they are all anxious to be elected, usually each in turn will make some concession to the lodge or society to gain votes. Oftentimes candidates for an election go even further than merely making concessions. Some of them, in their anxiety to be elected, make preelection banquets for the more influential members. Others go a step further —they offer bribes to gain votes.

The results of this condition of affairs are that the physicians become disrespected, the tone of the profession is lowered, the remuneration for medical services becomes ridiculously small, physicians are compelled to accept impossible conditions, and they are forced to care for a large number of families, whom they cannot properly attend and whom they can almost never carefully examine when called. Finally, promising physicians with high ideals lose their interest in medicine as a science, disregard their colleagues, and themselves become disregarded by the laity.

I have stated above the true conditions of the medical profession on the East Side because I share the opinion of many others, both physicians and laymen, that it is high time for medical men to unite and by concerted action to introduce certain neces-

*Read before the Physicians' League, Friday, January 24, 1908.

sary and important reforms. And unless the matter is brought clearly before them and full publicity given, nothing will be done.

What shall these reforms be? The suggestions made by physicians are numerous and varied. The more or less independent physicians would like to have society practice abolished entirely. Others argue that all we have to do is to agree to increase the present rates and improve otherwise the conditions of the contract. Some physicians suggest that the dispensary evils be first ameliorated; others, again, that pharmacists should be punished for counter prescribing, and finally a number of practitioners are skeptical as to the possibility of instituting any kind of reforms.

I am convinced that society and lodge practice on the East Side will continue for some time to come. There will always be some physicians compelled to take society practice, especially in the first few years of their profession, as it insures for them a steady income. It is therefore out of the question, for the present at least, to abolish this kind of practice. It plainly cannot be done.

Many physicians are agreed that the terms of the contract should be greatly modified and improved. At present a physician gets from one to three dollars per annum to treat an entire family when sick. He may be called at almost any hour of the day or night. He must treat all except immoral ailments without any extra cost to the patient. He must accept patients no matter in what part of Greater New York they may happen to reside.

The three hundred physicians of the East Side taking this kind of practice ought to be able to agree upon a uniform contract with improved conditions as to rates to be charged, hours of attendance, distance to be traveled, and the nature of the work to be done.

At this point we ought to consider the opinions of those skeptical men who do not believe in the possibility of such an agreement among the physicians of the East Side. To a certain extent these pessimists are correct. They know that in the past a number of attempts at organization for such reforms were made and that they were all failures. It may be predicted with safety that future attempts of such a nature will also be failures, unless one all-important fundamental reform in contract practice is first instituted, namely, the abolition of the custom of electing physicians in organizations, and the substitution of a system that will eliminate this form of competition. A system of selection, which will be discussed below, must be established, so as to give each and every physician interested a fair chance to accept contract practice, and which will place him in the same relation to the contract patients as he is to his private patients.

While the right kind of competition among medical men is healthy, that is, competition in which one physician endeavors to rival his colleague in knowledge, skill, and conscientious effort; on the other hand, the form of competition which is directed towards lowering of prices, of professional dignity, and of medical efficiency, is detrimental to the moral, economic, and professional welfare of the physician. This sort of competition has already proven a complete failure from every point of view.

By the system of election a physician knows that if he gets one vote less than his competitor he will be defeated entirely, while the successful candidate will get on his list not only those who voted for him, but also those members who voted against him and who preferred the defeated candidate. By this system of election a double injustice is done. The unsuccessful physician is robbed of the income from those who voted for him, and his friends are deprived of the medical services of the man whom they personally desired. The physicians, therefore, recognizing the great importance of having a majority of votes, will use all means, fair and unfair, to gain an election. But by eliminating this element of chance and by giving each physician an opportunity to obtain a list of as many members as prefer him, we shall create favorable conditions for instituting the necessary reforms.

Under the system of selection a physician will first be asked, as it is done to-day, whether or not he is willing to accept a list of members from a certain lodge or society. If he consents his name will be presented to that organization for selection. Each member of the organization will then designate on a uniform prescribed card the name of the physician by whom he wishes to be attended. The members could fill out these cards at their homes, after which they could mail them or bring them to the secretary of their organization.

After the cards are in the hands of the secretary one of three things may be done.

1. The cards may be assorted by the secretary of the lodge or society and each physician is then given a list of the members who subscribed for his services.

2. The selected physicians of a lodge or society may meet and elect one of their group as foreman. The cards are then assorted and each physician receives his list as in the first instance. At the end of the quarter the foreman collects the amount due for medical services and each physician receives his proportionate share.

3. The cards of an organization may be sent to an office established by the physicians for that purpose.

The organization in question is then debited with the correct amount for medical services based on uniform rates.

The cards are then assorted as are letters in a postoffice, each physician's cards being put separately. Each physician is then credited with the total amount due him as is represented by the total amount of cards sent in from the various organizations.

At the beginning or end of each quarter of the year this physician's office collects all moneys due from the different societies. A check is then sent to each physician for the amount he has been credited with.

This system is comparable to the modern banking system, where the Clearing House bears the same relation to the bankers as the physicians' office would to the physicians, except that in the case of the physician the system is greatly simplified.

Of the three systems, the third just described is very likely the best. It does away with the physicians having to act as collectors in each of the societies where they have been selected, or with having to meet to elect a foreman to act for them. It saves them much time and disagreeableness. It does not give the societies a chance to deduct from the physicians' pay for treats and banquets. By this system also the physicians will be regarded by the various organizations from the professional standpoint only and all ideas of commercialism will be removed from the minds of the laity. By this system, also, no physician has to worry about

defeating or being defeated by any one, as each one will get a list of as many members as sympathize with him. He will then readily see that it is to his advantage to cooperate with his colleagues for the purpose of maintaining a uniform contract and a proper professional dignity.

Before concluding this paper one more proposition has to be discussed. What arrangements shall be made for the physical examination of candidates for lodges and societies? If the system of election is to be abolished, who will act as the official examiners of these organizations?

One easy way of disposing of this question is by adopting a method already in vogue in some organizations. In certain lodges and societies where there are more than one or two physicians as members, each physician takes his turn as examiner, serving a proportionate length of time. But it appeals to me that there is a better and more just way of disposing of this question.

In the first place it is clear that the success of maintaining a uniform contract will depend upon enlisting the cooperation of the greater majority of physicians accepting society practice. Secondly, that such cooperation can be hoped for only when you establish the system of selection, thus eliminating the element of chance and giving each physician concerned a fair chance to obtain this kind of practice. But even under these circumstances there will be some physicians who will fall below par. This will especially be true of those physicians who are in their first and second year's practice. These may not get a sufficient number of sympathizers to subscribe to them to insure an income commensurate with their immediate needs. Under such circumstances it may be expected that such physicians will fail to cooperate for introducing the necessary reforms.

I propose to suggest here a very simple system whereby the young physician and even the unsuccessful older practitioner shall attend to the examinations of candidates, thus insuring them a definite income until they become better acquainted and have increased their practice. These physicians being insured by such an income will find it also to their advantage to cooperate for the maintenance of a uniform contract and a proper professional dignity.

The total amount of fees paid annually by candidates to all the physicians of the East Side amounts to about fifteen to sixteen thousand dollars, or an average of about fifty dollars for each of the three hundred physicians. I propose to suggest that this money shall be earned by only thirty or forty of the younger and less successful practitioners. This would give each an assured annual income of about four hundred dollars, in addition to the income from society and private practice.

The new method of examining candidates could very easily be worked as follows:

Two or three offices could be established in different parts of the city where candidates shall be examined. The younger and less successful practitioners could be assigned in routine to examine candidates. The applicants for membership could be notified by the secretaries that they must call at one of these offices for a physical examination. Certificates of admission could be issued by these physicians on uniform blanks. An established fee could be paid by these candidates to a cashier in each office, and quarterly these moneys from the various offices could be equally divided among these examining physicians.

By this system of physical examination the lodges and societies would be strongly protected against the admission of sickly members, as the examinations would be conducted by entirely disinterested men. The physicians also would be protected. For, by throwing such an income in the way of these physicians, their goodwill would be secured as well as their cooperation towards the maintenance of a uniform contract and a higher professional standard.

Summary.—1. The practice of medicine on the East Side is unique. Seventy-five per cent. is lodge and society practice. Three-fourths of the physicians on the East Side accept this kind of practice.

2. The laity is organized, the physicians are disorganized.

3. To gain contracts, physicians have to go through elections.

4. To insure being elected, physicians make the worst concessions and lower their professional dignity.

5. It is necessary for the physicians to cooperate to establish a uniform contract, and to raise the professional standard on the East Side.

6. To accomplish these reforms it is necessary to abolish the "system of election" and to establish the "system of selection."

7. To gain the good will and cooperation of the new and less successful practitioners, it is necessary that the older and more successful practitioners allow the former to examine candidates of the various lodges and societies.

8. There shall be established offices where the examining physicians shall be assigned in routine for the examination of candidates. The income from these candidates shall be divided in equal shares quarterly among the examining physicians.

91 Attorney Street

A CASE OF CUT THROAT.

By CHARLES I. PAGE, M.D.,

LITCHFIELD, CONN.

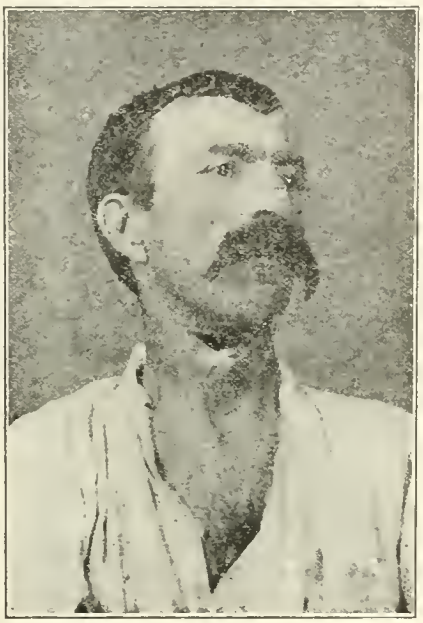
As extensive wounds of the throat, made with suicidal intent, are in the majority of instances fatal, either from the primary hemorrhage or from complications, it has occurred to me that the following case might be of sufficient interest to report.

J. E. T., age 35 years, a prisoner in the County Jail, charged with burglary and arson. On July 24, 1906, he attempted suicide by cutting his throat with a potato knife. The man was found about half an hour after the act had been committed, lying in his cell unconscious. On examination, we found a wound extending from one sternocleido muscle to the other; both carotid arteries were exposed, but had escaped injury. By inserting the first and second fingers in the wound, I could easily introduce the first finger between the vocal cords into the trachea, while the second finger passed into the esophagus. The knife struck the thyroid cartilage about one-eighth of an inch below its upper margin, slipped upward, and entered the tissues above the thyroid, severing both superior cornua of this organ.

Hemorrhage, which had been very profuse, was checked. Enema of a quart of salt solution was given, and also a hypodermic injection of strychnine. The head was lowered. The thyroid cartilage was sutured to the upper side of the wound by three catgut ligatures. This operation was difficult, as the trachea moved up and down with each respiration. The skin wound was closed with

catgut. On the following day the dressing was removed, and we found that some of the superficial, and all of the deep sutures had torn out. From this time on the wound was dressed twice daily. Nourishment was given per rectum for three days. As the man was now conscious, he was fed through the stomach tube until the tenth day, when he was able to swallow fluids.

The photograph from which the illustration was made was taken on the sixteenth day, and shows the wound had healed by granulation for about half an inch on each side. The man was now able to swallow fluid nourishment, providing the wound was covered with a dressing, but if there



From a photograph taken on the sixteenth day.

was no dressing the fluids would gush out through the wound. He did not suffer any pain. The principal inconvenience was spasms of coughing, especially when taking food.

At the end of six weeks the wound was completely closed, and the man was now able to eat the regular prison rations. At the end of the third week he could converse in a whisper; the voice rapidly improved, and at the end of the eighth week he was able to talk in the ordinary tone of voice. The man on seeing one of these pictures asked if he might have one to send to his wife, as he had not been photographed in twenty years. His request was granted.

Cryoscopy in the Diagnosis of Renal Conditions.—A correspondent calls attention to the fact that nearly every clinic in Budapest makes use of this method. This, he says, is not surprising, because the phenomena connected with the depression of the freezing point were first made known in Budapest in the clinic of Professor Korànyi, who is still busy with the study of cryoscopy. An expert clinician has, however, lately expressed some doubt as to the trustworthiness of this method. He said that the character of the food and the amount of fluid ingested seem to have a marked influence upon the freezing point of the urine, but even if the diet is simple and absolutely uniform the figures vary within very wide limits. Several cases have been reported in which the wrong kidney would have been extirpated if nothing but the "molecular concentration" of the urine had been taken into consideration. Much more satisfactory results are obtained if attention is also paid to the daily amount of urine and if renal activity is expressed in so many daily molecules. In all cases the diet should be controlled and the catheters should be introduced at a definite period after a meal and left in position for at least two or three hours, since fluctuations are very common. At best the method is only approximate, but though troublesome it offers valuable aid in conjunction with other data.—*The Lancet.*

Acute Gangrenous Pancreatitis.—D. J. Jones reports one case, with a successful result following operation. His patient was a woman of forty-four years with a three months' history of vomiting followed by epigastric pain and general abdominal soreness. Jaundice was wanting. Three days before admission to hospital she ate some cucumbers at night. Vomiting came on next morning and continued. Examination showed the abdomen full and rigid in upper right quadrant. A distinct tender mass could be felt in the region of the gall-bladder extending downward nearly to the navel, and she was slightly jaundiced. Abdominal exploration was deemed advisable and an incision was made through the right rectus from the costal border downward. Gall-bladder and stomach were normal. The bile ducts could not be thoroughly explored because of the mass. Just below the border of the liver was a mass adherent to the anterior abdominal wall and extending posteriorly to behind the stomach. This mass was made up of gray necrotic fat tissue into which the finger could be pushed with ease. It extended to the region of the pancreas and across the spine over the pancreas. The whole mass was broken up with the finger and packed with several strips of gauze with a tube in the center. The condition of the patient was so bad that posterior drainage was not attempted. The convalescence was long and tedious, but the patient was immediately relieved of pain except at intervals when she would have considerable pain with an increase of temperature. The temperature during the greater part of the time was between 99° and 100°. She left the hospital in eight weeks with a small sinus which closed in a short time, since when she has been perfectly well.—*Boston Medical and Surgical Journal.*

High Frequency Currents in Excessive Arterial Pressure.—A correspondent, whose name is not given, writes an interesting letter from Paris referring to the work of Montier along the line indicated in the title. The latter does not claim to cure arteriosclerosis as a lesion, but claims to be able to reduce excess of pressure with perfect ease, and that this reduction is to a certain degree a definite one. His apparatus is thus described: a Ruhmkorff coil giving a 25 cm. spark, fitted wtih a Contremoulins-Gaiffe interrupter, connected with the city cables by a rheostat; a d'Arsonval petroleum condenser, and a large solenoid cage with continuous wire and no door, the hoops being hoisted up to let the patient in. The treatment is supposed to be given at about 500,000 interruptions per second. By means of high-frequency currents of high tension applied in a solenoid cage in sittings of five minutes each, given three times a week, he claims to reduce high pressure and thereby to ameliorate many symptoms—such as vertigo, palpitation, irregularity, etc., connected with developing arteriosclerosis and to retard its development by removal of pressure. The existence of tuberculosis contraindicates this method of treatment. The correspondent adds that Montier's claims are not accepted by his medical colleagues or by electrical experts in medicine. The method is based on the theory that the arteriosclerosis is preceded and produced by a long antecedent period of high pressure due to capillary spasm. This is denied by the Paris physicians and the most they will admit is that the reduction of pressure by Montier's method is but temporary and evanescent.—*Boston Medical and Surgical Journal.*

MEDICAL RECORD.

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A NEW RADIOTHERAPEUTIC METHOD.

VARIOUS radiometers and other devices have been conceived to control the dosage of *x*-rays and thus to diminish the resulting danger from exposure to them. These instruments may be of value when the question is one of treatment of skin affections, but they are quite useless when the internal organs are to be subjected to the action of the rays. Successful treatment of the latter requires frequent and prolonged exposures so that we are always facing the possibility of an *x*-ray dermatitis, if not something worse. A method of reaching the internal organs without the possibility of a dermatitis setting in would therefore seem desirable. With this in view R. von Jaksch (*Zeitschrift für klinische Medizin*, Volume 64, Nos. 3 and 4) carried out a series of experiments. He found that a lead plate four-tenths of a millimeter thick did not transmit the *x*-rays after exposure from one to nine seconds. When such a plate was placed between the rays and the body the skin remained unchanged after frequent exposures of fifteen minutes; blood changes were also absent, thus proving that a lead plate four-tenths of a millimeter thick prevented the *x*-ray from reaching the skin or deeper organs. A lead plate two-hundredths of a millimeter thick, on the other hand, transmitted the rays and did not prevent a dermatitis after several exposures of fifteen minutes each. A silver plate two-hundredths of a millimeter thick transmitted the rays more readily than a lead plate of the same thickness, as was seen on a photographic plate, the shadow being more distinct after two seconds' exposure with a silver plate intervening, than after three seconds exposure with an intervening lead plate. It would therefore be natural to suppose that a dermatitis would be more readily caused after long or frequent exposures with an intervening silver plate than with an intervening lead plate. The experiments of v. Jaksch, however, showed that the skin was not affected when the silver plate was used, although the characteristic blood changes due to *x*-rays were found. The silver plate thus permitted rays to go through it which affected the deeper organs while it prevented the transmission of the rays which affect the skin.

Von Jaksch found this to be the case in many patients and cites the history of one with splenomyelogenous leukemia, treated by the *x*-ray with an intervening silver plate two-hundredths of a millimeter thick. The patient's general condition improved, the spleen became very much smaller, the percentage of the pathological leucocytes came down to normal, that of the polynuclear neutrophiles rose to normal, and the total number of white blood cells was reduced from 252,000 to 5,000 in six weeks. Twelve different portions of the body were exposed to the *x*-ray with an intervening silver plate, from three to five times, each exposure lasting from fifteen to twenty-five minutes, so that each area received *x*-ray treatment for from one to two hours. The patient did not develop a dermatitis. Von Jaksch does not claim that the *x*-rays permanently cure leukemia, but does claim that his observations positively show that the internal organs can be effectually reached with the *x*-ray, without injuring the patient, when a silver plate of the above mentioned thickness is placed on the skin. The tube is placed twenty centimeters from the body and the part of the latter not covered by the silver plate is covered with lead.

Von Jaksch has proved that a lead sheet two-hundredths of a millimeter thick permits rays affecting the skin to pass through it while a silver plate of the same thickness does not transmit such rays. The silver plate, however, transmits a greater number of rays than the lead plate, for the shadows on a photographic plate were more distinct with an intervening silver than with an intervening lead plate, after the same length of exposure. From a study of von Jaksch's observations it would seem plausible to suppose that the *x*-rays are not all of the same kind and that certain metals will permit only certain rays to pass through them, and that sooner or later we may find a specific radiotherapy for the various organs.

VASOMOTOR COLLAPSE IN ACUTE INFECTIONS.

IT is well known that many truths concerning the behavior of the animal organism in health and in disease after being experimentally established, only slowly filter their way into the general books on medicine or gain currency in actual practice. In general this is salutary, for it checks the rash application of the results obtained in experimental research before they have been verified by other workers under different circumstances of observation. Occasionally, however, many physicians continue to cling to old ideas in theory and in practice in the face of well established experimental and clinical data. Writing in *Russkii Vratch* (Nos. 4 and 5, Vol. VII), Dr. E. B. Blumenau cites one instance of this, the popular view, namely, as to the cause of early collapse in many acute infections. "Heart failure," "acute dilatation," "myocardial insufficiency," etc., are the expressions often loosely used to explain this serious phenomenon, yet careful laboratory work has abundantly proved that the primary cause of this condition is to be sought not in the inefficiency of the heart but in the state of the vasomotor system of the body. Romberg and Pässler (*Deutsches Archiv für klinische Medizin*, Vol. 64, 1907) have shown that asystole or incomplete systole of the heart accompanying early collapse in acute infections is due primarily to a dilatation of the blood-vessels in the body, especially those of the great splanchnic system, thus interfering with the usual supply of blood to the heart and taking away

an important element in the mechanism of its contractions.

Accordingly, all medication that may further diminish the general blood pressure is distinctly contraindicated, yet even such a frank vasodilator as nitroglycerin is often given. Nor is the use of pure heart stimulants much more called for; the heart muscle is usually willing and able to do its work, and whipping it up without bringing to it the necessary conditions for its activity is, to say the least, a useless procedure. The real state of affairs is very much analogous to shock in surgical conditions, and Crile has clearly shown the futility of stimulating the heart alone in such circumstances. Of course, the most rational therapy would be the use of specific remedies, destroying the infective organisms or binding the toxins produced by them before the vasomotor system has been overwhelmed. However, neither the pharmacological nor the bacteriological laboratories have as yet given us specifics for such diseases as typhoid fever, pneumonia, scarlet fever, etc., and one must have recourse to drugs that fulfil at least one important indication, namely support and stimulation of the vasomotor system as well as the heart. In Dr. Blumenau's experience with pneumonia digitalis and camphor have proved to be most reliable, the former as a general stimulant to the circulation, the latter especially in the grave conditions of collapse characterized by vasodilatation and rapid fall of blood pressure. On such occasions the author has often made use of subcutaneous injections of camphor dissolved in oil, the administration being repeated as often as every one or two hours and the dosage above the usual averages for this drug. In no case were any untoward results noted, while on many occasions such medication appeared to have tided the patients over the most critical periods of their disease.

There is, of course, little that is new in the above considerations, yet the article of Dr. Blumenau is worthy of notice for laying stress upon the correct conception of collapse in such acute infections as pneumonia, and for his insistence upon the necessity of shaping treatment in accordance with such conception.

PRISON MANAGEMENT.

Those whose years and memories are long enough to enable them to compare the lot of the prisoner of to-day with that of the delinquent of a third of a century ago are tempted to believe that humanity has gone as far as it legitimately can in the treatment of the criminal whom the law has separated from his fellows for the latter's good or for his own. Any further lightening of the just punishment of the law-breaker seems to them to border on the dangerous, to tend to make prison life too easy, and to remove from it its punitive character. We have no sympathy with the sentimentalist who would make of a term of imprisonment in the county jail a pleasant vacation and a time for sobering up in a comfortable home with good food and abundant leisure preparatory to a fresh bout on the Bowery or in the Tenderloin. There is room, also, for considerable skepticism regarding the reforming influences of imprisonment under any conditions, good or bad; but at least the punishment should not be inflicted in such a way as to confirm the criminal in his evil courses or to turn the accidental law-breaker into a hardened sinner. Yet such, say those who know best, is the usual result of a term of imprisonment under the present conditions. The management of the prisons is left too much to wardens and keepers who may or may not be morally much superior to their charges. The regulations read well, but they are fatally defective, in practice at least, in that there is no effective provision for ensuring their faithful observance. There is too little supervision by persons whose political or personal interests do not lead them to wink at certain things of which the conscience may not approve, and too much authority is given to officials whose observation of only one side of the criminal, and that the worst, tempts them to undue severity if not actual brutality in their treatment of the helpless and unlovable creatures temporarily in their power.

In a letter in *Charities and The Commons* of March 14, Dr. Beverley Robinson directs attention to some of the present day abuses in our prisons and suggests certain remedies for them. He says that the prisoner should work hard and should be subject to strict regulations as regards conduct and obedience to rules, but at the same time there should be due consideration for his personal welfare. No reformation of the criminal is possible, Dr. Robinson holds, when he receives insufficient and bad food, and when light, air, and even warmth are denied him. In looking for a remedy of the evils of prison management, he says penal institutions should be governed somewhat as our charitable institutions are governed. The food should be daily inspected as to quality and preparation by competent persons independent of the prison authorities, and there should also be a consulting medical board on whom would devolve oversight and control, under the authority of the Prison Commission, of all sanitary and moral relations having to do with reform of criminals from the highest medical and ethical standpoint. It may seem a little strange, at first thought, to commit to medical men the task of the moral reform of those unfortunates, but there can be no uplift of the soul if the body is maltreated. There is much truth in the saying that the way to a man's heart is through his stomach, and not his stomach only, but his whole physical being. Of little avail are moral precepts to an underfed, air-hungry and soapless man. He must be fed and washed, his lungs must be filled with pure air, and the discipline to which he is subjected must be administered with justice, at least, if not with mercy. If there is a possibility of reformation it is only in this way that it can be effected. Brutality on the part of the keepers will only make the prisoner himself more brutal and confirm him in his enmity against society.

SOWING THE SEED OF ALTRUISM.

A few years ago a lady of this city, impressed with the unnecessariness of much of the noise which pounds the ears and racks the souls of urban dwellers, set herself the task of suppressing it so far

as might be. She first attacked the captains of tugs plying on the rivers who were in the habit of calling their crews from the saloons where they spent their leisure moments by shrill blasts of whistle and siren. The personal motive which may not improbably have first suggested her action, was soon lost in a consideration of the distress such noises caused to the sick in the hospitals and in the homes along the river fronts, and then of that caused by the ordinary street noises to the inmates of hospitals wherever situated. This consideration has led to the inception of a movement the results of which, both direct and indirect, must be of a far-reaching good to the community that is well-nigh incalculable. Encouraged by the measure of success which her own unaided efforts had secured, Mrs. Rice invited the cooperation of others and established the Society for the Suppression of Unnecessary Noise. The defense of the sick in the hospitals from sleep-destroying noise was the special concern of this society, and the thought was conceived of safeguarding these sufferers by establishing areas within which special effort should be made to secure an abatement of the ordinary street noises. With the active and moral support of the members of the society, yet largely through her own effort, Mrs. Rice secured the passage by the Board of Aldermen of an ordinance establishing quiet zones in the immediate neighborhood of the hospitals of the city, and signs have been placed at the street corners limiting these zones, warning drivers and other users of the streets to reduce the speed of their vehicles and in other ways to observe the rule of quiet.

Attention having thereby been specially directed to the sources of unnecessary noise in hospital neighborhoods, it was found that the vicinity of a hospital was particularly enticing to those large numbers of children whose playground, for obvious reasons, must ever be the street. The going and coming of ambulances provides for these children that special spice of life—the titillation of horror—which their elders and betters procure for themselves in other ways, according to their standards. A child engaged in open-air play is a noise-producing animal, and properly so, but the least sensitive imagination may wince at the thought of what these child-haunted hospital sidewalks must mean to hundreds and thousands of helpless invalids. It was wisely thought that the only reformation possible for this state of things was to encourage the reforming spirit in the children themselves, and a children's society was formed to that end, called "The Children's Hospital Branch." The beginnings of this branch have been most interestingly detailed by Mrs. Rice in an article in the current issue of the *Forum*. There are to be no warning notice boards, no patrolling policemen, no prohibitions, adding the lure of the forbidden to an already existing temptation. Instead, these children of the streets are invited to become little brothers and sisters of pity, and pledge themselves of their own accord to help to guard the sacred silences that should hedge the very sick. More than twenty thousand children have already been addressed by the founder of the Children's Branch on this subject, all of whom are eager to be enrolled as members. They are asked to promise "not to play within a block of a hospital, nor in front of a house where some one is known to be very sick," and each child is presented with a badge to wear as a reminder of the promise. Each child is also given a blank membership card on which it is asked to write in its own words just how much it is willing to do for the patients in the hospitals. The naive and touching wording of many of these queerly-spelt promises would seem to prove that the sense of altruism is but lightly dormant in the smallest child, and it would be difficult to speak too highly of the wisdom that has known how to awaken it and start this much-needed reform.

Pepsin Secretion in Infants.

Of recent years the investigation of the digestive processes in infants has been pursued with considerable activity, and it has been shown that many of the preconceived ideas in regard to this function during the early weeks and months of life were inexact or entirely erroneous. This is true of the capacity of infants to digest starches, which has now been shown to exist in most cases at a very early period. Researches on the peptic activity of the infantile stomach have been less numerous and have also been unsatisfactory in that for the most part the determinations have been merely qualitative and not quantitative. Rosenstern (*Berliner klinische Wochenschrift*, March 16, 1908) has taken up the problem from the latter standpoint, using the method of Jacobi in which ricin is employed as the indicator for the pepsin content of the gastric juice. After trials of several forms of test meal he came to the conclusion that 50 c.c. of tea sweetened with saccharin was the most desirable, and extracted the stomach contents ten minutes after the child had begun to take the fluid. It was found that in healthy artificially fed children the pepsin did not appear in appreciable quantities until about the middle of the second month, but then increased until the end of the first three months, after which it remained fairly constant till the close of the first year. Healthy breast-fed infants produce less pepsin than those artificially nourished, and children that are under weight secrete the amount of pepsin that corresponds to their age. Observations on infants with digestive disorders showed that these did not appear to influence the pepsin secretion to any noteworthy degree, though in two cases of marasmus there was a diminution in the amount of ferment produced. These results invite further investigation of the question, and if confirmed, should prove of much interest to the pediatrists, as they may be interpreted as further evidence of the digestive power of the immature stomach to develop in accordance with the composition of the food that is put into it.

Angioneurotic Pseudoperiostitis.

The statements of patients that at times circumscribed tumors appear in different regions of the body to disappear again spontaneously, the symptom usually being associated in the sufferer's mind with some evidently wholly irrelevant condition, are ordinarily received by the physician with a certain amount of judicious skepticism. While this mental attitude is probably in most cases well justified, it must not be forgotten that the manifesta-

tions of angioneurotic edema may present themselves in some such way. While it is ordinarily the superficial structures that are involved in these swellings, Herz (*Zentrallblatt für innere Medizin*, March 21, 1908) describes a form having its seat in the periosteum to which he gives the name of angioneurotic pseudoperiostitis. The affection occurs in persons suffering from other forms of nervous instability, chiefly of cardiac nature, and the lesions always appear about the bones of the thorax. They consist of doughy swellings in the immediate neighborhood of a bone, and are tender and painful, while at the same time there is an exacerbation of the heart symptoms. The affection is readily amenable to treatment, warm applications being most effective. Owing to its nature it is readily mistaken for something else, and the author describes four cases, in one of which a surgeon seeing the tumor wished to operate for a supposed tuberculosis of the rib; in another it was proposed to inject gelatin into what was taken for an aneurysm of the aorta, while the pain in the other two was regarded as due to angina pectoris. While the condition is no doubt rare, a familiarity with its nature is desirable in order to avoid such diagnostic errors.

Roentgen Treatment in Dysmenorrhea.

Many forms of treatment are in vogue for dysmenorrhea, ranging from the conservative general treatment to the removal of the anatomically unchanged ovaries. In the *Centralblatt für Gynäkologie*, No. 5, 1908, M. Fraenkel reports twenty-eight cases of dysmenorrhea which were treated successfully with the *x*-rays. The painful periods disappeared after from ten to twelve exposures, and often after five. After they had disappeared once, treatment was suspended. The beneficial effects of the *x*-rays were, however, not permanent, for after three periods without pain the symptoms returned, and treatment had to be begun again, though now a few exposures sufficed again to relieve the patient. He considers the first week after the last day of menstruation as the best time for the treatment, and believes the good results are due to changes in the ovaries caused by the *x*-rays. Even if everything Fraenkel claims were true, it is probable that this form of treatment, if too long continued, would finally make the patient sterile, it is therefore undesirable in married women who wish to become pregnant. It is uncertain whether the sterility so produced is permanent. If it is permanent the *x*-ray treatment must be regarded simply as a rival of castration, but it would seem to be worth trying before the latter is resorted to, because by the *x*-ray the artificial menopause would be brought about more gradually than by double öophorectomy.

News of the Week.

Cuba Free from Yellow Fever.—Governor Magoon of Cuba has notified the Bureau of Insular Affairs of the War Department at Washington that according to the reports of twenty-six military surgeons stationed all over the island there is not a case of yellow fever in Cuba and that there is no need of a quarantine against Cuba. The Public Health and Marine-Hospital Service has nevertheless issued an order establishing a quarantine against Cuba with the exception of the metropolitan district of Havana, which includes Havana, Marianao, and Camp Columbia. This action makes Havana a "clean city" so far as yellow fever is concerned, but all of Cuba outside of that district is quarantined against. Major Kean, adviser to the Sanitary Department of Cuba, writes that the despatch from Mexico, published on March 14, to the effect that the ports of that country had declared a thirteen days quarantine against Cuba was incorrect; no quarantine of any duration had been declared by Mexico against Cuban ports.

Change in the Chicago Health Department.—Health Commissioner Reynolds of Chicago has divided the city into six districts. Each district is in charge of a medical inspector, who is to devote his entire time to this work, for which he receives $2,000 per annum. From now on, all employees of the Health Department will wear a uniform. Those below the grade of medical inspector will wear a blue blouse, with a single row of distinctive brass buttons, and a black soft felt hat. The medical inspectors will wear a double-breasted coat, with velvet collar and brass buttons, with a single gold star on the collar, and a black soft felt hat. The ambulance surgeons will wear a red cross on the left sleeve. The heads of departments will wear the same uniform as the medical inspectors, with two stars on the collar, and the commissioner will have three stars and a white soft felt hat.

Low Death Rate in New York.—During the months of January, February, and March the city's death rate was remarkably low. The Health Department's figures give the total number of deaths as 20,309, equivalent to a rate of 18.43 a thousand. During the past ten years the rate for this quarter has averaged 20.52 a thousand. The birth rate was also unusual, as the number of children born during the quarter was 32,655 as against 29,294 for last year, the ten year average being exceeded by 9,000. The number of marriages was 9,557, while last year there were 11,570.

Protection to the Oyster Consumer.—Health Commissioner Darlington of this city has published the following addition to the Sanitary Code: "Section 185.—No oysters shall be held, kept, or offered for sale anywhere in the City of New York without a permit in writing from the Board of Health and subject to the rules and regulations of the said board." Since most of the beds where oysters are fattened in sewage-polluted water are outside the city limits, the Health Department cannot control the practice directly, but by means of this new section of the Sanitary Code the sale of oysters so fattened can be prevented.

A Discussion of the Milk Problem.—The first of a series of five meetings to discuss the question of pure milk, under the auspices of the New York Milk Committee, was held on Saturday, April 4. Further meetings will be held as follows: At 2:30 P.M. on April 11, 18, and 25, and at 8 P.M. on April 25. The program of the first meeting was: "The Need for Improving New York's Milk Supply," papers being read on "The Present Condition of New York's Milk Supply" by Dr. Linsly R. Williams; "Milk as a Carrier of Infection," Prof. H. W. Conn; "The Relation of Milk to Infant Mortality," Dr. William H. Park. On Saturday afternoon, April 11, the subject for discussion will be "Tuberculosis." Papers are announced on "Milk as a Carrier of Tuberculous Infection," Dr. E. C. Schroeder; "State Legislation on Bovine Tuberculosis," Mr. Stephen G. Williams; "The Relation of Bovine Tuberculosis to

the Dealer," Dr. E. M. Santee. On Saturday afternoon, April 18, the topic will be "Methods for Improving the Supply." Papers will be presented on "Health Department Methods," Dr. William C. Woodward; "Sanitary Methods," Mr. Harry Bramley; "The Dealer's Attitude Toward Health Department and Sanitary Methods," Mr. Loton Horton. On Saturday afternoon, April 25, "Pasteurized Milk" will be discussed. The papers to be read are: "The Effect of Heat Upon Milk and Upon the Bacteria in Milk," Dr. Milton J. Rosenau; "Pasteurized Milk as a Food for Infants," Dr. Henry Koplik; "The Attitude of Public Authorities Toward Pasteurized Milk," Mr. Ed. H. Webster. At the evening meeting of the same day the discussion will be on "Certified Milk and Other Clean Raw Milks." Papers will be presented on "Certified Milk," Mr. Walter W. Law, Jr.; "Safe Raw Milk at a Moderate Cost." Dr. Charles E. North; "New York City's Future Milk Supply," Dr. Henry Dwight Chapin.

Prevention of Tuberculosis.—The Illinois State Board of Health recently issued a circular comprising sixty pages of printed matter, which serves as a practical guide for the consumptive and his associates. The title of the little pamphlet is "The Cause and Prevention of Consumption." The subject matter is presented in lucid and simple language, so that it can be easily understood by those of limited education.

A New Hospital for the Tuberculous.—The people of Cook County on April 7 will vote on a bond proposition, which will include plans for a new hospital for the treatment of the tuberculous, to be built by Cook County. The present institution at Dunning, Illinois, is to be turned over to the State. According to recent information, during 1907 and up to March 28, 1908, the Cook County institution cared for 2,805 out of approximately 8,000 tuberculous patients of the county. Of the 350 tuberculous patients now being cared for by Cook County, 40 are quarantined at the poorhouse, owing to the fact that beds elsewhere are unavailable.

Psychopathic Ward for Hudson River State Hospital.—A ward especially for cases of incipient insanity is to be established at the Hudson River State Hospital at Poughkeepsie. It is to have accommodations for eighty patients and a free clinic will be run in connection with it. The patients in this department are to be admitted and discharged with as little red tape as possible and without any legal commitment. It is expected to introduce the same system in the State institutions at Binghamton, Middletown and Utica.

New Ration for the Army.—The President has signed an order to take effect May 1 providing a new army ration. The principal change is in the garrison ration, to which are added butter, milk, spices, flavoring extracts, lard and baking powder. The additions will increase the daily cost per man by from 22 to 25 cents.

Bill Against Unauthorized Embalming.—Mayor McClellan has signed Coroner Harburger's bill to prevent the embalming of the body of any person dying under suspicious circumstances without the permission of a coroner. The penalty for violation of the provisions of the bill, which becomes a law immediately upon the affixing of the Governor's signature, is imprisonment for a term not exceeding one year, or a fine not exceeding $500, or both fine and imprisonment.

Institute for Tropical Medicine in Australia.—*Science* states that it is intended to establish an institute for tropical medicine at Townsville, in Northern Queensland. The general management will be undertaken by the three Australian universities having medical schools—Sydney, Melbourne and Adelaide. The federal government of Australia has agreed to subsidize the work at the rate of £450 per annum, and the government of Queensland will give £250; and these sums will be increased by private subscriptions. The managers of the Townsville Hospital will set aside a building for a laboratory, free of charge.

A Society to Protect Scientific Research.—The committee established under the leadership of Professor Starling to assist the British Royal Commission on Experiments on Animals, now that it is no longer required in its original form has been organized into a society called the Research Defence Society, having for its object the dissemination of knowledge about experiments on animals and opposition against antivivisection. The society, whose membership already includes many eminent scientists and physicians, intends to supply information, send speakers to debates, publish articles, etc.

Dr. Robert Koch arrived in New York on Tuesday of this week. He will remain here several days and will be a guest at a number of entertainments planned in his honor. On Saturday, April 11, he will be entertained by the German Medical Society at a dinner at the Hotel Waldorf-Astoria.

Professor S. E. Chaillé of the Tulane University medical school at New Orleans has been awarded a pension under the Carnegie foundation for retiring professors. Professor Chaillé is seventy-eight years of age and was graduated from Harvard University in 1851. For many years he has been professor of physiology and comparative anatomy and dean of the faculty.

Osteopaths and Death Certificates.—The acting Corporation Counsel of the city last week delivered an opinion to the Board of Health in which he construed the law passed last year by the Legislature in regard to osteopathy as not according to osteopaths the right of registry with the Board of Health for the purpose of signing death certificates. He recommended, however, that the question should be brought before the courts for decision by mandamus proceedings. Such proceedings have been begun in behalf of a Brooklyn practitioner of osteopathy who last February sent a death certificate to the Board of Health which was not accepted.

Christian Science and Diphtheria.—A Boston Christian Scientist died last week of diphtheria after having refused to allow medical care for herself or her husband and two children, all of whom had the disease.

Measles on a Transport.—The United States transport *Thomas* arrived at Manila on April 4 with fifty cases of measles on board. The *Thomas* is the second transport to arrive within a month with measles and mumps among the recruits on board.

New York Academy of Medicine.—At the meeting of the Academy of Medicine to be held on Thursday, April 16, a discussion of various aspects of exophthalmic goiter will be conducted by Drs. Louis B. Wilson of Rochester, Minn., W. S. Halsted of Baltimore, and Alfred Stengel of Philadelphia. On Thursday evening, April 30, there will be held a public meeting at which the Hon. Rufus B. Cowing will make some remarks on the value of medical expert testimony. At this meet-

ing the president and the members of the State and New York City Bar Associations will be invited to meet the Fellows of the Academy and the medical profession at large.

The American International Congress of Tuberculosis and the Medico-Legal Society of New York.—The American International Congress on Tuberculosis and the Medico-Legal Society of New York, meeting in joint session, will hold the sixth American International Congress on Tuberculosis at the city of Chicago, Illinois, on June 1, 2, and 3, 1908, under the presidency of Dr. Charles H. Hughes of St. Louis, Mo. The secretary of the congress is Dr. Juan J. Ulloa, 66 Beaver street, New York City.

Six Counties (Miss.) Medical Association.—At the semiannual meeting of this organization held in Clarksdale on March 25, the election of officers resulted as follows: *President*, Dr. Backstrom, Tutwiler; *Vice-Presidents*, Dr. Glass of Coahoma County, Dr. L. L. Bankstrom of Tunica County, Dr. J. S. Sanders of Tallahatchie County, Dr. Alexander of Quitman County, and Dr. T. J. Allen of Bolivar County; *Secretary*, Dr. J. W. Gray, Coahoma; *Treasurer*, Dr. L. D. Harrison. The next meeting will be held in Clarksdale in December.

Lincoln County (Ark.) Medical Society.—At the recent meeting of this organization the following officers were elected: *President*, Dr. J. F. Johns; *Vice-President*, Dr. W. C. Kimbro; *Secretary and Treasurer*, Dr. C. C. Price.

The American Therapeutic Society.—The ninth annual meeting of this society will be held in Philadelphia, May 7, 8, and 9, 1908, under the presidency of Dr. John V. Shoemaker of Philadelphia. The secretary is Dr. Noble P. Barnes of Washington, D. C.

California State Medical Society.—This organization will hold its annual meeting in San Diego, April 21, 22, and 23, 1908.

Iowa State Medical Society.—The annual meeting of this society will be held in Des Moines, May 20, 21, and 22, 1908.

Obituary Notes.—Dr. Edwin Porter of Northfield, Vt., died of pneumonia on March 19 at the age of eighty-two years. He was born in Northfield, and was graduated from the University of Vermont in 1850, and three years later received his medical degree from Dartmouth University. He at once began practise in Northfield, and at the time of his death he and his father had practised in that town uninterruptedly for ninety-two years.

Dr. A. P. McConnell of Ludington, Mich., died on March 24 at the age of eighty-two years. He was born in McConnellsville, N. Y., was graduated from the Ohio Medical College at Cincinnati in 1850, and practised in Pontiac for twenty-three years. He served as surgeon in the Twenty-second Michigan Volunteer Infantry. In 1872 he settled in Ludington.

Dr. Joseph F. O'Connell of Brooklyn died in Montclair last week after a long illness at the age of fifty years. He was born in Newark and was graduated from Bellevue Medical College at the age of twenty-one years.

Dr. Albert B. Robinson of Roxbury, Mass., died on March 29 at the age of seventy-three years. He was born in Pelham, and in 1857 graduated from the medical department of the University of Buffalo. For the next five years he practised in Amherst, but soon after the war broke out he entered the service as surgeon and continued until the close of the war. Since that time he had practised in Roxbury.

Dr. Edward G. Morse of Roxbury, Mass., died suddenly on March 24 of heart disease while talking to a patient. He was born in Roxbury in 1848 and was graduated in medicine from Harvard University in 1870, since which time he had practised in his native town.

Dr. William Pinkney Bridgham of Buckfield, Me., died on March 21 at the age of ninety-one years. His father was Dr. William Bridgham, Buckfield's first physician.

Dr. Harry M. Crossland of Dexter, Me., died of appendicitis in Worcester, Mass., on March 24 at the age of twenty-seven years. He was a graduate of the Maryland Medical College in Baltimore.

Dr. Wilbur Gillett of Detroit died of cerebral hemorrhage on April 1 at the age of fifty-six years. He was graduated from the medical department of the University of Michigan in 1879.

Dr. John C. Spear, a retired surgeon of the United States Navy, was killed in a runaway accident at Norristown, Pa., on April 3. He was born in 1839, and was graduated from the medical department of the University of Pennsylvania in the class of 1861.

Dr. William J. Pennington of Brooklyn died on March 30 at the age of forty-two years. He was graduated from Albany Medical College in 1891 and for ten years had been connected with the Department of Health.

Dr. Augustus C. Kinney of Astoria, Ore., died of carcinoma in Oakland, Cal., on March 24, at the age of sixty-three years. He was a native of Iowa and received his medical education in the Bellevue Hospital medical school. He had practised in Astoria for thirty years.

Dr. Charles J. Orr of St. Louis died on March 28 at the age of forty-one years. He was born in Louisiana, Mo., and was graduated from the St. Louis Medical College in 1891.

Dr. Wm. L. Orr, formerly of Ottumwa, Ia., died in Malden, Mass., on April 1 at the age of eighty-four years. He was a native of Washington, Pa., and after graduating in medicine from the Jefferson Medical College in Washington began practise in Ottumwa, where he resided for over fifty years. During the Civil War he served as surgeon in the Twenty-first Iowa Infantry.

Dr. Absalom Pettit of New Orleans, La., died on March 16 at the age of sixty-eight years. He was born in Warren County, Miss., and received his medical degree from the University of Louisiana in 1870. He was one of the organizers of the Orleans Parish Medical Society, and was well known for his work in the prophylaxis and treatment of yellow fever.

Dr. Dwight Flower of Monticello, Wis., died on March 19 at the age of sixty-eight years. Dr. Flower was born in Bennington County, Vt., and received his medical education at the Albany Medical College. He practised for a time in Buchanan County, Ia., and later removed to Monticello. A little over a year ago he retired from active work.

Dr. William P. Bridgham of Buckfield, Me., died on March 21 at the age of ninety-two years. He was a son of Dr. William Bridgham, one of the early physicians of Buckfield, and was graduated from the Medical School of Bowdoin College. For over fifty years he was an active practitioner, but about twenty years ago he retired.

Dr. Granville A. Harlow of Tyngsboro, Mass.,

died on March 10 at the age of fifty years. He had practised in Harpswell for ten years, removing to Tyngsboro in 1891. He was graduated from the Medical School of Bowdoin College in 1881.

Dr. Edward G. Morse of Roxbury, Mass., died suddenly on March 24 at the age of sixty years. He was graduated from Harvard Medical School with the class of 1870, and at once began practice in Roxbury, in association with his father. He was a prominent member of numerous medical societies, in which he had held many official positions.

Dr. George Linville Baker died at Philadelphia on March 24 at the age of twenty-eight years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1906, and he was recently temporary resident physician at the Pennsylvania Hospital.

THE MIDDLETON GOLDSMITH LECTURE.

The Middleton Goldsmith lecture of the New Pathological Society was delivered at the Academy of Medicine on Saturday evening, April 4, by Professor Frank B. Mallory of Harvard University, the subject being "The Results of the Application of Special Histological Methods to the Study of Tumors."

The present paper, the speaker said, was really a continuation of a study which he had published in 1905, entitled "Contributions to the Classification of Tumors." A great deal of information had been obtained by the application of two new staining methods, namely, the phosphotungstic acid hematoxylin stain, and the anilin blue connective tissue stain. By means of these, the fibrils of certain cells were distinctly stained and easily recognized. In practically all instances, the tissues were placed into Zenker's fluid, for fixation, within two seconds after the removal of the tissue from the body. This was extremely important in studies of this kind. Certainly the use of these stains had simplified the histological classification of tumors; the speaker recognized that such a classification had its drawbacks, but at the present time an etiological classification was not yet possible. The methods about to be discussed were not really new, but consisted rather in the more rigid application of well-known procedures, together with the use of a few new staining methods.

The speaker next described the ordinary fibroblast, and spoke especially of the two kinds of fibrils demonstrable with his stains. These were (1) fibroglia, rather straight fibrils developing in the body of the cell, and staining blue with the phosphotungstic acid hematoxylin stain, and (2) collogen fibrils, rather wavy fibrils lying between the cells and staining pale red under the same conditions. The arrangement, size, appearance, and distribution of these fibrils gave important clues concerning the tissue which was being studied. Professor Mallory then took up in some detail the various types of sarcomata, and described the appearance of the cells and fibrils as shown by means of the new stains. In connection with myxosarcoma, he said that there was little reason for placing this in a class by itself; it should be regarded as a variety of fibroma or of fibrosarcoma.

Turning then to smooth muscle cells, the speaker described the peculiar fibrils associated with these. These cells possessed coarse fibrils, the so-called myoglia fibrils, which were apparently limited to the cells to which they belonged. Surrounding the cells were also collogen fibrils. The appearances were so characteristic, that tumors belonging to this class were easily recognized.

Cells of neuroglia tissue occurred in two forms, namely, glia cells, and ependyma cells. Tumors belonging to this class had been so well described, the speaker said, that he would limit his remarks to two cases in which the differential methods of staining had been of great value in fixing the nature of the tumor. Professor Mallory then described a case in which a tumor had developed over the region of the coccyx in a woman 45 years old. The tumor produced metastases in different parts of the body, and after several operations caused the death of the patient. In the gross, the appearances were those of a sarcoma, but histological examination had shown that the tumor was a carcinoma. The remarkable part of this was that fibrils were present in large numbers in parts of the growth, between the cells filling the alveoli. The tumor was apparently developed from the gland tissue present as the remains of the neural canal, which can often be demonstrated as late as the fourth month of embryonic life.

The speaker said he had little to contribute to our knowledge of epithelial tumors, though here too the phosphotungstic acid stain had been very useful. He had found that the cells of the stroma of a carcinoma often showed more than a study of the epithelial cells themselves. In this connection, he spoke of the carcinomata which had been said to have turned into sarcomata. In one such case which had come under his observation, he believed that the tumor was really an embryoma with but slight differentiation of the cells.

Passing on to the endothelial tumors, Mallory gave his definition of endothelium, and stated that there was little to characterize such tumors. However, they showed up well in contrast with the tissue already described. The endotheliomata were divisible into three groups, namely, blood-vessel endotheliomata, lymph-vessel endotheliomata, and dural endotheliomata. He gave a detailed description of each class, and described also two cases of tumors of the lymphangiomatous class. These were quite rare.

There were three points, the speaker said, which this study had brought home to him. (1) It was important to study carefully each kind of normal cell by means of the above-mentioned methods so that this cell could be easily recognized wherever it was met with. (2) It was important to determine which was the essential cell in each kind of simple tissue, and to name the tissue accordingly. (3) It was advisable, in naming tumors, to do away with all terms referring to accidental features, such as "round cell," "spindle cell," "myxo-," etc.

After this discussion, Professor Mallory demonstrated a series of lantern slides, illustrating the various points which had been touched upon. One of the striking pictures thus shown related to a case of endothelioma. The patient was a girl 16 years old, whose right hand showed a large deformed tumor-like mass. From this extensions had taken place up the arm, and especially about the elbow and axilla. According to the speaker, these secondary growths were not metastases, but direct continuous growths, probably through the veins. A similar case had been described by Esmarch, and that surgeon had operated on his case some twenty or thirty times, finally bringing about a cure.

Skirts and Disease.—The death rate of the city of Prague is 42 per 1,000, owing principally to its bad water supply. As trailing dresses are believed to contribute to the dissemination of germs, a general prohibition against long skirts is being enforced.

Correspondence.

TREATMENT OF MORPHINE ADDICTION.

To the Editor of the Medical Record:

Sir:—In the entirely unauthorized reports which the newspapers recently gave of my demonstration of the efficacy of a method of treatment of the morphine habit so many inaccuracies occurred and so many misstatements were made that I think it best to publish my plan of treatment at once rather than to wait, as I should have preferred to do, until I had time to tabulate my cases and to demonstrate the value of the method privately to those specially interested in the subject. There is always danger that the general employment of any new treatment by the inexperienced may result, through neglect to observe some minor detail, in failure, and so this premature publication may, I fear, bring discredit upon a method which I am confident is, if properly used, truly a specific for the cure of morphine addiction.

The following are the formulæ employed:

No. 1.—Compound extract of colocynth, 1 grain.
Extract of hyoscyamus, 1-4 grain.
Extract of nux vomica, 1-12 grain.
Extract of jalap, 1-2 grain.
Podophyllin, 1-6 grain.
Oleoresin of ginger, 1-8 grain.
Calomel, 1 grain.
Mix and make one pill.

No. 2.—Pilocarpine hydrochloride, 1 grain.
Fluid extract of hyoscyamus, 2 drams.
Fluid extract of prickly ash, 2 drams.
Tincture of belladonna root, 4 drams.
Dose: 7 to 20 drops every hour.

No. 3.—Tincture of gelsemium.
Dose: 5 to 20 drops every two hours.

No. 4.—Tincture of strophanthus, 1-2 dram.
Tincture of nux vomica, 1 dram.
Tincture of convallaria, 2 drams.
Tincture of cactus grandiflora, 2 drams.
Tincture of digitalis, 3 drams.
Dose: 7 to 8 drops every 4 or 5 hours.

The following are the general directions for the employment of these remedies, but I need hardly remind you that every patient is a law unto himself in therapeutics, and that the physician must watch the case carefully all through the treatment, and modify the dosage and the intervals of administration, according to the indications. Self-treatment is, of course, hazardous and impossible of success. Even the physician will obtain much better results after he has had some experience and has learned to recognize the signs indicative of success or failure in the action of the remedies, and how to interpret the indicatons presenting themselves in the course of the treatment.

The usual dose of the accustomed drug is to be given at bedtime, along with three pills (Formula No. 1). In the morning, after *free* movement of the bowels, give another dose of the accustomed drug. If the bowels have failed to move, give a hot water enema or a saline laxative. Within one hour after the morning dose of the accustomed drug, give 10 to 15 drops of Formula No. 2 and continue giving No. 2 every hour. Twelve hours after commencing No. 2 start giving Formula No. 3, about 12 drops every 2 hours. When No. 2 has been given for 14 hours, give three pills (Formula No. 1); continue No. 2 and No. 3. After No. 1 has acted *freely*, give a moderate dose of the accustomed drug. Continue No. 2, but stop No. 3 for 8 hours after the last dose of the accustomed drug, then resume No. 3 as before. Twelve hours after the last dose of the accustomed drug give three pills (Formula No. 1) and when these have acted freely and show greenish or yellowish discharges, discontinue Nos. 1, 2, and 3 and start with Formula No. 4, about 8 drops every 4 or 5 hours. Continue this for several days. When greenish or yellowish discharges appear the cure is effected. Should the patient become nervous or restless, give 25 drops of Formula No. 3. If the bowels are slow, assist with a saline, hot water enema, or castor oil. If, about the time for the last dose of Formula No. 1 to act, the patient becomes nauseated, give plenty of warm water and induce vomiting; it will give relief. If aching of the bones occurs, give a hot bath. If sleep does not come by the second night, give bromides or trional. Watch the pulse throughout the treatment.

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UTERINE DISPLACEMENTS.

To the Editor of the Medical Record:

Sir:—I wish to say a word in reply to Dr. Frank H. Hancock relative to a "Plea for the Correction of Uterine Displacements," published in your journal of March 7, 1908. In the first place, what is the normal position of the uterus? It is perfectly mobile—like the testicle, sigmoid, enteron, arm, or leg. What is uterine displacement? It is fixation. A dislocated uterus is a fixed uterus. The uterus is dislocated or fixed in general by three means—peritonitis, myometritis, splanchnoptosia. A testicle is dislocated, fixed, by epididymitis. The uterus has no definite position except a mobile one; it continually moves. If the normal uterus is perfectly mobile, anatomically and physiologically, why should it be fixed, *i.e.* dislocated? A fixed uterus is pathological and will be insulted, injured in its function (sensation, absorption, peristalsis, secretion, menstruation, gestation). The "pexyite," examining a uterus fixed by a pelvic peritoneal exudate quickly announces that the uterus is dislocated and should be released. The next woman he examines with the uterus, however mobile, lying on the rectum he exclaims it is retroverted, dislocated, and must be fixed, which is substituting or adding a pathological state. Loose mobile testicles require no fixation, neither does the subject with the loose testicle seek fixation. In fact, the layman would not consider loose or mobile testicles dislocated—though the scrotum extend well distalward. The enteron is mobile, loose. Does it require enteropexy? The uterus should not be fixed that is pathological. Hysteropexia is not required; it is an unnatural, unnecessary, harmful operation. *Uncomplicated retroversion requires neither surgical nor medical aid.*

In 532 subjects Hancock had 147 retrodisplacements—then he would operate on 26 per cent. of women patients. I examine numerous patients in whom the uterus lies against the rectum who complain of no pelvic symptoms. The uterus is a pelvic organ, anatomically and physiologically, and should not be forced proximalward to be fixed in the abdomen and to the abdominal wall—the fixed uterus is compromised in function, circulation, and nerve supply (sensory and motor). As the normal uterus is always moving, and hence possesses no fixed position, the operator assumes considerable preconceived conceit in selecting a solid, immobile uterine position. The word "displacement" is unfortunate, as it introduces ideas in the patient's head with no compensatory value. Displacement must mean dislocation or it is a misnomer. Dislocation means permanent fixation.

Dr. Lucy Waite and myself made experiments on the cadaver to demonstrate the position of the uterus by injecting the rectum or bladder with air. Such experiments demonstrated an extensive variation or deviation of position regarding the uterus. However, marked deviation of position of an organ cannot be viewed as pathological. For example, in some 800 personal autopsic abdominal inspections I noted that the sigmoid flexure was a pelvic organ in some 75 per cent. of females and 65 per cent. of males. It was in the left iliac fossa in perhaps 20 per cent. and an abdominal organ in perhaps 10 per cent. But such marked deviations of position are not "displacements" nor dislocations; they belong to the natural mobile range of the organ, and sigmoidopexy should not be performed, as it would compromise the sigmoid function (sensation, peristalsis, absorption, secretion) and circulation.

Again as regards the uterine support, we should remember that the uterus is supported by every thread of tissue which extends from the uterus to the pelvic walls and adjacent viscera. The pelvic floor must also be viewed as a uterine support, with similar relations as the abdominal wall has to other viscera. The pelvic floor should be repaired like hernia in any other segment of the abdominal walls. As to Alexander's operation, it is an unnecessary, harmful, unnatural operation and should become obsolete. The round ligaments do not support the uterus—and can be but forced substitutes, *i.e.* pathological. If one opens the abdomen the round ligaments may be observed to be slightly relaxed—not suspending or supporting the uterus. If the round ligaments are forced into a primary uterine support they will elongate and the woman will require an Alexander operation about as frequently as a man will need his hair clipped. The Alexander operation is a hygienic operation at high risk and cost. Subjects with uncomplicated uterine retrodeviation practically do not suffer symptoms from it.

When symptoms arise with the uncomplicated retrodeviation they are from the nervous system or other detectable and non-detectable sources.

Dr. Hancock assumes matters too serious surgically. His "symptoms" tend to surgery—to "scalpel storms." The doctor may remember that blood cures disease, that the control of blood volume to any viscus is secured by means of anastomosis or inosculating circles, and that if he will induce the uteroovarian artery or the genital vascular circle to conduct increased blood volume to the genitals the vast majority of gynecological patients will be satisfactorily cured—with no genital pexy for future reference. Surgeons have gone mad, diagnosis and medical treatment are becoming buried, obscured in surgical technique. The post mortem is useless, forsooth, because diagnosis must be made in the living by abdominal incision and direct vision. The mechanical surgeon has arrived with his commercial tool chest, the cutter with his "scalpel storms" is multiplying rapidly, surgery is becoming a commercial by-word, the "pexyite" is abroad in the land, the suspicion of the people is beginning to arise from the slaughter of the mechanical surgeon.

A plea for correction of "uterine misplacements" is a direct bid for surgery which in general is not only unnecessary but harmful. Of the general causes of "uterine misplacements"—myometritis, splanchnoptosia (relaxation of uterine supports)—who is sufficiently irrational to advocate fixing a myometritic uterus as a sensible method of treatment? Of the "uterine displacements" from peritonitis, the cause of the displacement must be treated—the peritoneal adhesions must be absorbed, dissolved. Eighty per cent. of adult females possess peritoneal genital adhesions. In subjects of general "uterine displacements"—myometritis, peritonitis, splanchnoptosia—the first two simply require ample blood volume for cure; the last, the splanchnoptotics, certainly require no uteropexy, fixation, but rather repair of the pelvic floor. Hysteropexy is considered a short road to success; however, it is not only irrational, but accompanied by disorders, physiological (compromising of function), anatomical (compromising of structure), and pathological (substituting one alleged pathological state, displacement, for another). Fixing the uterus or uteropexy does not invite extra blood to the genitals, because fixation compromises the uterine function and consequently circulation and nourishment. Irrational surgery is debased surgery; it is a misapplication of art. Unnecessary surgery is criminal, harmful surgery; it injures patient and physician—creates misery.

If the uterus be "displaced" by myometritis, the most rational and successful treatment is by enticing blood to the genitalia—hyperemia. This we know has been accomplished for centuries by (1) hot douche, (2) massage, (3) medical tampon, hygroscopy, (4) intrauterine applications, (5) menstruation, (6) gestation, (7) electricity. Uterine hyperemia absorbs the exudates accompanying the myometritis, in decreasing the intense hpyertrophic myometritis and increasing the uterus in atrophic myometritis, which is a frequent disease. The treatment for uterine "displacements" due to peritonitis certainly as a general proposition demands not surgery. The indicated treatment is to absorb the adhesions or results of peritonitis. The basic treatment for pelvic peritoneal exudates is hyperemia to promote absorption—it is practically similar to the treatment for myometritis, *i.e.* an attempt to direct extra volumes of blood to the genital organs through the genital vascular circle (uteroovarian artery). Surgical treatment for pelvic peritoneal exudates is practically not for the purpose of fixing the uterus, but to release it from fixation in order that it may be free, mobile, and that its functions may continue uncompromised by fixation. The treatment for "genital splanchnoptosia," *i.e.* alleged excessive genital mobility, exaggerated "uterine displacement" possesses scant recommendation when its representative is the irrational hysteropexy. For genital splanchnoptosia the surgical treatment, if required, is in repairing the pelvic floor, not in fixing any of the genitals any more than one would fix loops of enteron in splanchnoptosia. Suspension of the uterus is secondary to its supports; the uterus is suspended by peritoneum, ligaments, vessels and nerves, connective and elastic tissue.

The supports of the uterus are the primary and essential factors for study. The uterine supports are the pelvic floor (*i.e.* the diaphragma pelvis rectale, the rectal muscle group, and diaphragma pelvis urogenitale—the pudendal group of muscles). The gynecologist is not merely a surgeon any more than the oculist, neurologist, etc. The specialist or gynecologist is the one who should understand disease of the genital tract and the relation of the latter to adjacent visceral tracts. His judgment should be exercised in favor of what is beneficial for the patient. All irrational, unnecessary, and harmful operations should cease, as hysteropexy, Alexander's operation, and the cruel, brutal, senseless uterine curettage (except for diagnostic purposes). Ovariotomy had its day, as well as trachelorrhaphy and clitoridectomy, and now let the other unnecessary, irrational, and harmful gynecological operations pass into deserved oblivion.

Because a woman becomes well subsequent to a gynecological operation affords no proof that she required the operation. She might have been a neurotic. Because dealing with neuroses (not disease) Dowie reported numerous recoveries.

Byron Robinson.

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TREATMENT OF CHRONIC ENDOMETRITIS.

To the Editor of the Medical Record:

Sir:—I note with interest an article in your issue of March 28, 1908, entitled "A Rational Method of Treatment in Chronic Endometritis," by Dr. Joseph M. Rector. He says: "Taking as a basis for my work a paper written by Dr. A. H. Goelet and read before the Gynecological Section of the American Medical Association in 1899, I have *perfected* the treatment which I shall here describe." (Italics mine). This statement promised a great deal, and I am always interested in and glad to commend any advance made in the treatment of gynecological conditions. But after a careful perusal of the paper I find that in every respect the treatment described is that advocated by me, even the iodine intrauterine irrigation, and not modified or "perfected" in any detail whatever. The mechanical construction of Dr. Rector's irrigator is the only item of difference. And whether this is an improvement or not is a matter for discussion.

A. H. Goelet, M.D.

New York

OUR LONDON LETTER.

(From Our Special Correspondent.)

SLEEPING SICKNESS—THE NATURAL CURE OF CANCER—MALIGNANT DISEASE OF THE CECUM—MEDICAL SERVICE OF ASYLUMS BOARD.

London, March 20, 1908.

The second International Sleeping Sickness Conference has terminated without the delegates coming to an agreement on the Draft Convention. The French and Italian plenipotentiaries were unable to accept the proposal made last June and then unanimously recommended for the establishment of a central bureau in London, though the German members strongly supported the plan. Other points were also objected to by the French plenipotentiaries, and though the majority of the powers favored them it was thought useless to proceed further in the absence of unanimity. Lord Fitzmaurice, in closing the proceedings, said the position was the same as at the conference on Egyptian finances in 1854. Here agreement was not possible, but the next year a solution was found. This, he thought, was a happy augury that the present assembly of distinguished scientific men and the discussions which had taken place would help to form opinion, and he hoped much could be done by separate conventions and ultimately a central bureau established for combating the disease. The Lord Mayor entertained the president and plenipotentiaries at luncheon on Monday.

The conference having failed, a meeting of the African Society to hear a paper on the subject by Colonel David Bruce was particularly opportune. This took place, as previously fixed, on Tuesday evening, the chair being taken by Sir West Ridgeway, who recalled Colonel Bruce's achievements, especially his latest discovery of the cause of Malta fever, which had had the happiest results on the health of the Mediterranean stations. Colonel Bruce, whose lecture was illustrated by many lantern slides, said that sleeping sickness had been known on the west coast of Africa ever since those parts had been explored, but was long looked upon as a pathological curiosity rather than as a disease with great power for evil, such as it is now known to be. It was first observed in Uganda in 1901 and the common theory was that it was brought there by Emin Pasha's Soudanese soldiers and followers, some 10,000 in all, who settled at Busoca. The proved facts were that it was caused by a small blood-parasite, a trypan-

osome, something like that which was carried from animal to animal by the tsetse fly; that the fly took the trypanosome from the blood of wild animals and passed it on to horses and that if trypanosomes were injected into the blood of a monkey it suffered from sleeping sickness. In Uganda the distribution of the disease and of a particular tsetse fly were the same, and that fly flourished only on the part of the lake shore where forests and deep jungle growths were near. The fly required clear water and forest. The natives held their markets with the islanders on the edge of the lake and so were bitten by the tsetse as they lay on the shore. Sleeping sickness was spreading, owing to the demand for native labor, and was a menace to the opening up of Central Africa. At present it seemed certain that the disease was only carried by one species of tsetse fly—the *Glossina palpalis,* so that the *Glossina morsitans,* which was found more south, in the Transvaal and Rhodesia, did not threaten those countries. Professor Koch's theory that the chief food supply of the *Glossina* was crocodile's blood required proof. *Glossina palpalis* existed where crocodiles did not, and in the laboratory, it fed on any animal food offered. As the fly could only live where there were dense forests near to clear water, good work might be done by clearing trees near the great ferries of the lakes. As to cures, Colonel Bruce said there was not a single well-authenticated instance of cure of the disease in man and all attempts to render him immune by an antitoxic serum had completely failed.

The natural cure of cancer was the subject of Professor Handley's Hunterian lecture at the College of Surgeons on Friday. He began by saying the spread of the disease in the body was mainly by means of a process of tendril-like growth along the lymphatic vessels—a "process of permeation." Referring, then, to recorded cases of spontaneous cure of fully developed cancer, he said that, though such cases were extremely rare, complete natural cure was not an exceptional event, as shown by what is called "atrophic scirrhus." As to records of incomplete natural cure, illustrated by the disappearance of the original growth or its satellite nodules, the lecturer said retrogressive processes occurred normally in cancer, so that there was nothing anomalous in cases of natural cure. Lymphatics along which cancer cells had grown were ultimately converted into fibrous cords, in which no cancer cells could be traced. Particles of growth arrested in the lungs were destroyed in a similar way. Large masses of cancer tended to degenerate from their center to their circumference, and ultimately were replaced by a fibrous scar containing no cancer cells. The process of repair began in the oldest part and spread centrifugally, but it rarely overtook the growing edge of permeation and was, therefore, usually ineffective in saving the patient's life. It was a purely local process, depending on degeneration of the cells, and did not indicate blood-immunity, such as was found in fevers. Nevertheless, the recognition of this natural mode of cure may have valuable results. The lecturer regarded it as absolutely certain that many so-called remedies for cancer owed their reputation to misinterpretation of the results of the natural process of repair. Nothing, he declared, had yet been discovered which could replace surgical measures. There was some evidence to show that, even in cases where the growth could not be completely removed, nature might be enabled, through the operation, to deal successfully with the remainder. The natural mode of cure involved destruction of the lymphatic vessels and consequent destruction to the flow of lymph. As an instance, extremely painful swelling of the arm was frequent in mammary cancer.

Mr. Handley then mentioned that as a result of his work in the Middlesex Hospital research laboratory, he had devised a simple operation for the relief of the condition. This consisted in draining the swollen arm by a number of buried silk threads, which carried away the excess of fluid by capillary attraction. He compared the attitude of the public to cancer research to that of a man who sowed wheat in October and expected to reap in January. In contrast with that was the indifference of the pure scientist, for whom absolute intellection was the ultimate goal. Pending the achievement of larger results by methods still in their infancy, he was glad to be able to produce a minor instance of the immediate fruition of cancer research.

The concluding Lettsomian lecture was devoted by Mr. Charters Symonds to malignant disease of the cecum. Operative measures, he said, were very satisfactory, even when large portions were removed, the lymphatic infection being slow to occur and extension delayed. He advocated early operation in suitable cases, but it must be remembered that the disease had often been in existence long before any sign of obstruction or a tumor arose. The first part of the large intestine was particularly suitable for resection on account of the length of the mesentery, and the satisfactory condition in which the parts could be left, as in joining the ileum and colon the functions practically remained undisturbed. There were two cardinal signs of malignant disease of the cecum, viz., intestinal colic as an early symptom, and a tumor which is movable, hard, well-defined, and so close to the adominal wall that it can be grasped in the hand and lifted forward. It can also, from the position of rest, be pushed downward, swinging inward toward the median line. Upward it takes a more vertical course. Again, it can be moved directly inward toward the umbilicus, when a gurgle is often heard. The range of movements may naturally be limited by fixation of the growth, and the degree of mobility of the cecum may vary somewhat in different individuals, but, taken together, the points named would not be met with in other tumors in the region. When the disease began in the ileocecal valve, colic would precede the appearance of a tumor, but if above the valve colic might be absent. The colic was of brief duration, attended with gurgling and often with vomiting without nausea, so that a meal which had been interrupted might be returned to. The pain of the colic at first is central, but afterward settles in the cecal regions.

As to diagnosis, Mr. Symonds remarked that the mobility of the tumor and an appearance of health might prove deceptive. A suppurating growth might resemble appendicitis, a point illustrated by two cases, in one of which the sinus had healed. Sudden pain in the iliac fossa, with high temperature and a lump, had in two cases been the final signs of malignant growth of the cecum The tumor formed by tuberculous glands is smaller and fixed, and there is no obstruction. Actinomycosis may in the late stage resemble malignant growth, but in the earlier stage rather suggests a calcareous concretion on account of its hardness, fixation, and persistence.

With regard to the limits of operation, Mr. Symonds said, of course, resection was out of the question when secondary deposits were present. But slight infiltration of the anterior abdominal wall did not always absolutely forbid operation. He had once removed an infiltration scar, the result of a former operation, together with the cecum, but recurrence took place after a brief interval. Adhesion and infiltration of small intestine might not altogether forbid extirpation. Pallor indicated that the patient was unfit for a long operation, for it was probably due to disseminated growth—a true cachexia—or to small hemorrhages, as in gastric carcinoma or necrosis in the growth. When this last was the cause, removal might be successful on a very vigorous patient. Mr. Symonds uses a small Murphy's button for the junction of ileum and colon and places a row of Lembert's sutures round the junction, and surrounds the parts, whenever possible, with great omentum. He recommends postponement of anastomosis when the contents of the bowel are septic, and mentioned two fatal cases in support of this view. When palliative treatment by anastomosis was carried out, he saw no necessity for dividing or otherwise occluding the ileum below the junction. That plan would only determine an accumulation of feces in the colon, between the growth and the junction.

Service with the asylums has long been unpopular with the profession. The dearth of candidates was considered at the board's meeting on Saturday, when it was stated that certain rules were largely responsible. A committee had dealt with these and recommended some changes. The first was that requiring annual re-election of assistant medical officers after three years' service. Another required an officer receiving a visitor to notify the clerk immediately and making a charge for any refreshments supplied. No such regulations existed in other asylums, and the committee recommended their withdrawal. After discussion, the regulation as to re-election was rescinded, the other being referred to the general purposes committee for further consideration and report.

Bacteria on Trailing Skirts.—In a recent lecture, Professor Bottomley of London said that a piece of cloth cut from a trailing skirt worn by a woman walking about the West End streets was found to harbor 16,500,000 bacteria, including many tubercle bacilli.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 26, 1908.

Dental Caries as a Cause of Other Diseases.—L. W. Baker concludes a well-illustrated paper as follows: Dental caries, or tooth-rot, is the most prevalent disease that attacks man, and is a preeminent factor in the causation of other diseases in the human body. This initial disease is the cause of great physical suffering, to check which many millions of dollars are annually spent in this country. Thus, to prevent dental caries would be a great financial saving, and a very great step in preventive medicine. Since this disease is a problem of the civilized world, it should be further investigated; and to aid investigation money should be provided to secure the most eminent men in research work. In the present state of scientific knowledge, the most adequate means of combating dental caries and oral sepsis is by the enforcement of hygienic measures. In order to make his hygienic fight successful, the physician and the surgeon should cooperate with the dental practitioner, for this branch of hygiene requires a thorough knowledge of the teeth and their adjacent tissues. Skilled dentists, therefore, should be placed upon the various hospital staffs to treat this infected area which so materially hinders both surgical and medical treatment. Dentists should give the nurses instruction in the hygienic care of the teeth. Dentists should also be placed upon the staff of medical inspection of the public schools, for the condition of the child's mouth is just as important to its health as the condition of its throat and nose.

Idiopathic Dilatation of the Colon.—E. H. Stone reports one case of this unusual condition occurring in a man of fifty-six years. There is in this malady an apparently innate tendency to dilatation independently of any discoverable cause. There is no scybalous accumulation, no atony, no paralysis. Many cases develop in apparently healthy persons, and at autopsy the bowel wall is found hypertrophied. The genesis of this disease may be interpreted in two ways: According to Mya, the dilatation and hypertrophy are inborn (megacolon), while according to Generisch, only an abnormal length and abnormal course are hereditary, following which the dilatation and hypertrophy arise as secondary factors. Nothnagel and Coucetti on the other hand believe the idiopathic dilatation to be due to an inborn weakness or partial defect of the muscularis in the lowest part of the large gut, with a secondary hypertrophy of the portions above. The condition causes a greatly distended abdomen with high-grade constipation. Patients are generally males and most commonly children. Symptoms are such as would be suggested by the existence of a greatly distended gut. The most important point of differential diagnosis is that relating to intestinal obstruction. Treatment is either medical or surgical. The former will prolong life but will not cure. Of surgical procedures, artificial anus, and resection of the dilated bowel, have been proposed and successfully performed with permanent relief of all bowel disturbance.

New York Medical Journal, March 28, 1908

The Relation of Mental Attitude to Bodily Function.—W. L. Conklin believes that imagination produces not only functional disturbance but even organic changes if these disturbances are long continued. The same effects may follow long-continued exercise of the intellect, the emotions, and the will. Thought, either conscious or unconscious, precedes and gives direction and character to bodily function. As physicians we give too little attention to psychotherapy. By this term the author does not refer to hypnotic suggestion, which in his opinion has a very limited field of usefulness as a therapeutic resource, but to the practical application of the plain, common-sense fact that right thinking, a normal, healthful mental state or attitude, is conducive to continued bodily health and a potent remedial agent when bodily health is below the normal standard. He wishes to place emphasis on the fact that just as *bodily* attitude does not mean the position of the head or an arm, but of the body as a whole, so *mental* attitude refers, not to the will or the emotions, but to the mind in its entirety. What is the trend of a man's thought? Can he use his intellect and as a rule reach conclusions which are definite and reasonable? Are his emotions and imagination under control and is his volition strong? Has he an object in life and some sense of personal responsibility or is he aimlessly drifting? These are questions which have a distinct bearing upon the bodily function and health of any individual. An intelligent recognition and application of the principles involved in the relationship of mind and body is of great value in the scientific treatment of disease. It is not so easy as to prescribe veronal and valerian, but more lasting results may be looked for. Moreover, the patient who has been taught something regarding the importance of mental attitude in its relationship to health will be less in danger of a repetition of his present painful experience, and preventive measures must always be regarded, both from a scientific and from a philanthropic standpoint, a long step in advance of those which are palliative or curative only.

The Influence of Animal Therapy Upon the Opsonic Index of Tuberculosis.—Five clinical histories are given by G. B. Sweeney. In a previous issue of this journal (December 7, 1907), the author described the clinical results obtained in tuberculous patients, following the administration of a lymph derived from a bullock which had previously been rendered immune to tuberculosis. Of the five cases here reported, the opsonic index was raised, and the general condition vastly improved in four. The fifth patient, in which, at the commencement of treatment, the index was as low as 0.68, did not respond in any way to the serum, and at the time of the report was failing rapidly. Daily injection of the serum in dosage of 10 minims was employed as a routine treatment in all the cases. The author believes that the benefits obtained were due as much to the invigorating influence of the lymph upon the phagocytes as to its specific antitoxic action upon the tubercle bacilli.

The Blood Conservation of Neurotic Individuals.—J. G. Drennan notes the occurrence of an extreme degree of pallor in certain persons who are exceptionally active, and who are said, in common phrase, to "live on their nerve." But the blood of these same neurotics is not the blood of an anemic person, however much in other respects they resemble one another; but the pallor of the one is not the pallor of the other; that of the neurotic is due to the absence of blood in the capillaries of the skin, and not, as in the anemic, due to the presence in them of a blood poor in corpuscles. This blood circulates in the superficial capillaries of his skin and gives him the typical pasty, sometimes rosy, puffy appearances of the anemic; while, on the other hand, the neurotic has empty capillaries in his skin. It has been scientifically demonstrated that if his skin is pricked with a needle no blood issues from the puncture, showing that there is an absence of blood in the capillaries of the skin, while in the case of the anemic a thin, watery, reddish fluid issues, denoting the presence of a poor quality of blood. The neurotic is a shrewd individual; whether consciously or unconsciously, so one cannot perhaps say, though experience shows that in many respects he is consciously so; though probably in this one respect it is unconsciously that he regulates his blood supply for his own best interests. Nature wisely attempts to make a good use of the small amount of blood which such a person manufactures, normal in quality, but subnormal in quantity, and, therefore, not sufficient for all the requirements of the body. To thus economize, she restricts the flow to the skin, allowing merely sufficient to maintain the skin in a condition of living, not of health, however, for the skin is tough and leathery, due to poor vascular supply; but it furnishes a covering for the body, even if its other functions are not performed. The bulk of the small blood supply of the body in these cases is sent to the most vital structures, and they are maintained in a fair degree of health, and to all appearances the person performs the ordinary, and sometimes extraordinary, duties of life as well as his more robust-looking brother. Very often considerable of this scant supply goes to the brain and spinal cord, and a well-nourished nervous system, even if it be in a neurotic person, regulates the other systems. His efforts may be spasmodic, but generally they are fit for the occasion. Never despair of one of these pallid workers flunking his duty, when necessity or ambition make demands upon him. The proverbial pallor of the hard student is accounted for in this same way; the bulk of his blood supply going to nourish his brain. There is, on the other hand, the rosy neurotic, less often seen, who is also anemic, and to whose skin considerable blood is supplied; there is not in this case the conservatism of the other, nor is the blood of such good quality. The skin in the pallid case is rather a foreign covering, and not the true covering of a human body.

Journal of the American Medical Association, March 28, 1908.

The Importance of Ophthalmoscopy.—E. Jackson emphasizes the importance of the use of the ophthalmoscope in the study and diagnosis of disease, outside of the specialty of ophthalmology. He points out the specially favorable opportunities afforded by the eye for pathological

observation, giving, at it does, the means of direct inspection of the most delicate mucous membrane in the conjunctiva, of the effects and repair of injury in the cornea, of lymph spaces and channels, and of unstriated muscle in the anterior chamber, and iris, and of the nutritional and other changes of a modified epithelial tissue in the lens. It is through the ophthalmoscope, however, that ophthalmology is able to bring its greatest contributions to general medicine. The revelations of the Roentgen ray, he says, compared to those of the ophthalmoscope, are as the groping among twilight shadows to clear vision in strong sunlight. Not only do we see things with the ophthalmoscope, but we see them clearly, and we see them with the magnification of a good working microscope, and we see them alive. Passing with simple mention the vast number of conditions of cerebral, and general, and local disease, in regard to which the ophthalmoscope gives important information, Jackson takes up, to illustrate his points, the changes in the vessel walls and the retinal circulation that are so readily studied by the ophthalmoscope, and says their importance is not sufficiently appreciated by the profession at large. We are also able to study with the ophthalmoscope the results of lesions of related organs through the nervous and vascular connections of the retina and by the disturbances of the field of vision. The lesions of the eye have peculiar importance with reference to general pathology and general diagnosis, and the time will come when the observation of the ocular circulation is deemed as important as that of the pulse in the diagnosis of disease.

Infant Mortality in the Summer Months.—S. E. Getty gives an account of methods by which the infant mortality from digestive disorders in Yonkers has been reduced 50 per cent. within the last twelve or fourteen years. This has been accomplished by securing a better milk supply, tenement inspection, educational methods with both physicians and parents as regards infant feeding, etc., but the most effective measure of all, in Getty's opinion, was the establishment of a milk dispensary. The effect of high temperature and humidity in the summer months, has, he thinks, been overestimated, but sudden changes, especially a rapid drop after a heated term, tend to increase the number of deaths. Epidemics of measles or whooping cough in late winter or early spring also seem to have a like effect.

Nerve-bridging.—A. S. Taylor, New York city reports a case of brachial birth palsy in a child aged one year, in which a two centimeter gap after removal of a cicatricial mass in the brachial plexus was successfully bridged by loops of chromicized catgut wrapped with Cargile membrane. Power was gradually restored to the paralyzed muscles, the trophic changes disappeared to a large extent, and the flexion contracture of the fingers was also gone, so that twenty-eight and a half months after the operation the child used its arm freely, and the improvement was still progressing.

Epididymitis and Orchitis Complicating Typhoid Fever.—The rarity of reported cases of orchitis and epididymitis as complications of typhoid fever is noticed by J. G. Beardsley, who reports briefly four cases. On inquiry among physicians, he finds that these complications are by no means rare, and he attributes the infrequency of reported cases in the literature largely to a popular misconception that such complications were due to pre-existing gonorrheal infection. He shows how the typhoid bacilli can reach the organs by way of the blood stream, and through the urethra by way of the vas deferens. The 102 cases he has collected from the literature are analyzed, and his conclusions given substantially as follows: 1. Epididymitis or orchitis, occurring during typhoid fever or during its convalescence, is, in the majority of cases, due to infection by Eberth's bacillus. 2. These complications may be caused by other pus-producing bacilli, but this is unusual. 3. The conditions may also be caused by phlebitis and thrombosis of the testicular veins, due to the same bacillus. These complications may occur during the course of the disease, but are more common during convalescence. 4. The lesion, as a rule, is unilateral, but it may be bilateral, and involve both the epididymis and the testicle, or either, and not infrequently the cord as well. 5. Effusion into the tunica vaginalis testis is seen occasionally, and there may be urethritis and discharge. Localized necrosis and suppuration, with extrusion, is an uncommon termination, the usual one being resolution in a week or ten days. Treatment consists in support by a suitable suspensory bandage and the local application of cold. Opium may be used to relieve pain. If inflammation does not subside, and suppuration threatens, the ice bag should be replaced by hot applications. If pus forms, he advises incision and drainage. Very rarely, the complete disintegration of the organ may demand its removal.

Diffuse Suppurative Peritonitis.—Stuart McGuire gives a sketch of the history of the development of the now generally accepted method of treatment, which was rationally deduced from scientific observations, and consists essentially of Fowler's position and Murphy's proctoclysis; hence, it may properly be called the Fowler-Murphy treatment. Its practical steps are as follows: Open the abdomen over the primary focus of infection and correct the trouble, so that the admission of more poison is prevented. Make a second short incision just above the pubes, and insert a large rubber drain to the bottom of the pelvis. The work should be rapid, with as little disturbance of the viscera as possible, and no attempt should be made to remove the pus by sponging or irrigation. Place the patient in bed in an exaggerated Fowler's position, and give saline solution by continuous low-pressure rectal irrigation; administer morphine in small doses for pain, and spartein in large doses as a general stimulant and prophylactic against urinary suppression. Give no purgatives, but secure bowel movements by enemata. If there is much nausea and vomiting, irrigate the stomach thoroughly and withhold food until the stomach can retain and assimilate it. Since he has adopted this method McGuire has seen a great reduction in his mortality. He objects to the semi-sitting position in these cases, because: (1) It makes it difficult for the nurse to place the bedpan properly; (2) it is unnatural, and subjects the patient to mental and physical strain; (3) he will slip down when relaxed by weakness or sleep, so that his body will bend at the costal arch, and his abdomen will be parallel to the surface of the bed. For these reasons, McGuire prefers raising the head of the bed, thus getting a uniform flat inclined surface, inclined at any angle, and the patient is completely relaxed and easily nursed.

Adiposis Dolorosa.—J. B. Frankenheimer gives the history of a case of adiposis dolorosa occurring in a woman, aged seventy-seven, with pronounced mental symptoms—stupor, apathy, and loss of memory. The attack began with projectile vomiting and headache. There was a history of probable lues and of excessive sexual indulgence in early married life. Marked improvement followed the use of thyroid treatment (5-grain tablets, t. i. d.). There was no history of alcoholism. Frankenheimer reviews the symptoms, pathology, etc., of the disorder, calling special attention to its excessive incidence, proportionally, in females, the evidence of thyroid involvement, and the part possibly played by the genital organs in the production of the disease. This latter can only be ascertained, he says, by further study, but he mentions the following observed symptoms as significant: Excessive menstrual flow, uterine hemorrhage, early menopause, commencement of disease at menopause, exacerbation following abortion, inception of disease at delivery. In conclusion, he suggests that adiposis dolorosa, like acromegaly, is a dystrophy, the one affecting the fatty, the other the osseous structures; and that there is present a toxemia dependent on a dysthyroidismus, and the disturbed function of the pituitary body and the genital organs.

The Lancet, March 21, 1908.

Preliminary Note on Some Aspects of Splenic Anemia.—G. A. Gibson refers to the case of a man of thirty-six years who presented the usual symptoms. The question of splenectomy came up but it was considered wise to first ascertain the state of the bone marrow in order to determine whether any useful end would be attained by surgical intervention. Accordingly and with the patient's consent, the left tibia was trephined and a small portion of marrow removed for examination. This revealed the presence of a high degree of gelatinous degeneration without any appearance of regeneration. All idea of operation was therefore given up. The patient died about one year from the commencement of his symptoms from hemorrhages, dropsy, and exhaustion.

Obstruction Caused by Sarcoma of the Small Intestine.—The patient of A. C. Firth was a woman of 62 years who in May, 1907, was operated on for a strangulated femoral hernia on the right side. Three weeks later pain came on in the left iliac region with constipation and vomiting; readmission to hospital, October, 1907; some abdominal distention, acute pain, no tumor detectable, and some tenderness over the lower abdomen. Abdominal section revealed two bands attached side by side below to the crural ring on the right side and above, about half an inch apart, to a knuckle of small intestine. They were about one inch long and as thick as a No. 4 catheter. After division of the bands between ligatures a further investigation showed a mass resting on the edge of the pelvis. It proved to be freely movable and when brought out of the wound was found to be a growth involving a portion of the small intestine. The bowel above was much

dilated and that below contracted, so the growth was freely excised, together with a good margin of bowel and mesentery, and a lateral anastomosis performed. Recovery was slow but uneventful, and the patient was discharged in the latter part of November with the obstruction entirely relieved. When last seen (March, 1908) she was very well and was following an active life. The specimen removed consisted of a ring growth in the lower part of the ileum. It was about one inch wide and half an inch in thickness, the maximum measurements being at the mesenteric side of the bowel. The caliber would not admit the little finger. The mesentery was not invaded and the peritoneum over the mass was normal. No enlarged glands were found at operation. On opening the intestine the growth projected into the lumen of the gut and was covered with healthy mucous membrane, no ulcerated surface being present. The tumor was sent to the clinical laboratory and under the microscope it proved to be a typical round-celled sarcoma. On receiving the report the patient was carefully examined with a view to finding, if possible, evidence of sarcoma elsewhere, but none was discovered.

Deaths Under Anesthetics.—Speaking of facts brought out by the official reports to the Registrar-General, F. J. Waldo presents the following conclusions: (1) That present available data as to deaths during anesthesia are so imperfect as to be useless for the purposes of formal investigation. (2) That the Registrar-General's returns of such deaths are for the most part obtained from coroners' returns of deaths occurring in hospital practice. (3) That only a small proportion of deaths under anesthesia in private practice ever come to the notice of registrars or coroners. (4) That imperfect as are the returns for England and Wales, those of Scotland and Ireland are still less trustworthy. (5) That with such imperfect data it is impossible to form any trustworthy conclusions as to the absolute rate of fatalities to administrations, or to the relative proportion of deaths to administrations in the case of particular anesthetic drugs. (6) That it is highly desirable to arrive at satisfactory conclusions as to the precise facts of all deaths under anesthesia both for the safety of the public and the furtherance of scientific knowledge.

Do Fleas Spread Cancer?—V. G. Webb reports the case of a woman of 58 years who had been in the habit of visiting another woman suffering from advanced rectal cancer. On one of the last evenings of November, 1907, while sitting by the woman's bedside, she was severely flea-bitten on the right breast. On December 2, she showed the author the breast in which she had not previously noticed any alteration. The skin was hotter than over the left breast and was slightly inflamed, and the whole breast looked like that of a woman on the third day after delivery, except that the nipple was a little retracted. The diagnosis was interstitial mastitis, and the breast was bandaged over a pad soaked in glycerite of belladonna. After about a week's treatment all external signs of inflammation were gone, and the breast was nearly its normal size; but in a few days it had enlarged again, though not nearly to the same extent. There was very little pain and the size kept fluctuating. In the second week of January last the swelling became more localized in the upper and outer segment. Rubbing with ointment of iodide of lead was tried and there was a slight discharge of blood from the nipple. On February 1 a diagnosis was made of obstruction of ducts by papilloma and congestion. On February 17 the patient was admitted to the hospital and on the 18th the entire breast and a gland which was enlarged were removed. The patient made a very quick recovery. The naked-eye appearance of the growth confirmed the diagnosis of papilloma. On microscopic examination the growth showed in parts simple papilloma, but in others the papillary growths had malignant characters—*i.e.* the case proved to be duct carcinoma. The gland showed no malignant characteristics. It seems possible that the whole trouble has been due to the flea-bite inoculating cancer germs. Of course this may be wrong and the growth immediately after may have been only a coincidence, but it seems worth while testing whether inoculation can be produced in this way. The points to be emphasized are: (1) that the patient was bitten by fleas from the bed of a cancer patient; (2) that there followed an inflammation (though it was not necessarily *post hoc propter hoc*); and (3) that after about a fortnight a definite growth developed, ending in duct carcinoma.

British Medical and Surgical Journal, March 21, 1908.

The Local Treatment of Diphtheria.—J. T. Maclachlan extols the merits of the hourly application of a mixture of Liq. hydrarg. perchloridi and glycerite of tannic acid in equal parts. He advises its use every hour, night and day, until the membrane is gone, and then at intervals for a week or longer, until the swab test is negative. One illustrative case is detailed. [The stirring up of a case of diphtheria every hour, night and day, for any purpose whatever, smacks more of the Middle Ages than of the year of grace, 1908. Abstr.]

A Case of Syphilis, Phthisis, and Locomotor Ataxia.—The patient of H. G. Sutherland was a man of forty-six years. The title explains the case. In regard to the effect of syphilis on phthisis, the author states that all authorities admit that the former predisposes to the latter. If the phthisis breaks out during the secondary specific period, it runs a rapid course, but later the malign influence of the latter malady is greatly lessened. In the case under consideration the lung lesion did not appear until twenty years after the specific infection, and is now running a chronic and benign course. Evidences of sclerosis are found also in the condition of the arteries, although there are no signs of aortitis or nephritis; and also in the condition of the spinal cord. It is little wonder, then, in an area of the lung where the tissues not only share the general incitement to sclerosis, but are also subject to the irritation of the tubercle bacillus, that fibrosis should be active. Further, there is little doubt but that the active hyperemia in the pulmonary lesion, present during "periods of high blood pressure," will also augment this process. Thus syphilis, one great cause of arteriosclerosis, whereby life is shortened, affords a slight reprieve from a disease which might otherwise have been fatal. With regard to the course of phthisis following syphilis, it appears to be true that the more ancient the syphilis the more hopeful the prognosis.

Münchener medizinische Wochenschrift, March 17, 1908.

Tuberculin Reactions.—Heinemann compares the results obtained by means of the conjunctival reaction and the method by inunction recently described by Moro. The patients tested by the former procedure were one hundred and forty-four in number, of which forty-eight were tuberculous, thirty-three suspected, and sixty-three not suspected. Of the first group, eight gave negative reactions, of the second, eleven were negative, and of the third, fifty-three. Of the nonreacting tuberculous persons, five were in the first stage of the disease, and three in the third stage. The author, therefore, concludes that the method may, in some cases, be unreliable as a diagnostic procedure. The inunction test was applied in sixty-six cases after a previous conjunctival test, and by itself in one hundred and eight other cases. The results obtained in this way lead Heinemann to believe that in adults the inunction method is at least as useful as the eye reaction, while it has the advantage of not giving rise to undesirable consequences. In performing the conjunctival reaction cases of conjunctivitis were encountered often lasting two weeks, while the patients were never annoyed in any way by the inunction. The preparation used for the latter purpose was a fifty per cent. ointment of old tuberculin in lanolin.

Blood Platelets, the Coagulation of Blood, and Rigor Mortis.—Bürker has continued on muscle the investigations previously conducted by him on the clotting of the blood. As the result of these, it appears that the coagulation of blood is dependent on the disintegration of the blood platelets, and that chemical substances of various sorts influence the process of coagulation in the same way as they do the disintegration of these structures. The behavior of the leucocytes and red cells seems to be without importance. Experiments on the isolated sartorius muscles of frogs show that substances which inhibited the disintegration of the platelets, and showed coagulation, also stimulated muscle, and caused it to contract. Muscles treated in this way remained more or less translucent, whereas control muscles became opaque and whitish. Muscles prepared in the former way stayed translucent when placed in alcohol or formalin, a fact of significance as regards the fixation of specimens. It also appears that the salts of calcium are of importance both in blood coagulation and in that of muscle.

Suicide in Italy.—The latest statistics on suicides in Italy show that the number in 1887 was 1,449, in 1903 it was 1,922 and in 1904 it was 2,156. Of these 2,156 the males numbered 1,705 and the females 451. Firearms were the most frequent means of suicide, the deaths by that method numbering 522. Of the other suicides, 433 were by drowning, 388 by hanging, 213 by precipitation from heights, 188 by poison, 98 by asphyxiation, 68 by cutting instruments and 62 by crushing under vehicles.

Book Reviews.

THE COMMONER DISEASES OF THE EYE. How to Detect and How to Treat Them. For Students of Medicine. With 280 illustrations (many original) and eight colored plates. By CASEY A. WOOD, M.D., C.M., D.C.L., Professor of Ophthalmology, Northwestern University; Ophthalmic Surgeon to St. Luke's Hospital and Wesley Hospital, Chicago; Consulting Ophthalmologist to Cook County Hospital and Passavant Memorial Hospital; ex-Chairman of the Ophthalmic Section, American Medical Association; formerly President of the American Academy of Medicine and of the American Academy of Ophthalmology and Otology, Mitgleid der Ophthalmologischen Gesellschaft, etc., and THOMAS A. WOODRUFF, M.D., C.M., L.R.C.P. (Lond.), Ophthalmic Surgeon, St. Luke's Hospital and St. Anthony de Padua Hospital, Chicago; Member Ophthalmic Section, American Medical Association; Fellow of the American Academy of Medicine; Fellow of the American Academy of Ophthalmology and Oto-Laryngology, Mitglied der Ophthalmologischen Gesellschaft, etc. Third edition, enlarged and improved, with index. Chicago: W. T. Keener & Co., 1907.

THIS is the third edition of this work, somewhat enlarged and well illustrated, to which two entirely new chapters have been added. The first hundred pages are devoted to the anatomy of the orbit and eyeball. Then follows a chapter of thirty-four pages on "Methods of Examination of the Eye." The optical features of the eye are then considered, after which the diseases of the eye in their logical sequence are described and treatment is given. Chapters are devoted to "Ophthalmology in General Medicine and Surgery," and to "The Ocular Complications of Certain Systemic Diseases," "Headache from Eye-strain," and "The Commoner Diseases of the Eye Muscles" are each accorded a chapter. A feature somewhat unusual in books of this kind is a chapter on the relation of nasal and neighboring cavities to diseases of the eyes. A chapter on remedies in ophthalmic practice completes the work.

The subject is presented in a brief, succinct manner, well adapted to the uses of the student and general practitioner.

STUDIES FROM THE DEPARTMENT OF NEUROLOGY of Cornell University Medical College. Vol. II. New York City, 1907.

PROFESSOR DANA deserves much credit for inaugurating the custom at the Cornell Medical College of reproducing in one volume the noteworthy writings of members of his department during the year. This second volume comprises fourteen clinical and pathological studies, six of which are by Dr. Dana, who also outlines in the introduction, the organization, methods, and work of the department.

INSTRUCTION POUR LE TRAITEMENT PAR L'HYPERÉMIE du Dr. SCHMIEDEN, chirurgien en chef de la Clinique de l'Université de Bonn, traduit par Mme. FORTOUL. Préface de M. le Professeur agrége TUFFIER Paris: Vigot Frères, 1907.

THIS little brochure contains a very brief and very practical set of instructions as to the use of Bier's methods of hyperemia. The various procedures are described in sufficient detail to enable any practitioner to apply them with the aid of a few illustrations which have been inserted in the text. The indications for the use of the method are also briefly explained.

DIE IMPOTENZ DES MANNES. Von Dr. ORLOWSKI, Spezialarzt in Berlin. Würzburg: A. Stuber, 1907.

IN this pamphlet of 78 pages the author summarizes in a very practical way the causes, pathology, symptoms and treatment of impotence. He lays particular stress upon the etiological significance of an hypertrophy of the verumontanum, which he treats by applications of silver nitrate through the endoscope.

FUNCTIONAL NERVOUS DISORDERS IN CHILDHOOD. By LEONARD G. GUTHRIE, M.A., M.D., F.R.C.P., Senior Physician at Paddington Green Children's Hospital; Physician to the Hospital for Epilepsy and Paralysis, Maida Vale. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1907.

THE book comprises chiefly lectures and addresses, some of which have appeared in the *Clinical Journal*, and in Allbutt's "System of Medicine." The author modestly disclaims all pretensions to scientific treatment of the subject, and states that his object has been in the line of preventive medicine, to lessen the prevalence of neurasthenia in the rising generation by emphasizing the truism that the neurotic child is the father of the neurasthenic adult. In the introductory chapters he describes the necessity of acquiring a knowledge of the personality, ancestry, and environment of the child, and describes at length the neurotic or emotional temperament, which, he says, is a matter of inheritance, and manifests itself largely by a nervous instability peculiar to the individual, and shown in disorders of coordination, defective control of higher over lower centers, etc. The author considers most functional neuroses to be of psychical origin. His chapters on hypersensitiveness of the special senses, morbid fears, the disorders of sleep, moral failings, and mental and educational overstrain, are all interesting and suggestive and sprinkled with illustrative examples. Some of the remaining subjects treated are: "The Disorders of Dentition," "Spasmodic Affections," "Chorea," "Tics," "Delayed Walking," "Hysterical and Functional Paralysis," "Defects of Speech," and "Idioglossia." The book is entertainingly written and contains much to enhance the physician's knowledge of childhood, and should enable him to treat understandingly many of the functional disorders of children which were left almost entirely, until recent years, to the disciplinarian.

INTRODUCTION À LA THÉRAPEUTIQUE NATURISTE par les Agents Physiques et Dietetiques. Par le Dr. Fernand SANDOZ. Paris: Steinheil, 1907.

IN this thesis which constitutes a volume of 260 octavo pages, Sandoz reviews the various "natural" systems of therapeutics. In an introductory section he deals with the fundamental principles which should guide the physician who aims to cure by "natural" methods, *i. e.*, through the agency of physical and dietetic factors. Next the "natural" therapeutics of some acute diseases, typhoid, influenza, scarlatina, appendicitis, rheumatism, etc., are considered. The main portion of the book is, however, devoted to the "natural" treatment of chronic diseases. Here are considered in turn the systems of Priessnitz and of Kneipp (hydrotherapy), the "air cure" of Rikli, the dry diet cure of Schroth, the methods of cure by vegetarian diets, by means of curdled milk, by Bier's method, etc. Schroth's system seems to be the author's favorite, as he devotes much space to it and goes into a great deal of detail concerning its technique, its action, and its results. The author is a pupil of Bouchard, who asserts that in chronic diseases it is necessary to accelerate nutritive processes. This Schroth's cure does to the author's satisfaction. The views are opposed by von Noorden and his school, who deny that in chronic diseases, *e.g.* in gout, there is a slower rate of nutrition. Dr. Sandoz predicts a great future for "natural" therapeutics and asks that these methods be taken out of the hands of quacks and applied scientifically.

DIE EXPERIMENTELLE DIAGNOSTIK, SERUMTHERAPIE, UND PROPHYLAXE DER INFEKTIONSKRANKHEITEN. Von Stabsarzt Prof. Dr. E. MARX. Zweite Auflage, mit zwei lithographischen Tafeln. Berlin: August Hirschwald, 1907.

PROF. MARX has compiled in a small-sized volume all the important data of experimental diagnostic, sero-therapeutic, and prophylactic methods that are at present either in general use or about to be adopted. The book is intended specially for health officers and for military surgeons, who desire a short practical treatise on these subjects. He begins each disease with a discussion of the leading facts concerning the specific germ thereof, *i.e.* date of discovery, cultural and morphological characters, etc. Then he considers the sero-diagnostic and sero-therapeutic methods thus far developed for each disease, and finally speaks briefly of the prophylactic measures. Exact information is given as to the technique and the sanitary officer with the army in the field, etc., will find a useful guide in this book when he comes to deal with an epidemic. The book is up to date, save that it contains but brief references to opsonins. It is to be regretted that the work is not illustrated.

A HANDBOOK OF SKIN DISEASES AND THEIR TREATMENT. By ARTHUR WHITFIELD, M.D. (Lond.), F.R.C.P., Professor of Dermatology at King's College, etc. New York: Longmans, Green & Co., 1907.

WHITFIELD'S book is a short manual on dermatology intended for students and practitioners. Much attention has been therefore paid to the clinical descriptions and the methods of treatment of the most common skin diseases. For the first time in a text-book of this kind there has been incorporated some material derived from the investigations of Sir A. E. Wright, which are applicable to the diagnosis and treatment of skin diseases. Some attention is also paid to the microscopic diagnosis of parasitic and bacterial skin affections, simple methods of examination being described in the appendix. Nothing is said, however, of the methods of staining and searching for the spirochæta of syphilis.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 20, 1908.

DR. ABRAHAM JACOBI, CHAIRMAN PRO TEM.

THIS meeting was held under the auspices of the Section on Neurology and Psychiatry, one of the newly formed sections.

The Development of the Modern Care and Treatment of the Insane, as Illustrated by the State Hospital System of New York.—Dr. CARLOS F. MACDONALD read this paper. He said that at the present time there were in the State of New York fifteen State hospitals for the insane (thirteen for the ordinary insane and two for insane criminals), and twenty-three licensed private institutions for the insane. The whole number of committed insane in the public and private hospitals of the State of New York at the end of the fiscal year, September 30, 1906, was 28,302 (13,548 men and 14,754 women). The whole number of insane in the State hospitals, including two hospitals for insane criminals (960), on September 30, 1906, was 27,317. The whole number of insane in licensed private institutions was 985. The net increase for the year in all institutions was 895; in the State hospitals the net increase was 896. The number of resident medical and other officers in State hospitals was about 150, and of attendants, nurses, and other subordinate employees, 5,000. The cost of the State hospitals, for lands, buildings, equipments and furniture, represented a permanent investment of more than $26,000,000, while the average annual expenditure for their maintenance, exclusive of cost of repairs, renewals and enlargements, was about $5,000,000. The average weekly per capita cost of maintenance for the fiscal year was $3.53. Prior to the establishment of the State Lunatic Asylum at Utica the insane poor were mostly cared for in county and town poorhouses or in jails, there being substantially no other provision for them. Provision was made in the original charter of the Utica Asylum whereby patients who failed to recover after a certain period of time, or who should be pronounced incurable, might be removed to a county poorhouse upon the superintendent's certificate that the patient was "incurable" or "not likely to be benefited by further treatment, and could probably be made comfortable in the poorhouse." This was a most inhumane provision, and one that continued in operation under certain modifications until the creation of the State Commission in Lunacy in 1889, and the subsequent passage of the State Care Act in 1890. This pernicious system continued for a period of more than forty years, during which time the poorhouses became filled to overflowing with mentally afflicted human beings, who were accorded only the merest pretence of custodial care and maintained in a spirit of parsimony whose chief apparent ambition was to see on how small a pittance body and soul could be kept together. The insane were pauperized in the matter of food, clothing, shelter, and environment, as well as of proper medical care and treatment. The condition of the insane in the State of New York at that time was best described by the terms, misery, degradation, squalor, wretchedness, and neglect. He cursorily outlined the legislation for the insane in the State of New York since the creation of the Commission in Lunacy in 1889, and said that among the more important improvements as regards methods and conditions which had accrued to the institutions for the insane and their government, under the new order of things, might be mentioned the following: 1. A codification of the laws of the State relative to the insane into one comprehensive statute, known as the "insanity law." 2. A complete registration in the office of the commission of all qualified examiners in lunacy. 3. A complete registration in the office of the commission of all persons committed to institutions for the insane, both public and private. This registration already embraced about 75,000 cases of insanity, from which valuable deductions and comparisons might be made. 4. Provision for the transfer by order of the commission patients from one institution to another without recommitment. 5. The removal of patients from their homes or elsewhere by trained attendants sent from the hospitals. 6. Removal of the legal distinction between acute and chronic insanity, by designating the State institutions for the insane as "hospitals" instead of "asylums," and organizing them upon a curative basis, thus inculcating the hospital idea. 7. A regulation regarding the correspondence of the insane, which provided that any patient who desired to do so might write at least once in two weeks. Letters addressed to the Governor of the State, the Lunacy Commission, judges, or any official having jurisdiction in lunacy cases, must be forwarded unopened. 8. Provision for paroling patients, under certain conditions, for a period of thirty days, during which they might return to the hospital without recommitment. 9. A regulation requiring that patients on admission to a hospital shall be informed of the nature of the institution and of the fact that they were detained under legal commitment. 10. Affording all patients the legal right of a hearing by the visiting commissioners, apart from any officer of the hospital. 11. A rule restricting the issuing of licenses to conduct private institutions for the insane to reputable physicians of at least five years' experience in the care and treatment of the insane. 12. Provision for the clinical teaching of insanity in the State hospitals by admitting to the wards thereof under proper restrictions students of medical colleges situated in the vicinity, as well as practising physicians who might desire the opportunity of studying mental diseases clinically. 13. Provision for the appointment of medical internes in each of the State hospitals at a salary of $600 per annum, in addition to the regular medical staff. 14. A regulation requiring competitive civil service examinations for appointment of resident officers in State hospitals. 15. A material increase in the average rates of salaries and wages of all grades of service, also an increase in the ratio of medical officers, nurses, and attendants to patients, including a woman physician, on the staff of each hospital. 16. The establishment of training schools for nurses in all of the hospitals. The adoption by the hospitals of a uniform dress for nurses' and attendants' wear. The introduction of women nurses in the men's wards, such nurses to be paid the same wages as men. Also a material extension of accommodations for nurses in detached buildings, or nurses' homes, and the employment of a corps of night nurses. 17. The appointment of consulting boards for the hospitals. 18. Provision for the employment of dentists; also for examinations by eye specialists. 19. An annual allowance to each hospital for the purchase of medical books, journals, etc. 20. The employment of a chef in each hospital, in addition to the ordinary corps of cooks. 21. The adoption of a schedule of food supplies, including a per diem ration allowance of each article. 22. A marked improvement in the methods of bathing, by the introduction of "rain" or "spray" baths and other hydrotherapy. 23. A requirement that, so far as might be deemed feasible, the hospitals should enter into joint contracts for the purchase of staple articles of supply through competitive bids. 24. The abolition of mechanical restraints in all the hospitals and the substitution therefor of useful occupations, diversions, and amusements of various kinds. This was the first instance in the United States of the absolute abolition of mechanical restraint in a public institution for the insane. To-day it was difficult for those who were unfamiliar with the subject to realize that the old conditions had entirely disappeared under modern methods of care and treatment. 25. The introduction of tent life for the care of tuberculous patients in 1901 by the late Dr. A. E.

Macdonald. 26. The systematic employment of patients at useful occupations, such as farm and garden work, in the various repair shops, bakeries, kitchens, laundries, etc. 27. The establishment of a Pathological Institute. The Institute was divided into departments and the gentlemen in charge were designated associates in their respective branches, the whole being under a director. 28. The establishment of a system of after-care of the insane to prevent relapses. The progress and present status of the New York State hospital system might be regarded as a continuation, if not the full fruition, of the great reform movement in behalf of the insane, inaugurated more than a century ago, by Pinel in France, by Tuke in England, by Jacobi in Germany, and Rush in the United States. This splendid system was a living monument to unselfish effort for humanity and science. The principle of State care was founded on a broad basis of science and humanity, when intelligently applied, as it was in the State of New York to-day.

Dr. Wm. Mabon, superintendent of the Manhattan State Hospital, opened the discussion. As the result of the institute work, uniform methods of clinical study and laboratory research were adopted, and it seemed desirable to report the method of clinical study and case recording in the New York State hospital system. The methods now used at the Manhattan State Hospital represented those in use in other State hospitals. The Manhattan State Hospital was divided into two divisions, one for women, the other for men, and in each division there was a reception service to which patients were admitted when they came to the hospital. In each reception service there was a staff of four or five physicians working under the direction of a second assistant physician. For a time the physician made physical examinations only, after which he was given cases in which to work out the mental symptoms as well. The following classification had been formulated by Dr. Meyer, the director of the Pathological Institute: Brain tumor, traumatic psychoses, psychoses accompanying other nervous diseases, senile psychoses, general paralysis, alcoholic psychoses (perhaps with subdivisions into types), morphinism, cocainism, etc., infective-exhaustive psychoses (delirium types), allied disorders, depressions not sufficiently distinguished, symptomatic melancholia, depressive hallucinations, involution melancholia, allied disorders, paranoiac conditions, dementia præcox, allied disorders, manic depressive psychoses (first, second, third, fourth, etc., attack), allied disorders, constitutional inferiority, hysterical insanity, epileptic insanity, imbecility and idiocy, not classified. Staff meetings were held in the two divisions each week day morning, and the members of the staff were given the opportunity to express an opinion as to the advisability of discharge, etc. In addition to the regular week-day staff meetings, a staff meeting was usually held on the third Tuesday evening of each month, at which cases were presented and original papers discussed. Recently considerable attention had been given to the prolonged bath treatment of cases of insanity, a treatment that was inaugurated by Dr. Dent. This treatment increased the excretions from the skin, kidneys, and bowels, increased the appetite, and had largely taken the place of sedatives. The patients remained in the tub from a few hours to several weeks if necessary.

Dr. Frederick Peterson, ex-president of the New York State Commission in Lunacy, called attention to what they had not done for the insane. A book might be filled with praise for what had been accomplished, but they might also fill a book with criticisms on conditions as they were. What were they doing in the way of prophylaxis? It had been estimated that nearly 20 per cent. of the insane under State care owed their insanity to alcohol, a preventable cause. That meant nearly 6,000 patients in this State in round numbers, and it meant an annual loss to the State through alcoholic insanity of about $2,400,000. There still existed among the people an ancient legacy of feeling about an asylum, and they passed it as they did a prison or a cemetery with a mixed dread and mistrust. Out of this they should be educated. They must learn that insanity was an illness, a preventable and a curable one. The period of detention in general hospitals or psychopathic hospitals should be at least ten days instead of five, and without any magistrate's or judge's order whatever. This was purely a medical and not a legal matter. It was a question for the Board of Health to regulate, not the courts. It should fall altogether under the rules of quarantine. An insane person was sick. The Lunacy Commission reported overcrowding every year, and the responsibility for this rested with the Legislature. Only one new hospital for the insane had been built in eighteen years. In the report of the Lunacy Commission for October 1, 1906, the excess of patients in the hospitals over the estimated capacity was 1,812; even though the 1,812 excess was not there, there would still be overcrowding. There should be money appropriated for the construction of new asylums. Some 16 to 17 per cent. of the admissions were of people between 60 and 100 years old, and a considerable proportion of them were not insane. They were physiologically senile or dotards. Besides being overcrowded, the State hospitals were inadequately supplied with physicians. The proportion should be at least one physician to 150 patients. The number of nurses and attendants was also inadequate. There was a form of psychotherapy that was far from sufficiently developed; patients should be occupied in various exercises and occupations. In 50 per cent. of the twenty-three institutions of a private nature, the standard of care was scarcely equal to that of the State Hospitals. There was not the same painstaking, scientific study of the cases; there was not the same ambition to excel and progress, and no systematic occupation of patients. Within two or three years, chiefly through the efforts of Miss Louise Schuyler of the State Charities Aid Association, an after-care association had been formed. This work should be extended to all parts of the State, and it should include among its functions fore-care or prophylaxis as well as after-care.

Dr. Chas. W. Pilgrim, President of the State Commission in Lunacy, said that he would bear witness to the great changes that had taken place in the care of the insane since the organization of this commission in lunacy. One who had been in the service for twenty years certainly could appreciate the changes that had taken place, and how important they were. The Commission in Lunacy had had many obstacles to overcome, and the first commission had succeeded, due to the personnel of that commission. So soon as the import of the first document was recognized the passage of the State Care Act, the removal of the insane became assured, but the present system was by no mean absolutely perfect. The passage of this act had been brought about by the efforts of the State Charities Aid Association, the work of which was supplemented by the Commission in Lunacy. He believed that when the history of the insane in the State of New York had been written, two names would appear very prominently, those of Dr. Carlos F. MacDonald, and the Hon. Goodwin Brown.

Dr. Albert Warren Ferris continued the discussion. By order of the New York State Commission in Lunacy, licensed private houses for the care and treatment of the insane were allowed to receive voluntary cases, as well as those committed under the insanity law. In 1788 there was placed upon the statute books of this State "An Act for Apprehending or Punishing Disorderly Persons," which gave authority to two or more justices of the peace to apprehend and lock up dangerous insane persons in some secure place, who, if such justices should find it necessary, should be there chained. In 1873 Dr. John Ordronaux was appointed Commissioner in Lunacy to fill a newly created office. No actual ruling as to voluntary patients

seemed to have been made till November, 1891, when the new Commission, headed by Dr. McDonald, formulated a special document. Dr. Ferris called attention to Section 445 of the Penal Code, under the title, "Maintaining Private Insane Asylums," and to Section 47 of the insanity law, and the amended chapter 497, laws of 1905. There seemed to be a desire among a certain class of physicians to place patients quietly and secretly in the custody of even unskilled and improper persons, that they might keep such patients in their hands for a longer period than they would otherwise be able to do, and thus secure an additional income from such sources. Instances occurred in which insane patients, who were improperly placed in hotels without proper watchful supervision, and perhaps after a mistake in diagnosis, had committed suicide. The question as to when a patient was properly a voluntary patient was a vexed one. A properly voluntary patient, he believed to be one who understood to some extent his psychosis, in so far as to know that he was ill, and also understood that the house to which he was taken was for the treatment of ill people and was willing to stay. All possible facilities should be afforded to voluntary patients who sought treatment in order to prevent their drifting into graver forms of mental disturbance. There seemed to be but one way to safeguard the insane and to foil the attempts of the unscrupulous. All insane cases of any degree should be notified. The insanity law did not contain such a provision, but it would seem that legislation to this end was desirable. Psychiatry was still in its infancy. The best methods of treatment for the insane were not yet known. The efforts that were now being made to prevent insanity by studying conditions, food, occupations, education, environment, and ancestry, etc., would lead to the saving of many valuable lives not only, but also to the restoration at an early day of hundreds of mentally shattered individuals to their position in the community as self-supporting or, at least, partially self-supporting citizens, to enjoy life, liberty, and the pursuit of happiness.

The Hon. Mr. Goodwin Brown compared the hospital system of to-day with what it was years ago. In 1899 the world of the insane was in chaos, was void, and without form. It was a fortunate thing in this world that every crisis had brought forth the man most needed to correct the evils. For a period of perhaps fifty years the insane lived to be cured by chance, or were treated practically as criminals. In 1836 this State, and other States, made efforts in a public way to alleviate the condition of these unfortunates. But these efforts were made piecemeal, and all through that period slow steps were taken; there was no formulated action. Consequently, in 1889 the care of the insane was a haphazard affair, and culminated in the creation of the State Commission in Lunacy. In all great crises the man was brought forth that was most needed. When this Commission was formed Dr. MacDonald was called at the head. If they had searched for the one man fitted for the work, they could not have found one better than the one selected. The State of New York owed a debt of gratitude to this man which could hardly be paid.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held March 17, 1908.

Dr. Onslow A. Gordon in the Chair.

The Problem of the Female Pelvis and What Can Pass Through It.—Dr. John O. Polak of Brooklyn read this paper. He said that there was no branch of medicine that had received less painstaking and conscientious attention from the general practitioner than the science of obstetrics. It was a fact that most operative cases in the gynecological service of a hospital were the result of unclean or neglectful methods on the part of the original obstetric attendant. They were an indication of lax asepsis or a forgetfulness of the responsibility on the part of the physician to repair all lacerations of the pelvic floor. As an excuse, it was frequently argued that the general practitioner was not sufficiently paid for his obstetric work, and that he could not devote the time necessary for the strict ante- and postpartum care of his patients. This did not, however, absolve the practitioner from his responsibility. It was significant that many women got well in spite of inefficient and neglectful midwifery. Moreover, there was a general tendency to ignore the responsibility which the practitioner owes to the unborn child. This responsibility was frequently violated by a general attitude of procrastination. He who did not hesitate to call in skilled surgical counsel and aid in the presence of a perforation in typhoid fever, was often ready to do a version or a high-forceps operation, alone, and even without the aid of an anesthetic. It was important that the physician should recognize readily the signs of an impending rupture of the uterus. In the presence of great difficulties preventing normal delivery of the patient, operative obstetrics, in skilled hands, offered a safe outcome. A cesarean section was no more dangerous than an operation for appendicitis. Podalic version, with the cervix dilated and the membranes ruptured, was a simple operation. It was important that the general practitioner should be able to recognize the signals that were the forerunners of dystocia. It was futile to rely on the principle that labor was a natural process. Intermarriage, civilization, and the demands of social life, had made childbirth an exceedingly difficult process with many women. In considering the question as to whether his patient was able to deliver herself unaided or not, the physician had to note the size of her pelvis, the size of the fetal head, and its ability to mould, the character of the labor pains, and the condition of the soft parts. He had to apply the methods of cephalometry and pelvimetry. It was a fact that a generally contracted pelvis was found in 2 per cent. of American-born women, and in 6 per cent. of the foreign class. In the multipara the history of previous difficult labors was suggestive of the possibility of the presence of a contracted pelvis. In a primipara the presence of a pendulous abdomen suggested a disproportion between the fetal presenting parts and the pelvis. The speaker discussed the various methods of pelvimetry and the abnormal measurements of the pelvis with the indications for interference. A normal pelvis could offer an insuperable obstruction if the head was large. If, in a primipara, the head was not engaged after the full dilatation of the cervix, then something was wrong. The practitioner's duty was to make a diagnosis of the difficulty by exclusion. It was important to examine every patient at least one month before labor; in fact, the better class of patients expected this. If any abnormality in the pelvic measurements was discovered, then the question of elective intervention arose. The practitioner was not to look upon a tedious labor with indifference. When the patient had a rise of pulse to 120 or more, a rise of temperature, edema, and thickening of the cervical ring; if the fetal heart was weak, and if meconium passed down alongside of the head; if the presenting part did not engage at the end of the first stage of labor, then it was time to think of interference. It was no credit to modern midwifery that the fetal mortality in operations requiring intrapelvic manipulation was 60 per cent. This could certainly be diminished greatly by the timely performance of cesarean section. The question of what form of intervention was best was decided by circumstances. It depended on when the patient was first seen, whether early or late, on the condition of the mother, and on the condition of the fetus. Induction of labor, if properly done, was an operation attended by little danger. If a patient was seen for the first time during labor, and a contracted pelvis was recognized, then the patient could

be given the "test of labor." During this there were to be noted the character of the pains, the moulding of the fetal head, the condition of the pulse, the height of the contraction ring, and the condition of the child's heart. If the head did not engage, the speaker advised a method of fitting the head to the pelvis by means of a modification of Müller's method. In the presence of dystocia, with a dead or dying child, an exhausted mother, and impending rupture of the uterus, then perforation of the child's head and section of the clavicle were to be considered.

Dr. Charles Jewett of Brooklyn said that many of the fatalities of the lying-in room would have been avoided if the patient had been examined at least one month before her delivery. Most practitioners were so busy that they could not take the time to practice pelvimetry and cephalometry. The speaker had endeavored to simplify the method of external pelvimetry. He believed in version more than did the reader of the paper.

Dr. Robert L. Dickinson of Brooklyn said that the primipara was to be considered guilty of a narrow pelvis until proved innocent. There was a general failure to recognize occipitoposterior positions. He alluded to the fact that the current obstetric fees were not sufficient to repay the physician for the amount and the character of the work demanded of him by modern midwifery.

The Early Diastolic Heart Sound.—Dr. William S. Thayer of Johns Hopkins University, Baltimore, Md., read this paper. He said that if the hand was placed upon the chest in the region of the cardiac apex, in young individuals whose chest-wall was not too thick, it was possible to feel a distinct, although slight, shock, independent of and following the cardiac impulse. In such persons, on auscultation, there was heard, in addition to the two usually recognized heart sounds, a third sound, occurring shortly after the second sound, and heard during the period of diastole. The third sound had the character of a dull and distant thud, occurring very shortly after the second sound and just before the cardiac pause. On palpation the accompanying shock was just perceptible to the hand. On palpation of the cardiac region there could be recognized, first, the systolic impact, second, the shock caused by the closure of the semilunar valves, and third, the impulse occurring with the beginning of the ventricular relaxation. Within the past four months, the speaker had seen twenty-four cases in which the early diastolic sound was present. It was noted in individuals who had every appearance of being normal: their pulse-rate was 60 to 80, their blood-pressure rather low than high. In some patients it was heard in the back; in all, its maximum intensity was at the apex. The third sound was associated with the shock at its point of maximum intensity. This sound was audible not only in the human heart, but also in that of the dog. In the latter, examination of the heart postmortem did not reveal any pathological cause for the sound. The explanation of the phenomenon was not clear. Examination of cardiograms and phethysmograms revealed that the third sound was coincident with the slight rise occurring in the early part of the diastolic curve, and with the shoulder of the jugular venous curve. It had been suggested that the third sound was a muscular sound, caused by an active muscular diastole. There was no evidence that this was the case. The exact time relation of the third sound to the other sounds had not yet been worked out. The third sound was also heard in various pathological conditions of the heart, as in aortic regurgitation and in mitral stenosis. The speaker's theory of the cause of the early diastolic heart sound was as follows: At the end of the ventricular contraction, with the first rush of blood into the ventricles from the auricles, during diastole, the impact of the blood against the upper surface of the flaps of the auriculoventricular valves set them in vibration. It was this vibration, the speaker said, that accounted for the third sound.

THE WILLIAMSBURG MEDICAL SOCIETY.

Stated Meeting held Feb. 10, 1908.

Dr. Leon Louria in the Chair.

X-ray Diagnosis in General Practice.— Dr. Charles Eastmond of Brooklyn read this paper. He said that the practice of medicine was summed up in two words, diagnosis and treatment. In looking over the history of medicine, in noting its advances, and comparing the crude and inexact methods of our forefathers with the scientific and painstaking care exerted to-day, it had to be admitted that medicine was becoming more and more an exact science. Diagnosis was fundamental to all rational therapeusis. The Roentgen ray was one of the newer methods of diagnosis that had withstood the test of time. When Roentgen first announced his discovery twelve years ago many wild prophesies had been made. Some were fulfilled and some were not. With improved apparatus and technic it was now possible to discover lesions in the *x*-ray plate that formerly were not discernible. There were many pathological lesions that remained more or less obscure after the most careful clinical history and examination, and it was to the *x*-ray representation of these that the speaker particularly directed the attention of his audience. He presented remarkably fine skiagraphic illustrations of the topics discussed. It was not necessary to dwell long on fractures, dislocations and the location of foreign bodies, as physicians and the laity were familiar with skiagraphs of these conditions and appreciated their value, especially in injuries involving the joints. It was often just as important to have a plate after the reduction of the fracture or dislocation as for diagnosis, not only for the welfare of the patient, but also for the protection of the surgeon. In cases of fractures, for diagnostic purposes it was necessary to make the examination as early as possible in order that reduction might be accomplished before extensive callus formation. After reduction and immobilization of the parts, if there was any question as to the outcome, the *x*-ray examination could be made through the dressings. This involved no disturbance of the parts, but if further manipulation was necessary this could be done, using the plate as a guide. In the diagnosis of renal, ureteral and vesical calculi, the *x*-ray, in competent hands, afforded a most valuable aid. The advantage of this method over others was that it enabled one to determine the exact location of the calculus, and also for operative purposes, the number and size of the stones. No difficulty arose when there were distinct symptoms of calculus and when this was found on operation. But at times there were symptoms simulating those of stone, but on operation none was found. This was an experience of most surgeons. A carefully taken and interpreted *x*-ray plate enabled one to make a negative as well as a positive diagnosis, and the percentage of error was probably less than that of any other known means. From the fact that the situation of the symptoms and the position of the calculus did not always agree, and also that calculi were formed where least expected, an examination of the whole urinary tract was necessary. Frequently with symptoms on one side, the cause was found on the other, and additional calculi were at times found far from the apparent seat of the disease. More than one case had been seen in which a stone had been found not only in the suspected region, but others in the other kidney, in one of the ureters, or in the bladder, the second calculus giving rise to no symptoms. By taking a series of five plates, one of each renal, each ureteral and the pelvic region, it was difficult for any calculus of size to escape detection; if it did, the fault was with the operator and not with the method. The skiagraph was only a shadow picture that presented a contrast of densities in the parts examined, and errors of interpretation of the plate occurred. A mass of fibrous tissue external to the pelvis of the kidney

sometimes gave the appearance, on the plate, of a soft phosphatic mass in the pelvis of the kidney. This illustrated a possible source of error and one that was hard to overcome. Similar mistakes occurred in cases of old abscesses that had discharged and contracted down to scar tissue, unless great care was taken. In plates of the lower end of the ureters and of the bladder, a difficulty of interpretation encountered was the occasional presence of small shadows in the region of the lower ends of the ureters. Whether these were phleboliths or deposits in the muscles or ligaments of the pelvis could not be stated with certainty, but as a rule little difficulty was experienced in differentiating them from calculi in the ureters. Another problem in abdominal diagnosis was the determination of the size, position, and motility of the stomach, especially where gastropsia was suspected. This was carried out according to the methods of Holzknecht and Hulst. By giving a meal containing bismuth and then taking a skiagraph with the patient in the upright position, a distinct shadow of the stomach was obtained in its relation to other parts of the abdomen; another with the patient in the horizontal position determined its size. A subsequent examination some hours later made possible the estimation of stomach activity, and if desired, the bismuth mass could be followed throughout the intestinal tract, affording information of any part desired. When the examination was to be of the lower end of the tract, the bismuth could be introduced through a rectal tube. The orthodiagraph was nothing more than a modified fluoroscope on a large scale. By this the stomach outline could be seen, and, far more important, the waves of the stomach watched. Not since the time of Beaumont, who performed the classic experiments on Alexis St. Martin in 1822, had the opportunity arisen for such scientific observations of the behavior of food within the stomach as was observed by the orthodiagraph. The exact status of gallstone diagnosis by means of the *x*-ray had not as yet been absolutely ascertained. Numerous observers had demonstrated them at times, but they had also been missed, to be found later at operation. The difficulty of diagnosis was apparent when one considered the anatomical relations of the gallbladder, and the fact that the calculi were composed largely of cholesterin which obstructed the rays to a very slight degree. When the biliary calculi were large enough and when they contained sufficient lime salts, they would appear in the skiagraphic plate. In pulmonary tuberculosis not only could the early diagnosis be made by means of the *x*-ray, but the full extent of the lesions could be accurately determined, and exposures at intervals could enable one to ascertain whether the process was active or not. It was now possible to make the diagnosis long before consolidation had taken place, for in many cases there was found to be a thickness or infiltration of the lung tissue without discernible physical signs, and on the other hand, there were cases with pronounced physical signs that did not show the amount of tissue involvement that one would be led to suppose. Many patients were encountered who were termed tuberculous but were without physical signs in the chest. In such cases an *x*-ray plate made possible the earliest positive diagnosis, and on the other hand, definite information as to the extent of the lesion could be obtained before a patient was condemned to leave his home and business for a change of climate. The following conditions in the chest were readily recognizable in the skiagraphic plate: Pleurisy with effusion, empyema, abscess of the lung, deviations and compression of the trachea in goiter, aneurysms of the aorta, and esophageal diverticula. In examination of the accessory sinuses of the head, the results had been very satisfactory. By this means the size and condition of the frontal and maxillary sinuses could be determined to an accurate degree and the presence of foreign or pathological material demonstrated. The subject of the *x*-ray diagnosis of bone diseases was a large one, and the speaker confined himself merely to an enumeration of some of the conditions met in general practice in which the *x*-ray plate was of service to the general practitioner in making the diagnosis. These were: 1. Conditions occurring about a joint, which might be tender and painful with or without swelling; simple, acute or chronic synovitis; inflammatory osteoarthritis; infective osteoarthritis or osteitis; hypertrophic or atrophic arthitis deformans, and epiphysitis. 2. Infected wounds, particularly of phalanges; simple cellulitis without bone involvement, and cellulitis with bone necrosis. 3. Painful tender areas, usually swollen and seen most commonly on an extremity, with or without a sinus; cellulitis without bone involvement; simple traumatic or inflammatory osteitis, and osteomyelitis. 4. Bone tumors: exostoses, benign and malignant sarcomata, and cysts. In all these cases, *x*-ray examination cleared up the diagnosis when there was but little pathological involvement of the bone, and in such cases as demanded operation served as a sure and certain guide to the surgeon as to the full extent of such involvement, thus often preventing unsatisfactory results and subsequent operations. The value of fluoroscopic examinations was lessened because few men were willing to expose themselves to the full range of the rays, as was necessary in such examinations, because of the physiological effects. In the second place, the use of the fluoroscope was unsatisfactory because of the inability to maintain for even a short time the proper relation between the tube, the part under examination, and the eyes of the examiner. In addition, the personal equation was a very strong factor, and such diagnosis rested entirely upon the word of a single individual with inability to produce any evidence of the honesty of his examination. In the lighter part of the body, the arm, leg, or neck, it was possible to determine the presence of foreign bodies, and often the existence of fractures; in the chest, obliteration of the costodiaphragmatic angle on deep inspiration (evidence of pulmonary disease), and the presence of aneurysms of the aorta. But it was difficult to estimate the exact position of foreign bodies in such a way, and the existence of fractures was not always apparent, as many that had not appeared on the fluoroscope appeared later on the skiagraphic plate. Dislocations were rarely discernible, and for examinations of the head, hip, shoulder, or abdomen the fluoroscope was absolutely useless, for the skiagraphic plate presented shadows not obtainable on the screen as interpreted by the human eye.

Stated Meeting, Held March 9, 1908.

Dr. Leon Louria in the Chair.

A Case of Aneurysm of the Abdominal Aorta.—Dr. Constant Schradieck presented this specimen.

Hyperemia as a Therapeutic Measure.—Dr Adolph Bonner read this paper. He said that the empirical use of massage, the various thermal agents, and the numerous counterirritants resorted to from remote antiquity, established the fact that hyperemia had long been employed as a therapeutic measure, for the efficacy of all these agents depended upon the hyperemia they produced. It was August Bier of Berlin and his many coworkers who had placed the therapeutic use of hyperemia upon a scientific basis, and had demonstrated that it was applicable in almost every field of medicine. The physiological activity of a normally quiescent organ was associated with hyperemia of that organ. On the other hand, inflammation was hyperemia called forth in reaction to disease. The only real difference between these two forms of hyperemia was their degree, and the fact that they were produced by different stimuli. The hyperemia accompanying disease was an evidence of nature's efforts to combat disease. Instead of seeking to diminish this hyperemia, it was frequently desirable to heighten its degree by various means. A wide experience in pathology enabled Rokitansky to establish as

a dictum that pulmonary tuberculosis rarely coexisted with engorgement of the lung, such as would arise from mitral insufficiency, and that anemia of the lungs predisposed them to tuberculosis. These facts suggested to Bier the applicability of therapeutic hyperemia in the treatment of tuberculous arthritis. The principle of "Stauungshyperämie" consisted in constricting the proximal side of the diseased area so as to compress the superficial veins only, thus impeding the return flow. This became evident through the prominence of the veins and the bluish tint of the skin to the distal side of the constricting band. The engorgement of the superficial and later the deeper veins, in turn impeded the arterial circulation, so that the arteries also became dilated in order to accommodate the extra quantity of blood pumped into them. Thus, arterial or active hyperemia was established in addition to venous hyperemia. The physical retardation of the circulation hindered the free and rapid entrance of the causative factors of the particular disease into the general circulation. This ameliorated the symptoms of systemic intoxication and accounted for the rapid decrease of temperature that often occurred shortly after the application of the bandage in the treatment of acute septic inflammation. The transudation of serum that occurred into the diseased area, physically diluted the toxins and thereby reduced the intensity of their action on the various tissues. This dilution also served to facilitate the gradual absorption and consequent excretion of these noxious materials. At the same time, the antibodies in the serum diminished the virulence of the toxins. The migration of leucocytes favored an increased phagocytosis. In addition, these leucocytes formed a membrane, walling off the disease area, limiting the spread of the disease by continuity, and depriving the bacteria of new culture media. With the completion of this walling-off process, destruction of the bacteria was effected by the action of the toxins. This served to explain the demonstrable fact that virulent pus in an abscess cavity might finally become absolutely sterile. Further resolution took place by the absorption of this fluid. The cavity was obliterated by the formation of fibrous tissue or the deposition of lime. The increased vascular pressure caused the liberation of a greater quantity of blood into the devitalized tissues, a factor that was unfavorable to the existence of bacteria. Within recent years the arterial or active hyperemia had been used in the treatment of acute and chronic conditions of nonbacterial origin, for example, traumatic lesions, acute articular rheumatism, where absorption was desired, neuralgias, etc. This form of hyperemia was induced by inserting the affected area into a properly adapted box into which previously heated air constantly entered. This caused an arterial engorgement of the area thus exposed. This promoted the reconstructive powers of the tissues and facilitated the rapid absorption of exudates. The terms reconstructive, analgesic, alterative, absorbent, antibactericidal, and antipyretic could be applied to describe the manner in which hyperemia was an efficient remedial agent. For the "Stauungshyperämie," all of the joints of the arm and leg, with the exception of the hips, were amenable to this form of treatment. On account of anatomical reasons, the hip was the exception. Though the affection might be in the smaller joints of the hand or in the wrist, the rubber bandage was applied above the elbow, as was done when the latter was under treatment for the reason that constriction of the veins was thereby more easily accomplished. The veins were more superficial in the upper arm, and the bandage retained its position more readily and also gave the patient free use of his forearm. For the same reasons, the bandage was best applied above the knee for lesions affecting the leg below it. The ordinary rubber bandage, two to three inches wide and five to six yards long, was applied to the proximal side of the diseased area, with a constriction just enough to compress the superficial veins only, so that the skin to the distal side of the bandage was bluish. The bandage was not to be applied too near the lesion, nor in such a manner as to give any increase in pain. It was important that the limb under treatment should never feel cold to the touch or appear white. In chronic affections it was sufficient that the bandage remained on for an hour in the morning and an hour in the evening. In acute inflammatory diseases it could remain for a period of eight to ten hours with an interval of a few hours' rest, and the bandage was again applied. In this wise, the bandage could be worn for from twenty to twenty-two hours out of twenty-four. The period of intermission depended upon whether any edema existed or not. The rule was not to reapply the bandages before the edema had subsided; this subsidence was facilitated by gentle massage. Whether the bandage was on for a long time or not, it was best to massage the area that was under pressure so as to avoid any atrophic changes. The speaker showed by means of charts the mode of applying the bandage to various regions. For affections of the testicles a form of compression could be applied at the penoscrotal junction. For affections of the head a rubber band could be applied at the root of the neck, the amount of constriction being such as not to interfere with the respiration or speaking. Pulmonary tuberculosis was markedly influenced by the use of Kuhn's suction mask. It was worthy of mention that when such treatment was directed to diseased joints, splinting was very rarely necessary excepting where there was a tendency to deformity or when slight passive motion increased pain. Passive and active motion were to be encouraged. Within the past few years various forms of apparatus had been devised on the principle of an exhaust chamber, into which the part to be treated was inserted, and the air exhausted by means of a pump which reduced the air pressure and so established hyperemia of the part included in the chamber. These devices were costly and better suited for hospital work. In the treatment of acute and chronic localized conditions of the soft parts, such as carbuncles, furuncles, small abscesses, chronic tuberculous ulcers, and anal fistulæ, there were employed suction cups made of various sizes and shapes to fit the particular area under treatment. The treatment by means of the hot air chamber was adapted for traumatic lesions, acute articular rheumatism, arthritis deformans, ankylosed joints, lumbago, and neuritis. The degree of heat was never to be uncomfortable to the patient, and the length of time of treatment was to be an hour twice daily, with precautions against burning the skin. It was to be borne in mind that the fingers and toes could not stand as high a degree of heat as other parts. The speaker, in conclusion, said that the length of time during which Bier's treatment has been used put it beyond the experimental stage. Its theory was based upon careful experimental study and scientific principles. It was efficient in restoring functional activity in a manner that could not be obtained by means of other forms of treatment. If the technic was properly carried out no untoward results were produced. It was frequently a successful substitute for operative interference. The accessories were easily purchased and were of nominal cost.

Dr. Willy Meyer of New York said that he had been interested in this method ever since 1893, when Bier first published his report. In 1894, he had shown before the orthopedic section of the Academy of Medicine cases of tuberculous joint disease cured by means of artificial hyperemia. One of the observations leading up to Bier's method was made long ago by a number of clinicians, including Rokitansky, namely, that patients suffering from stenosis of the mitral valve did not get tuberculosis, or else showed healed lesions of this disease. The hyperemia treated was first applied by means of hot water bags, and then by means of the Esmarch bandage. There was as yet no perfect English equivalent for the German expression "Stauungshyperämie." It might be termed obstructive hyperemia, but at no time was there to be a

stasis in the part. There was to be a continuous flow of blood. Unfortunately, there was as yet no means by which this method could be applied to the hip. Possibly, tuberculous disease of the hip could be reached by placing the entire lower extremity in hyperemia. The elastic garter around the neck was effective in producing hyperemia of the head. The suction flask was a potent means of producing hyperemia, so was that of the hot-air chamber, which was, however, an arterial hyperemia. Bier's treatment was not a panacea for all ills; it did not cure every case; it was only an addition to the therapeutic armamentarium. It was incumbent on every physician to become familiar with this method, for it ramified into every branch of medicine and surgery. It was used successfully in cases of tuberculous joint cases, in mastoiditis, in carbunculosis and furunculosis, in mastitis, felon, and osteomyelitis. In furuncle and carbuncle, the treatment required time, but was successful in limiting the size of the resulting scar. The speaker cited the case of a carbuncle on the back of the neck of a young lady, treated for forty-five minutes each day, for eight days, by means of the suction cup. This treatment usually either prevented suppuration, or else caused the production of a very small core. In mastitis, a treatment extending over six or seven weeks was successful in saving the appearance and function of the breast. Bier's treatment had four cardinal points: it was painless in application, it reduced pain, saved function and prevented scars. Where the physician was busy and had not the time nor assistance necessary to carry out Bier's treatment, it was better to stick to the old treatment. Bier's treatment required time. Wherever there was pus, this had to be evacuated. The speaker detailed the following cases, successfully treated: Acute phlegmon of hand, a large abscess of the inguinal region, which was first evacuated by means of a small incision and expression of the pus, and dacryocystitis. In rheumatism, the elastic bandage was successful in 50 per cent. of the cases. In gonorrheal rheumatism, the application of the bandage diminished pain in every instance. If this was the only successful instance of the application of Bier's treatment, the latter had certainly earned an important place in therapeutics. In acute cases of mastoiditis, the sooner the hyperemia treatment was applied the better. When the mastoid just began to be tender, the application of the simple elastic band about the neck was frequently effective. This treatment was also of value as a prophylaxis in cases of operative wounds of the surgeon's hands. There were very few hospitals in which Bier's treatment could be successfully carried out, owing to the lack of assistants. He prophesied that it would not be long ere the stepchild of medicine would become the favorite.

Physical Diagnosis of Cardiac Diseases.—Dr. C. F. Wainwright of Manhattan read this paper. There were three fundamental points in the physical diagnosis of the heart. First, it was necessary to acquire as much knowledge of the heart as possible by means of inspection and palpation. Second, it was necessary to study the normal heart. Third, it was necessary to study the heart murmurs, the laws of their conduction, and the areas of their maximum intensity. The observation of the heart had been grossly neglected by medical practitioners. There was no valvular lesion that was not associated with physical changes in one or more of the cavities of the heart. For instance, in mitral stenosis there was enlargement of the right ventricle. There were four pathological lesions that led to enlargement of the left ventricle; they were: exophthalmic goiter, arteriosclerosis, mitral insufficiency, and aortic stenosis. The first sound of the heart was caused by the systole of the ventricle, the impact of the heart against the chest wall, and the closure of the auriculoventricular valves, and the second sound was caused by the closure of the semilunar valves. There was no disease of the heart that was not associated with changes in these heart sounds. In the child, the pulmonic second sound was louder than the aortic; in middle life, both of these sounds were of equal intensity, while in old age the aortic sound was the louder. In the later stages of typhoid fever and in other diseases, the first sound resembled the second. The valvular part predominated, owing to the weakening of the cardiac muscle. In mitral stenosis the sound lost its muscular element. Moreover, the apex did not come into contact with the chest wall. The murmurs that were heard loudest at the apex were those caused by mitral stenosis, mitral regurgitation, dynamic murmurs, and the cardiorespiratory murmur. The murmur of mitral stenosis was not transmitted. The dynamic murmur was inconstant. A murmur that exactly resembled that of mitral insufficiency was frequently produced by hysteria or chorea. It varied in its character and would occasionally disappear entirely. Intraventricular murmurs were caused by ruptured cords or by aneurysms of the wall of the heart. These murmurs were not associated with impairment of the functional activity of the heart, nor with changes in the pulse. The cardiorespiratory, dynamic, and intraventricular murmurs were sometimes heard loudest at the base. These cardiac diseases that were frequently overlooked were lesions affecting the aortic valve and the aorta. The aortic stenotic and the intraarterial murmurs were more frequently confused than the murmurs produced by any other heart lesion. One means of distinguishing between the two murmurs was that lesions of the aorta did not compromise the left ventricle, while those of the valves did.

Philadelphia Neurological Society.

At a stated meeting, January 27, Dr. Weiss, by invitation, reported "A Case of Lateral Ankle Clonus." The condition, which has been but rarely described, was observed in a patient of Dr. Spiller's at the Philadelphia Hospital, presenting symptoms of spastic paralysis. Dr. Alfred Gordon described briefly "A Case of Unilateral Ascending Paralysis." Dr. M. D. Bloomfield presented a communication dealing with "The Fraenkel Treatment of Locomotor Ataxia," and he demonstrated an illustrative case. He dwelt on the necessity of careful attention to detail in the reeducation of coordinated movements in the tabetic patient. A noteworthy symptom is an absence of the sense of fatigue, so that for this reason, as well as on account of the liabilitity to unforeseen accident, the treatment should always be carried out under the supervision of a medical man. Dr. W. G. Spiller presented "A Patient with Acquired Bilateral Spasticity and Athetoid Movements." The patient was a boy about 12 years old and the condition had first made its appearance at about the age of 4. It was progressive in development and incapacitated the patient for ordinary activity. The disorder was believed to be due to a degeneration or dystrophy of the lateral columns of the cord. Dr. Spiller also reported "A Case of Encephalitis with Symptoms of Cerebellar Tumor." The specimen exhibited, in addition to other lesions, hemorrhages into the dentate nucleus. Drs. D. J. McCarthy and Milton K. Meyers presented specimens from "A Case of Cerebrospinal Syphilis." Dr. A R. Allen read a paper entitled "The Symptom-complex of Transverse Lesion of the Spinal Cord and Its Relation to Structural Changes Therein." He pointed out the difficulty in determining from the symptoms the degree of injury inflicted upon the spinal cord as a result of destructive lesions and the corresponding difficulty in forming a prognosis and defining the limits of treatment.

At a stated meeting, held February 24, Dr. Alfred Reginald Allen demonstrated "A Case of Paralysis of Associated Upward Movement of the Eyeballs." The patient was a man, about 55 years old, with a history of syphilis, whose right eye moved outward and slightly upward, in attempts to rotate the eyeballs upward. The

right eye did not pass the median line when rotated inward alone, but this movement was completed when carried out in association with outward rotation of the left eye. All other movements of the eyes, singly and in association, were properly carried out. It was thought that the disturbance was due to a lesion destructive of fibers of communication between the oculomotor nucleus on the left and the nucleus of Dartschewitsch on the right. Dr. W. W. HAWKE reported, "A Case of Tabes Dorsalis with Psychosis." The patient had originally presented symptoms of locomotor ataxia with the later developments of characteristic manifestation of paretic dementia, with expansive delusions, but subsequently the symptoms assumed a manic-depressive character. Dr. W. E. CADWALADER exhibited "A Case of Aphasia." The patient was a man, about 60 years old, with slight remains of a previous right hemiplegia and preservation of ability to speak, but with an inability to recognize words and preserved ability to recognize most letters and almost all figures. General intelligence appeared to be unimpaired. Dr. T. H. WEISENBURG exhibited "A Case of Bilateral Involvement of the Cochlear and Vestibular Branches of the Eighth Nerve." The patient was a young man who had first iritis on one side and then on the other, and subsequently tinnitus followed by deafness in one ear after the other. There was also marked vertigo and staggering. Dr. T. A. WILLIAMS of Washington, D. C., read by invitation a paper, entitled "The Pathogenesis of Tabes." He dwelt particularly upon the part played by meningitis in the causation of sclerosis of the posterior columns of the spinal cord through the intermediation of the involvement of the radicular nerves.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

January, 1908.

ANATOMY.

1. Describe the bony pelvis, and state what bounds the cavity of the true pelvis above.
2. How is Poupart's ligament formed? What purpose does it serve?
3. Name the muscles of the abdomen, and give the origin, insertion, and action of any one of them.
4. What structures pass through the foramen magnum?
5. Give the relative position, from without inward, of the structures contained in Scarpa's triangle.
6. Give the origin, course, distribution, and function of the second pair of cranial nerves.
7. Name and bound the ventricles of the brain.
8. Describe the pleural membrane and give its relations.
9. Describe the male urethra.
10. What structures are inclosed within the broad ligaments of the uterus?

BACTERIOLOGY.

1. Describe the two most common pyogenic bacteria, and name the bacteria found in erysipelas, cellulitis, and pyemia.
2. What bacteria are liable to be mistaken for the tubercle bacillus, and how may this error be avoided?
3. Describe ptomains, and name three sources of ptomain poisoning.
4. Give a detailed description of Widal's test in typhoid fever.
5. Write twenty lines upon serum therapy and name diseases in which it has been successfully employed.

PHYSIOLOGY.

1. How are cells reproduced?
2. What are the functions of epithelium?
3. How is cartilage nourished?
4. What are the differences between arterial and venous blood?
5. What physiological process takes place in the capillaries?
6. Give the function of the epiglottis?
7. What are enzymes?
8. How would digestion be affected were the ductus communis choledochus obstructed?
9. Give the physiology of urine excretion.
10. What are the functions of the brain membranes?

HYGIENE.

1. Name the impurities in water that may cause diarrhea.
2. What hygienic precautions should be taken in treating a case of tuberculosis?
3. Give the best method of frying meat and fish, and the reason for your opinion.
4. Tell how to make a beef tea that will be nutritious.
5. Mention and describe the diseases of animals that are communicable to man, and state the means that should be employed for the prevention of these diseases in man.

PRACTICE.

1. Discuss the prophylactic treatment of typhoid fever.
2. Mention the different types of diphtheria and give treatment.
3. Give prognosis in pulmonary tuberculosis.
4. What is the symptomatology of leprosy?
5. How would you treat a case of gonorrheal arthritis?
6. What course may gallstones pursue?
7. Write a short article on Addison's Disease.
8. Name the valvular heart lesions in the order of their frequency of occurrence.
9. How would you manage a case of diabetes mellitus?
10. What may vertigo indicate?

PATHOLOGY.

1. Describe the blood picture in pernicious anemia.
2. What are the microscopical findings in locomotor ataxia?
3. Compare the kidneys microscopically in chronic parenchymatous and chronic interstitial nephritis.
4. Give the morbid anatomy of diphtheria.
5. What are the pathological changes occurring in diabetes mellitus?

SURGERY.

1. How is suppuration developed?
2. Give causes, symptoms, and treatment of osteomyelitis.
3. Name the varieties of ulcer.
4. Name the varieties and general symptoms of fracture.
5. How would you reduce a dislocation of the hip?
6. Give the indications for tracheotomy and how performed.
7. Give symptoms of vesical calculus.
8. Give symptoms and treatment of synovitis.
9. Give causes, symptoms, and treatment of phlebitis.
10. Describe in detail an operation for hemorrhoids.

LEGAL MEDICINE.

1. Give a medical definition of insanity.
2. What is atalectasis? Its effect on the newborn?
3. Of what use is medical examination in life insurance?
4. What constitutes rape? Give medical evidence.
5. Give medical evidence that a child was born at term.

CHEMISTRY.

1. Define elementary and compound matter.
2. What do groups of atoms represent? What is their chemical notation termed?
3. What are normal, acid, basic, and double salts? When one molecule each of hydrogen and chlorine unite, what is formed?
4. State composition, formation and properties of ammonia. How are nitrates formed in nature?
5. What are the properties of urea? Why do urates form deposits in joints and cartilages?

MATERIA MEDICA AND THERAPEUTICS.

1. Give preparations, alkaloids, and physiological action of nux vomica.
2. In what diseases would you prescribe arsenic? Name three preparations of same with dose of each.
3. Name a drug useful as a vasodilator and vasoconstrictor. Give indications for same.
4. Give the dose of apormorphia—give the therapeutic uses for same.
5. Write an ℞ for the following: Lithemia, dysuria, chorea.
6. Mention the incompatibles of digitalis. When, in your opinion, is digitalis contraindicated?
7. Name three preparations of the following drugs and indications for their use; glycyrrhiza, cinchona, camphora.
8. Give child (1 year) and adult dose of acetanilid, morphine, hyoscin.
9. For what conditions would you prescribe the following: Cantharides, capsicum, belladonna, strophanthus?
10. What are the therapeutic uses of the mineral acids?

OBSTETRICS.

1. (*a*) Name the internal generative organ in the female. (*b*) Give brief description of each, and (*c*) functions of each.

2. (*a*) Describe the phenomena of menstruation. (*b*) State the changes that occur in the uterus during menstruation.

3. (*a*) Describe the fetal circulation. (*b*) What changes occur at birth?

4. Give (*a*) probable and (*b*) certain signs of pregnancy. (*c*) Give Hegar's sign and method of eliciting it.

5. (*a*) State three of the most common conditions that might be mistaken for pregnancy. (*b*) Give differential diagnosis.

6. Give (*a*) etiology, (*b*) symptoms, (*c*) treatment of albuminuria of pregnancy.

7. Give (*a*) principal causes of post-partum hemorrhage and (*b*) treatment.

8. (*a*) What conditions justify the induction of premature labor? (*b*) How should it be performed?

9. (*a*) Give symptoms of puerperal fever. (*b*) How would you guard against it, and (*c*) how treat it if it does occur?

10. Give (*a*) diagnosis of a breech presentation, and (*b*) management.

GYNECOLOGY.

1. Give (*a*) causes and (*b*) treatment of pruritus vulvæ.

2. Give (*a*) etiology, (*b*) symptoms, and (*c*) treatment of acute cystitis.

3. Give (*a*) etiology, (*b*) symptoms, and (*c*) treatment of prolapse of the uterus.

4. (*a*) Name the most common causes of sterility in woman and (*b*) state what can be done to overcome them.

5. (*a*) Give differential diagnosis between early pregnancy and a small fibroid tumor. (*b*) How would you replace a retroverted uterus?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

January, 1908.

ANATOMY.

2. Poupart's ligament is formed by the lower border of the aponeurosis of the external oblique muscle; it extends from the anterior superior spine of the ilium to the spine of the pubes.

4. The structures which pass through the foramen magnum are: the medulla and its membranes, vertebral arteries, spinal accessory nerves, anterior and posterior spinal arteries, and the occipito-axial ligament.

5. In Scarpa's triangle the following structures are found, from without inward: external cutaneous nerve, anterior crural nerve, femoral artery, femoral vein.

7. The *Lateral ventricles* of the brain are bounded: *Above*, by the corpus callosum. *Below*, by the caudate nucleus of the corpus striatum, the tænia semicircularis, part of the optic thalamus, choroid plexus, and fimbriated edge of the fornix. *Internally*, by the septum lucidum.

The *third ventricle* is bounded: *Above*, by the fornix, and velum interpositum. *Below*, by the lamina cinerea, tuber cinereum, infundibulum, corpora albicantia, and posterior perforated space. *In front*, by the anterior commissure, and the anterior pillars of the fornix. *Behind*, by the posterior commissure, the iter a tertio ad quartum ventriculum. *Laterally*, by the optic thalami and the peduncles of the pineal gland.

The *fourth ventricle* is bounded: *Above*, by the valve of Vieussens and the cerebellum. *Below*, by the pons and medulla. *Laterally*, by the superior peduncles of the cerebellum, restiform bodies.

The *fifth ventricle* is between the two layers of the septum lucidum, and is therefore between the two lateral ventricles. It is covered over by the corpus callosum.

10. The broad ligaments of the uterus contain the following structures: The Fallopian tubes, the round ligament, the ovary and ligament, the parovarium, loose connective tissue, blood-vessels, and nerves.

BACTERIOLOGY.

1. Two most common pyogenic bacteria:

(1) *Staphylococcus pyogenes albus.* It is a saprophyte; small round-celled with a diameter of about one mikron; clusters in groups like a bunch of grapes; it is facultative anaërobic; it is nonmotile, and has no flagella.

(2) *Staphylococcus pyogenes aureus.* It is very much like the above, only it forms a golden yellow pigment, whereas the *Staphylococcus pyogenes albus* does not.

In *Erysipelas* may be found the Streptococcus erysipelatis, or streptococcus pyogenes.

In *Cellulitis* may be found the staphylococcus pyogenes aureus, citreus, and albus, the streptococcus pyogenes, pneumococcus, gonococcus, bacillus ærogenes capsulatus, bacillus maligni œdematis.

In *Pyemia* may be found the streptococcus pyogenes, staphylococcus pyogenes aureus, pneumococcus, bacillus pyocyaneus, bacillus coli communis, bacillus typhosus, bacillus tetragenus.

2. The bacteria liable to be mistaken for the tubercle bacillus are: the bacillus of leprosy, the bacillus of the smegma, and Lustgarten's bacillus. "The differential diagnosis between these four organisms depends upon the following reactions: When stained by the carbol-fuchsin method, commonly employed in staining the tubercle bacillus, the Lustgarten's bacillus becomes almost instantly decolorized by treatment with mineral acids, particularly sulphuric acid; whereas the smegma bacillus resists such treatment for a much longer time, and the lepra and tubercle bacillus for a still longer time. On the other hand, if decolorization is practised with alcohol instead of acids, the smegma bacillus is the first to lose color. The bacillus tuberculosis and the bacillus of leprosy are both very retentive of their color, even after treatment with acids and alcohol. If, then, we treat the preparation, stained with carbol-fuchsin, with sulphuric acid, Lustgarten's bacillus becomes almost at once decolorized. If it is not immediately decolorized, heat with alcohol; if it is then decolorized, it is the smegma bacillus. If it is still not decolorized, it is either the leprosy or the tubercle bacillus." (From Park's *Pathogenic Bacteria.*)

3. Ptomains are basic, nitrogenous organic substances produced by bacteria. "Owing to the wide variations in the chemical constitution of the ptomains, they possess no characters by which they can be distinguished as a class. Some are strongly alkaline and basic, others only feebly so. Some are liquid, oily and volatile, others fixed and crystalline. Some are very prone to oxidation, and are active reducing agents, others are quite stable. For the same reason, no analytical method is possible by which vegetable alkaloids and ptomains can be separated from each other *en masse*, nor are any reactions known to which all ptomains respond while vegetable alkaloids do not, or the reverse." (Witthaus' *Manual of Chemistry.*)

Three sources of ptomain poisoning: Canned meats, ice-cream, and decomposing fish.

4. Widal's test in typhoid fever "depends upon the fact that serum from the blood of one ill with typhoid fever, mixed with a recent culture, will cause the typhoid bacilli to lose their motility and gather in groups, the whole called 'clumping.' Three drops of blood are taken from the well-washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transporetd for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover-glass, and this is inverted over a sterile hollow-ground slide and examined. . . . A positive reaction is obtained when all the bacilli present gather in one or two masses or clumps and cease their rapid movement inside of twenty minutes." (From Thayer's *Pathology.*)

5. "*Serum therapy* depends upon the fundamental fact that a group of body cells—for example, those of the central nervous system—have a way of rising to the emergency when compelled to defend themselves against a group of foreign cells (*e.g.* tetanus bacilli) and of producing in excess substances antagonistic to such foreign cells or to their products. Such an antagonism is known as immunity. To be immune against a given cell is to possess the power of poisoning or dissolving that cell. This is known as antibacterial immunity. When the body is attacked, not by cell groups but by cellular products, such as toxins, another type of immunity is produced by virtue of which the blood of the immunized individual is able to neutralize and render inert the toxin molecules." (*Reference Handbook of the Medical Sciences.*)

Diseases in which it has been successfully employed are: Diphtheria, tetanus, snake-bites, and rabies.

PHYSIOLOGY.

2. The *functions of epithelium* are: (1) Protection, (2) secretion, (3) motion (ciliary), (4) special sensation, (5) absorption.

3. Cartilage has no blood-vessels, but is nourished from perichrondrium, from synovial membrane, and from bone.

4. *Arterial blood* is bright red in color, contains more oxygen, less carbon dioxide, more water, and is slightly warmer.

Venous blood is purple in color, contains less oxygen, more carbon dioxide, less water, and is slightly cooler (except in the hepatic vein).

6. The *function of the epiglottis*, is: (1) To prevent food and drink entering the larynx; (2) to modify the voice.

7. Enzymes are unorganized ferments which are the result of the activity of special cells of the animal body.

8. If the ductus communis choledochus were obstructed: there would be an increase in fermentation and putrefaction, an impairment of the emulsification of fats, an increase in peristalsis, and perhaps diarrhea.

10. The *function of the dura* is protection: It forms the internal periosteum of the skull, it forms three partitions for the support of the parts of the brain, it forms sinuses or venous channels for the return of the blood from the brain, and it forms sheaths for the nerves as they leave the skull. The function of the *arachnoid* is lymph supply; of the *pia*, blood supply and nutrition.

HYGIENE.

1. The impurities in water that may cause diarrhea, are: Suspended mineral matters, suspended animal (fecal) and vegetable matters, fetid gases, and an excess of dissolved nitrogenous organic matter.

2. Hygienic precautions to be taken in treating a case of tuberculosis: "The patient's quarters should be free from dust, and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practising lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. . . . The clothing should be woollen, but not too heavy, or sweating is increased; and a flannel nightgown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water." (Thompson's *Practical Medicine.*)

4. The following is Bartholow's formula for making beef-tea: A pound of lean beef should be freed from fat, tendon, cartilage, bone, and vessels; it must be chopped up fine, and put in a pint of cold water to digest for two hours. It should simmer on the range or stove for three hours, but the temperature should not exceed 160° Fahr. The water lost by evaporation should be made up by the addition of cold water, so that a pint of beef-tea should represent one pound of beef. It should be strained, the beef being carefully expressed.

5. "Among the most common of the diseases and parasites of animals, which are communicable to man, are: (1) Glanders, a disease of the genus *Equus*, generally fatal when contracted by man; (2) anthrax, a disease of horses, cattle, sheep, and swine, appearing in man either as malignant pustule or as internal anthrax, and often fatal; (3) tuberculosis, a disease common in cattle and swine, but also occurring in horses, sheep, goats, dogs, poultry, cage birds, and menagerie animals; (4) rabies, a disease of the genus *Canis*, communicable to all warm-blooded animals and to man; (5) epizootic aphtha, commonly known as foot-and-mouth disease, a very infectious malady of cattle, sometimes communicated to the consumers of the milk of diseased cattle; (6) *Cysticercus bovis*, found in cattle, is the larval form of the tapeworm of man known as *Tænia saginata;* (7) *Cysticercus cellulosæ*, found in swine, is the larval form of the tapeworm of man known as *Tænia solium;* (8) the *Trichina spiralis*, a common parasite of swine, may develop in man and sometimes produces fatal results; (9) the *Echinococcus* found in the lungs, liver, and other organs of the meat-producing animals is the cystic phase of the *Tænia echinococcus* of the dog.

"It is evident that the most satisfactory way of protecting man from this source of danger is to eradicate these diseases and parasites so far as possible from the domesticated animals. As complete eradication cannot be accomplished for many years and in some cases not at all, there must be constant efforts for repression and control. People must be made familiar with the dangers; too close association with animals should be avoided; the inspection of meat and of dairy cows should be universal; swine flesh should be well cooked; hides, wool, and hair, often infected with the anthrax bacillus, should be handled with suitable precautions; biological products used for the prevention or cure of human diseases should be surrounded with every safeguard to avoid contamination." (*Reference Handbook of the Medical Sciences.*)

PRACTICE.

1. Typhoid fever is preventible. When the municipal authorities do not consider it their duty to supply pure water, each household should boil all water that is to be used for drinking or for washing dishes, etc.; milk should be boiled also; and no ice should be put *in* water or other drink or food; flies should be kept out of the house as far as possible, by means of screens or otherwise; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed, and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over.

3. *Prognosis in pulmonary tuberculosis.* The duration of the disease is variable, but averages about two to two and a half years. According to Osler, "the following may be considered favorable circumstances in the prognosis of pulmonary tuberculosis: A good family history, previous good health, a strong digestion, a suitable environment, and an insidious onset, without high fever, and without extensive pneumonic consolidation. Cases beginning with pleurisy seem to run a more protracted and more favorable course. Repeated attacks of hemoptysis are unfavorable."

8. The most frequent valvular lesion of the heart is mitral regurgitation; then follow mitral stenosis, aortic regurgitation, and aortic stenosis, but the order of these varies according to different writers; tricuspid regurgitation is next; and the least frequent are tricuspid stenosis, pulmonary regurgitation, and pulmonary stenosis, but not necessarily in this order.

10. Vertigo may indicate: Neurasthenia, congestion, or anemia of the brain, eyestrain, disease of the internal ear, meningitis, tumor of cerebrum or cerebellum, gout, indigestion, heart disease, arteriosclerosis, autointoxication. It may also be caused by certain drugs.

PATHOLOGY.

1. In *pernicious anemia* the blood would show: (1) A diminution in the number of red corpuscles; (2) a relative increase in the amount of hemoglobin; (3) poikilocytosis; (4) the presence of nucleated red cells; (5) variation in the size of the red cells; (6) the leucocytes *may be* diminished.

2. In *locomotor ataxia*, the posterior columns of the spinal cord are gray and shrunken and show considerable overgrowth of connective tissue in the columns of Goll, Burdach, and Lissauer; this process extends upward from the lumbosacral region; the posterior nerve roots degenerate and become atrophic. The meninges over the affected parts become opaque and adherent. Some of the cranial nerves may also atrophy, notably the optic, but also the motor oculi and vagus.

3. In *chronic parenchymatous nephritis*, "both degenerative and proliferative changes are seen. The tubular epithelium is always more or less affected, showing signs of cloudy swelling, fatty degeneration, desquamation, and disintegration, most marked in the convoluted tubules, but also present in the loops and collecting tubules. The distribution of these changes is usually patchy, giving rise to mottling of the cortex. The lumina of the tubes may be dilated, and contain granular and fatty matters, and hyaline casts, the latter formed by coagulation of exudation in the tubules. The glomeruli may occasionally appear normal, but there is almost always some swelling and hyaline degeneration, together with some proliferation and desquamation, of the epithelium, so that they become highly cellular. Occasionally the glomerular changes may be more marked than the tubular; fatty degeneration of the glomerular and capsular epithelium may be prominent, or there may be swelling, proliferation, and desquamation of the epithelium, or both these changes may be combined. The glomerular vessels may be compressed, their endothelium degenerate, and they may become obstructed by leucocytes or by hyaline thrombi, and finally obliterated. Interstitial changes, though present, are not conspicuous, and consist of edema, and scattered foci of round-celled infiltration about the glomeruli and veins. Sometimes hemorrhages are evident in some of the glomeruli and the corresponding tubules. Lardaceous infiltration frequently accompanies parenchymatous nephritis."

In *chronic interstitial nephritis*, "the lesions are principally seen in the cortex; at first patches of cellular in-

filtration appear, then the intertubular connective tissue becomes increased and fibrous, with destruction of glomeruli and the corresponding tubules. The glomerular epithelium becomes swollen and desquamates. Bowman's capsules may be much thickened by concentrically arranged layers of nucleated fibrous tissue, and the Malpighian bodies in places may be converted into nodules of fibrous tissue, in others into cysts. The corresponding tubules undergo atrophy with disintegration of their epithelium; here and there multiplication, with convolution of the tubules, may be present, suggesting an adenomatous formation. There is everywhere an increase of the stroma, in the cortex and pyramids, between the tubules, and around the glomeruli and vessels, with pronounced round-celled infiltration or well formed fibrous tissue, in which calcification may occur. The vessel walls are thickened, chiefly owing to an endarteritis. Lardaceous infiltration may accompany the interstitial nephritis." (Hewlett's *Pathology.*)

SURGERY.

1. *Suppuration* is a special form of inflammation, in which the exudate is unusually prolific in cells, and in which pus is found. The cause of suppuration is the invasion of the tissues by pus-producing bacteria, when the said tissues are in a state of lowered vitality or are not capable of withstanding and disposing of the bacteria and their products.

4. Fractures are variously classified:

(a) Simple, compound, and complicated.

(b) Complete (transverse, oblique, spiral, longitudinal) and incomplete (fissured, greenstick).

(c) Single and multiple.

(d) Comminuted, impacted, etc.

(e) Intra- and extraarticular; intra- and extracapsular.

The *general symptoms of fracture,* are: History of injury, disability, pain, swelling, deformity, abnormal mobility, and crepitus.

7. The *symptoms of vesical calculus,* are: Increased frequency of micturition; pain at end of urination, chiefly felt at the end of the penis or in the neck of the bladder; the urine may contain pus, mucus, or blood; a "click" can be obtained by using a searcher or sound; examination by the cystoscope may reveal the presence of the stone.

LEGAL MEDICINE.

1. Insanity is defined, in Allbutt's System of Medicine, as "such a disorder or disease of the nervous system as prevents the individual from reacting normally as a member of the society to which by birth and education he belongs."

2. *Atelectasis* is the condition in which some of the air-vesicles of the lung are not inflated, and hence there is imperfect expansion of the lung.

Its effect on the new-born is to cause pallor or cyanosis, rapid and shallow respirations, and feeble cry; the infant is weak.

3. The use of medical examination in life insurance is to enable the company to form an estimate of the general health of the applicant and so to gauge his expectation of life.

4. *Rape* is carnal knowledge of a female by a man, unlawfully, forcibly, and without her free consent.

The *medical evidence* is based on: (1) Marks of violence about the woman's genital organs; (2) wounds, bruises, or other marks of injury on the woman or on the accused; (3) blood stains and seminal stains on the person or clothing of either party; and (4) the presence of any venereal disease on either party.

CHEMISTRY.

1. *Elementary matter* is such matter as cannot by any known means be split up into other kinds of matter.

Compound matter is such matter as is made up of two or more kinds of elementary matter chemically united, in definite proportions.

2. Groups of atoms represent molecules.

The chemical notation of an atom is termed a symbol; of a molecule, a formula.

3. *Normal salts* are those in which all the hydrogen of the acid has been replaced.

Acid salts are those in which only a part of the hydrogen of the acid has been replaced.

Basic salts are compounds of normal salts with the hydroxide, or oxide, of a metal.

Double salts are those which are formed by the substitution of different elements or radicals for two or more atoms of the replaceable hydrogen of the acid.

When one molecule each of hydrogen and chlorine unite, two molecules of hydrochloric acid are formed.

4. Ammonia. *Composition,* three atoms of hydrogen chemically united with one atom of nitrogen: NH_3.

Formation, by heating a solution of ammonium hydroxide: $(NH_4)HO = H_2O + NH_3$.

Properties, a colorless gas with a pungent irritating odor, and a caustic taste; it is very soluble in water, also in alcohol; it combines readily with water; it also combines with acids to form ammonium salts, this union is direct, and hydrogen is not separated.

5. *Properties of urea:* It is a crystalline solid, soluble in water, colorless, odorless, with a slightly bitter taste; it is neutral in reaction, but basic in character; dilute aqueous solutions are not decomposed by boiling, but by prolonged boiling urea is hydrolyzed to ammonia and carbon dioxide; urea forms compounds with acids and also with certain salts and oxides.

Why urates form deposits in joints and cartilages *is not known.*

MATERIA MEDICA AND THERAPEUTICS.

1. Nux Vomica. *Preparations:* Extract, fluid extract, and tincture of nux vomica; strychnine, sulphate, and nitrate of strychnine.

Alkaloids: Strychnine and brucine.

Physical action: It excites the digestive secretions, increases the appetite, increases peristalsis, and improves the digestion; it is a vasoconstrictor, it raises blood pressure, and is a cardiac stimulant; it is also a respiratory stimulant; hearing and sight are rendered more acute.

2. Arsenic could be *prescribed in:* Malaria, gastric ulcer, and cancer, dyspepsia, anemia, chlorosis, chorea, neurasthenia, rheumatism, chronic skin diseases, lupus.

Three preparations, with dose: Liquor potassii arsenitis, ♏vij; Arseni trioxidum, gr. 1/30; Liquor sodii arsenatis, ♏v.

3. A Vasodilator—Amyl nitrite. Indicated in: Angina pectoris, cardiac dyspnea, epilepsy, asthma, tetanus, and migraine.

A Vasonconstrictor—Adrenalin. Indicated in: Hemorrhages, hay fever, bronchial asthma, Addison's disease.

4. *Dose of apomorphia:* gr. 1/10 of the hydrochloride.

Therapeutic uses: As an emetic, an expectorant (in acute and chronic bronchitis, catarrhal pneumonia, pulmonary tuberculosis).

8.

	DOSE FOR CHILD OF ONE YEAR.	DOSE FOR ADULT.
Acetanilid	Should not be given.	gr. iv.
Morphine	gr. 1/100.	gr. 1/4.
Hyoscin	Should not be given.	gr. 1/128.

OBSTETRICS.

4. (*a*) *Probable signs of pregnancy:* (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hick's sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

(*b*) *Certain signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movements of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical souffle.

(*c*) *Hegar's sign* consists in a thinning and softening of a segment of the body of the uterus immediately above the cervix.

It is elicited by pressing the finger of one hand into the vagina, high up behind the cervix, and with the fingers of the other hand making pressure externally above and behind the symphysis pubis.

5. (*a*) Three of the most common conditions that may be mistaken for pregnancy are: (1) Ovarian cystoma; (2) ascites; (3) uterine fibroid.

(*b*) *Differential diagnosis.—Pregnancy:* The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health may also help in arriving at a diagnosis.

Ovarian cystoma: Absence of the chief signs of pregnancy; there may be the characteristic facies, the tumor is soft, fluctuating, is more to one side, and does not show fetal signs.

Ascites: Absence of the signs of pregnancy; the abdomen is distended, but the shape varies with the position of the patient; on lying down there is bulging at the sides; the tumor fluctuates, and percussion shows dullness in the flanks, with resonance in the median line, but the dullness varies with the position of the patient.

Uterine fibroid: Menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while generally placed somewhat centrally is not in the median line, and is not symmetrical; the rate of growth is irregu-

lar, being, as a rule, slow, and sometimes extending over years.

GYNECOLOGY.

1. (*a*) Pruritus vulvæ may be *caused by*: Parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin, or idiopathic.

(*b*) *Treatment* consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of bichloride of mercury, 1:2,000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.

2. ACUTE CYSTITIS.—(*a*) *Etiology*: Various pathogenic bacteria, foreign bodies, traumatism, retention of urine, unclean catheters, cold.

(*b*) *Symptoms*: Frequent urination, with tenesmus and a burning sensation in the urethra, later on pain in the bladder, hematuria, and the urine contains pus and epithelial cells. Chills, rapid pulse, fever, and headache may also be present.

(*c*) *Treatment* includes: Rest, administration of plenty of cold water or milk, diuretics, bland and mild food, laxatives, hot sitz baths or vaginal douches, irrigation of the bladder with antiseptic solution followed by solution of nitrate of silver.

4. (*a*) *The most common causes of sterility in woman*, are: Gonorrhea, absence or errors in development of any part of the genital tract, malformations of genitals, fistulæ, lacerations, obesity, alcoholism, pelvic inflammations, dyspareunia, inflammations of uterus, tubes, or ovaries, elongated cervix.

(*b*) *Treatment* consists in removing the cause, if possible; curettage has been reocmmended; in the presence of developmental errors, little or nothing can be done; atresia of cervix can be treated by dilatation; if the uterus is misplaced it must be replaced.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	July	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August	4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	14
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	April	14
Florida*	J. D. Fernandez, Jacksonville	Ocala	April	13
Georgia	E. R. Anthony, Griffin	Atlanta	May	—
Idaho	W. F. Howard, Pocatello	Boise	October	6
Illinois	J. A. Egan, Springfield	Chicago	April	15
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	—
Kansas	D. P. Cook, Clay Center	Kansas City	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	28
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm J. Maybury, Saco	Augusta	July	7
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June	2
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	May	14
Montana*	Wm. C. Riddell, Helena	Helena	October	6
Nebraska	E. J. C. Sward, Oakland	Lincoln	May	—
Nevada	S. L. Lee, Carson City	Carson City	May	4
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April	13
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	21
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee		
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg	June	—
Rhode Island	G. T. Swarts, Providence	Providence	July	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May	5
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	April	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 4, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	531	171
Diphtheria	390	44
Measles	1778	37
Scarlet Fever	997	53
Smallpox	—	—
Varicella	166	—
Typhoid Fever	28	8
Whooping Cough	29	4
Cerebrospinal Meningitis	9	12
Malarial Fever	—	—
Totals	3928	329

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending April 3, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, Los Angeles	Mar.	7–14	4	..
San Francisco	Mar.	7–14	5	..
Illinois, Chicago	Mar.	14–21	2	..
Jacksonville	Mar.	14–21	1	..
Rock Island	Mar.	14–21	1	..
Springfield	Mar.	12–19	16	..
Indiana, Elkhart	Mar.	14–21	5	..
Indianapolis	Mar.	15–22	3	..
La Fayette	Mar.	16–23	1	..
Muncie	Mar.	14–21	7	..
South Bend	Mar.	14–21	1	..
Iowa, Ottumwa	Mar.	14–21	1	..
Kansas, Kansas City	Mar.	14–21	7	..
Kentucky, Covington	Mar.	14–21	2	..
Louisiana, New Orleans	Mar.	14–21	8	2
Michigan, Detroit	Feb.	14–21	1	..
Port Huron	Mar.	14–21	2	..
Saginaw	Mar.	7–14	4	..
Montana, Butte	Mar.	10–17	2	..
Nebraska, Nebraska City	Mar.	14–21	8	..
New Jersey, Newark	Mar.	14–21	1	..
Ohio, Cincinnati	Mar.	13–20	19	..
Cleveland	Mar.	13–20	1	..
Dayton	Mar.	14–21	1	..
Tennessee, Nashville	Mar.	14–21	2	..
Texas, San Antonio	Mar.	14–21	20	..
Washington, Spokane	Mar.	7–14	9	..
Tacoma	Mar.	7–14	1	..
Whatcom County	Feb.	15–Mar. 17	32	..
Wisconsin, La Crosse	Mar.	14–21	6	..
Manitowoc	Mar.	14–21	1	..
Racine	Mar.	14–21	3	..
SMALLPOX—FOREIGN.				
Brazil, Bahia	Feb.	1–29	115	..
Canada, Halifax	Mar.	15–22	2	..
Winnipeg	Mar.	14–21	2	..
China, Hongkong	Feb.	1–8	46	29
Ecuador, Guayaquil	Feb.	15–29	..	11
Great Britain, Edinburgh	Feb.	22–Mar. 7	5	..
Greenock	Feb.	29–Mar. 7	1	..
Leith	Feb.	22–Mar. 7	6	..
India, Bombay	Feb.	8–25	..	28
Calcutta	Jan.	18–Feb. 8	..	46
Italy, General	Mar.	5–12	25	..
Japan, Kobe	Feb.	22–29	140	65
Osaka	Feb.	15–26	237	62
Yokahama	Feb.	22–29	53	22
Malta	Feb.	22–29	3	..
Mexico, Manzanillo	Mar.	7–14	2	2
Monterey	Mar.	8–15	..	2
Peru, Lima	Feb.	15–22	..	Present
Russia, Moscow	Feb.	22–29	40	8
Odessa	Feb.	22–Mar. 7	6	2
Riga	Feb.	29–Mar. 7	2	..
St. Petersburg	Feb.	15–29	33	11
Warsaw	Dec.	14–Jan. 11	..	68
Spain, Valencia	Mar.	1–8	10	2
YELLOW FEVER.				
Ecuador, Guayaquil	Feb.	15–29	..	14
CHOLERA.				
India, Calcutta	Jan.	16–Feb. 8	..	151
Madras	Feb.	15–21	..	15
Rangoon	Feb.	8–15	..	4
PLAGUE.				
Brazil, Bahia	Feb.	1–29	5	1
Chile, Antofagasta	Feb.	23	14	1
Arica	Feb.	19–26	6	1
Iquique	Feb.	25	..	Present
Valparaiso	Dec.	14–28	2	1
Ecuador, Guayaquil	Feb.	15–29	4	9
India, Bombay	Feb.	18–25	..	125
Calcutta	Jan.	18–25	..	40
Rangoon	Feb.	8–15	..	17
Peru, Callao	Feb.	22–29	1	1
Catacaos	Feb.	22–29	12	..
Chepen	Feb.	22–29	9	4
Eten	Feb.	22–29	15	10
Lima	Feb.	22–29	9	4
Mansefu	Feb.	22–29	7	4
Mollendo	Feb.	22–29	3	2
Paita	Feb.	22–29	1	2
Santa Eulalia	Feb.	22–29	6	6
Trujillo	Feb.	22–29	32	16

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Original Articles.

CONSTRUCTIVE SURGERY AFTER EXTENSIVE GUNSHOT WOUND OF ABDOMEN.*

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ON December 9, 1904, the wound I will describe was inflicted by the accidental discharge of both barrels of a shotgun, the muzzle being directly against the body, with three layers of clothing intervening—a hunting jacket, the usual shirt, and underclothing. The sportsman was approaching a covey of birds with both barrels cocked and prepared to fire, when he trod upon a wet, slanting depression in the ground, slipped, lost balance, and fell, with the above result.

The contents of the two barrels struck the abdomen at and above the anterior superior spinous process of the left ilium and came out at and above the iliosacral joint, tearing away all the soft tissue from the crest of the ilium and the crest itself, above a line drawn from a point one inch back of the anterior superior process, around the outside of the bone to the upper limit of the sacroiliac joint. The joint was not entered, but the outer half of the transverse processes of the two lower vertebræ were torn off. Many pieces of detached and semi-detached bone were scattered throughout the entire field of the deeper parts of the wound. The only portion of the crest that escaped fracture was that in the immediate region of the anterior superior process, but between it and the inferior process this space was stripped of all tissue but the periosteum. The upper limit of the wound ran in the main parallel to the lower, diverging somewhat upward as it ran back to end at about the vertical center line of the erector spinæ muscle of the corresponding side. The width of wound with the patient resting on the right side was about two and three-quarter inches in front, gradually increasing to about four and one-half behind. About midway the wound was bridged by a piece of skin tissue averaging two and one-half inches in width; its inner surface was cleanly swept of all other tissue. This bridge served to prevent retraction of the skin layer, but all tissue beneath had shrunk away, so that the subcutaneous dimensions of the wound were even greater than the surface measurements above given indicate. The internal limits of the wound were difficult to determine, but Dr. Royster, of Raleigh, N. C., who first saw the case, was able to discover that the peritoneal cavity had been entered, exposing the sigmoid flexure, the lower pole of the left kidney, and the anterior end of the floating rib. The exposed surface of the sigmoid colon extended from the anterior edge of the wound as far back as the kidney; its peritoneal coat had been blown or burnt off, showing the muscular fibers. At the time of the accident it was uncertain whether this intestine had been perforated, but within a day or two some leakage of gas showed that one or two of the shot had entered it. As already said, the top of the ilium was blown away, fragments of it being found deep down beneath the iliacus muscle almost at the linear terminalis in the neighborhood of the iliosacral junction. On the outer aspect of the ilium the pieces were scattered among the remnants of the upper glutei muscles. All these muscles appeared to have been detached largely through the explosive effects of the discharge. Of course the destruction of the bone and muscles was due to the combined action of the shot and powder. The lumbar muscle was practically destroyed, and all of that portion of the abdominal muscles proper which lay to the rear of a line vertical to the anterior superior spinous process. Owing to the mangled state of the tissues hemorrhage was comparatively slight, so that, although the patient lay unaided upon the ground for some time, he subsequently, supported by a companion, drove a mile to a near-by dwelling house. The admirable judgment displayed by Dr. Royster had much to do with the subsequent freedom from sepsis which the patient experienced. He very properly declined to disturb the surfaces by attempts to determine the exact depth of the injury which had been inflicted, especially as there were no evidences of dangerous hemorrhage. The burning which the tissues had undergone practically sterilized the whole surface. This, of course, Dr. Royster recognized, and he therefore merely cut away and removed the many exposed shreds of bone, muscle, and skin, added a superficial sterile dressing, and saw that the patient was made quiet and received proper nursing. About two weeks after injury he was transferred about one thousand miles to New York. A mild septic fever began to show itself, and it was evident there was a gradual increase of fecal leakage from a minute opening at about the center of the exposed sigmoid. It was also evident that the patient must be anesthetized and the several sinuses, which led to pieces of dead bone, cleared out. This had been deferred because the wound was doing well, with no more elevation of temperature than so large an exposed surface would give. Under ether a number of pieces of bone varying from three-quarters of an inch square to less, were removed, one piece being found beneath the psoas, practically at the edge of the inner pelvis. The periosteum having necrosed over the anterior superior spinous process, that portion of the crest was removed, and the jagged ends extending all the way round to the lumbar spine were cut away. An attempt at the same time was made to close the opening in the intestine, but the injury done to the muscular coat as well as the peritoneum left practically little but mucous membrane at the point of perforation to be dealt with, the attempt resulted in a fail-

*Read before the meeting of the Practitioners' Society of New York, March 6, 1908.

ure. After this, barring an attack of mild delirium, which seemed to be a sequence of shock, and possibly the infection, the general conditions were satisfactory. At the end of four months the opening in the intestine had so far enlarged itself that all of

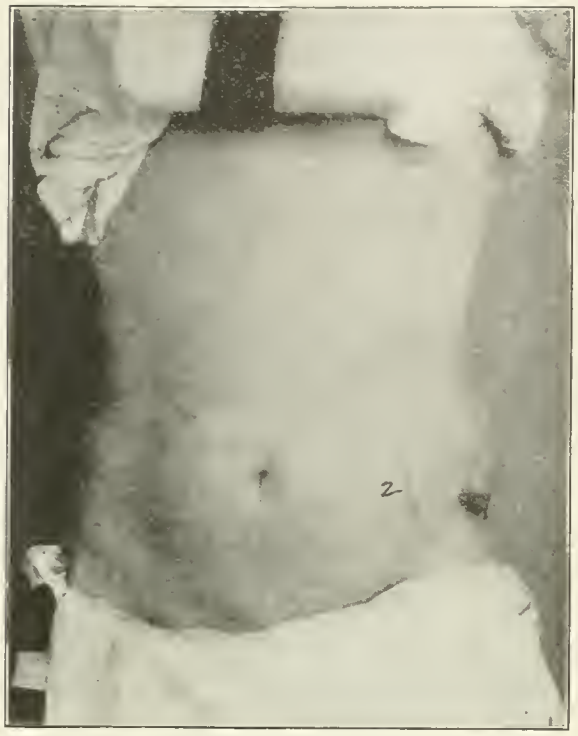

Fig. 1.—Two years after injury. Front view. 1. Original injury. 2. Site of abdominal opening for anastomosis.

the bowel contents were discharged through the side. The hole in the abdominal wall was diminishing under persistent strapping with plaster. It was now necessary to determine how much of an operation should be undertaken for the relief of the conditions existing. The major difficulty lay not in closing the intestine, but in securing the proper covering for it, and it was evident that if the operation was deferred for a few months longer a sufficient amount of contraction would take place around the wound to lessen this difficulty materially. In order, however, to make sure that the function of the rectum was maintained, I concluded that an anastomosis between the transverse colon and sigmoid had best be made. Dr. Bull saw the case with me and coincided in this view. This question of the atony of the rectum in consequence of disuse, is still in dispute, some claiming that even though several years may elapse it can resume its functions without difficulty, but it was preferred to avoid the contingency if possible. I therefore made the anastomosis with a large Murphy button, entering the abdomen just outside the left rectus muscle, Dr. Bull kindly lending his aid. The operation was easily done, as the sigmoid colon was found to have a good mesentery. The transverse colon was readily brought into apposition with it, the points of union being the upper surface of the sigmoid, and the lower surface of the transverse colon beneath the great omentum. The closure of the traumatic opening in the sigmoid at that time might have been undertaken, but not an attempt to furnish a protective covering. I had therefore concluded, as above stated, to perform an anastomosis as a temporary expedient, leaving the sigmoid wound as well as that in the abdominal wall to be handled later. In three months the fecal discharge through the opening in the sigmoid was about equivalent to what it was prior to the anastomosis. As the opening of anastomosis was readily accessible to the finger introduced at the sigmoid wound, I made a cautious attempt at dilatation, but feared a tear in the attachment, so desisted (it was not more than one-third inch in diameter, with rigid edge). From time to time fecal matter found its way into the rectum, and with the aid of enemas this region was kept active. The patient's health continued to improve steadily, putting on fat moderately. The dimensions of the larger outside wound had been materially diminished by persistently drawing together by adhesive plaster applied in the main perpendicularly. The posterior third of the opening was in this manner closed and gradually the edges of the opening in the gut and that in the wall approached till they coincided, the one filling the other.

One year after the sigmoid injury I devised and executed the following operation:

The wisdom of delay was by that time clearly established. The general wound had cicatrized and contracted about the sigmoid to such an extent that the opening in the wall and that in the gut coincided. This opening measured three and three-quarter inches horizontally by two and one-half vertically. At all times there was much prolapse of the everted colon, chiefly the descending, the mass not infrequently reaching the size of a man's fist.

The first step in this operation was the separation of the intestine from the surrounding wall and then closing it. After being separated, the opening in the gut was spontaneously lessened somewhat, but still the large oval opening narrowing at its extremities

Fig. 2.—Front lateral view. 1. Site of traumatism. 2. Abdomen incision for anastomosis.

and widening at the middle involved so much of the circumference of the gut, particularly at its widest part, as to raise a doubt as to the proper line of procedure. This doubt was still further increased by the necessity for removing the thickened cicatri-

cized edges in case we decided to close this opening, rather than resect. There was ample room for resection had it not been for the attachment at the point of anastomosis. This reduced somewhat the amount of intestine below the traumatic opening at disposal for such an operation. I concluded to close this opening. Closing it longitudinally would have been unwise, as the gut would have been too much narrowed at the central portions of the opening. I therefore closed it transversely, making thus an elbow in the gut, widening it at that point. Through-and-through primary sutures were used with the usual peritoneal surface sutures all interrupted. The next question was to provide adequate covering. Fortunately the omentum was abundant and its displacement to the left dependent upon the anastomosis made it easy to draw it over the entire opening. This had expanded after the intestine had been cut out, so that its measurement was now increased from one-half to three-quarters of an inch, the general outline remaining oval as before. The first step was to provide a parietal peritoneal covering for the restored sigmoid; to this end the omentum was drawn over the intestine without tension, and stitched to the under edge of the abdominal opening throughout its entire circumference. This afforded ample parietal peritoneal covering. It was out of the question to find either fascia or muscle for our purpose, so we were compelled to rest satisfied with a supercovering of fat and skin. Vertical incisions were therefore made through the skin and fat at either extremity of the opening, the longest arm being through the gluteal region, the skin with the fat was then dissected from its under attachment beginning at edges of wound, and drawn together over the omentum. The major portion of the flap was taken from the gluteal region. A small piece of rubber tissue drain

Fig. 3.—Rear view. 1. Scar line. 2. Lower limit of hernial protrusion which overrides the upper edge of the ilium.

was inserted at the anterior angle of the wound and dressings applied. The patient was then returned to bed. Care was taken by the frequent passage of the rectal tube to keep down the accumulation of gas in the lower bowel. A through-and-through movement was obtained by a mild catharsis on the second day, and from that time on the progress of the case was uneventful. In all of this work I was much indebted to my associates, Dr. Hamlin and Dr. Brown.

Fig. 4. Front view. Support as habitually worn.

Now, two years after the operation, I will show the patient. He gives you an idea of the extent of the injury and the result of the efforts that have been made to overcome it. He is able to perform the duties of his daily life, walking four and five miles a day for recreation, and with slight encouragement would take up field shooting again. The action of his bowels, with the entire digestion, is excellent; in fact, his health could not be better.

The chief points of interest in the case are the wide extent of the injury, the nature of the tissues involved, the four separate operations undertaken before cure was established, and the cure, as evinced by the present condition of the patient's health, viz., his ability to walk and attend to the duties of life, the excellent state of the bowels in spite of the lack of proper support over the field of injury, and the efficiency of the artificial support which he employs to keep the abdominal contents in place.

As to the operations, the first, by Dr. Royster, consisted of the careful inspection of the wound, the removal from it of the shreds of clothing and of mangled tissue, the recognition of the fact that the force of the explosion and the heat accompanying it had glued the sigmoid in position so that, although there was a wide opening into the abdominal cavity, this temporary attachment of the upper edge of the wound to the sigmoid was so firm as to prevent the protrusion of any other intestine. The recognition also by Dr. Royster of the unwisdom of disturbing this attachment, and also his recognition of the aseptic condition of the wound caused by the burning it had received from the explosion.

The points in the second operation related to the necessity for removing the anterior portion of the

crest of the ilium, which had become denuded of periosteum—the depth at which fragments of bone were found, notably on the inner face of the ilium, beneath the iliacus muscle, where, as before stated, one fragment was removed from the brim of the true pelvis lying there beneath the psoas muscle and separated but a short distance from the common iliac vessels. In this connection attention is drawn to the efficiency of the prolonged use of strapping with zinc plaster so as to narrow the wound as much as possible, and the result which was obtained in securing the juncture of the skin over the posterior third of the wound, thereby diminishing the gap subsequently to be closed by operation.

The third operation relates to the anstomosis between the transverse colon and the sigmoid. The point selected was the under surface of the transverse colon between the mesocolon and omentum at the junction of the middle and left third of that viscus. The point of the sigmoid selected was that which could most easily be brought in apposition with the colon. The anastomosis being at the under side of the transverse colon, the omentum was spread out in its usual apron-like fashion between the intestines and the abdominal wall. The point of entrance to abdominal cavity was about two inches to the inner side of the traumatic opening, about at the outer edge of the left rectus muscle.

The problems in the fourth operation were, first, the proper method of closing the intestinal opening; second, the furnishing of a parietal peritoneum against which the intestine could rest, in that way minimizing the chances of adhesion and lessening the chances of subsequent perforation from ulcerative processes in the exposed intestinal area. It was realized that if the sigmoid were not provided with such a covering, it would become adherent throughout to a large extent and that that area would always be exposed to possible perforation from any ulceration of the mucous membrane which might subsequently occur; third, the finding of an external covering for what must be a large hernia, and, fourth, the devising of some plan by which its extension and enlargement in the future could be controlled. The manner in which these several problems have been met has been here described and the result is now before you.

7 East Thirty-sixth Street.

A PHENOMENAL AORTIC ANEURYSM.*

By W. GILMAN THOMPSON, M.D.,

NEW YORK.

The occurrence of an abdominal aortic aneurysm of falsely sacculated and dissecting type, measuring 6 x 9 x 11 inches, containing 6½ quarts of fluid blood and clots (3,500 c.c.), causing marked displacement of the kidneys, and erosion of five vertebræ, is so unusual a phenomenon as to merit permanent record. The case is of further interest from the fact that until within three weeks of his death, the patient was able to walk about. He became mentally deranged, however, and his "friends," to get rid of him, had him arrested upon a bogus charge of attempted suicide from gas poisoning, so that he was finally brought to the Presbyterian Hospital, accompanied by a burly policeman, as an illustration of the practical working of the absurd State antisuicide law, which makes attempted self-destruction a penal offence, and under which there has never yet been a conviction!

Fig. 1.—Abdominal aneurysm, extending from the diaphragm to the prominence of the sacrum, measuring 6 x 9 x 11 inches, and containing 3,500 c.c. of clots and blood.

The patient was an Italian day laborer, 39 years of age. He had contracted syphilis when 21 years old, for which he had been treated. With this exception he had had no other illness but malaria, until

*A paper read before the Practitioners' Society, March 6, 1908.

four years prior to his death, when he had much general abdominal pain accompanied by melina, which occurred from time to time for several months. He recovered, and remained well for a year, when, two years and a half before he came under observation, he was again attacked by severe abdominal pains which chiefly occupied the lower right side of the abdomen and radiated down the right thigh, being often worse at night. He suffered also from constipation and frequent micturition. These symptoms continued with varying severity until within six months of the patient's admission to the hospital when the pains in the abdomen and right thigh became severe and frequent. They were made markedly worse upon standing, when the abdomen became distended and tense, hard and tender, but upon sitting or lying down, the patient was relieved. He lost much weight and became anemic.

FIG. 2.—Erosion of the eleventh and twelfth dorsal and the first, second and third lumbar vertebræ, caused by an abdominal aneurysm.

Upon admission to the hospital the man appeared emaciated and pale and suffered great pain upon attempting to fully extend the right leg. Blood examination showed a hemoglobin percentage of 35, a red cell count of 2,600,000 and a polynucleosis of 87 per cent. The heart appeared normal in size, but the rhythm was infantile and a faint systolic bruit was apparent over the apex and base. The arteries were moderately thickened and the pulse dicrotic, of poor quality. In the chest were signs of a moderate bronchopneumonia with fluid in the left pleural cavity. Behind both liver and spleen were large strongly pulsating masses which caused considerable bulging of the lower ribs posteriorly. Upon the right side especially, the expansile pulsation was visible through an arc of fully half an inch, and there was a sensation of fluctuation, but without definite bruit at that region. Anteriorly tumor masses of harder feel extended into the groin on both sides, and on the right a hard mass the size of an egg was distinctly felt lying superficially a couple of inches above Poupart's ligament. This mass, and a similar one less distinctly felt upon the left, I mistook for new growths, but they proved to be the dislocated kidneys imbedded in a mass of connective tissue so dense that at autopsy they had to be dissected out before their real nature became apparent.

The right side of the abdomen was very prominent anteriorly, but the only site where a bruit was distinctly audible was over a limited area to the left of the umbilicus. This fact must have been due to the number of large clots which filled the tumor.

It was difficult to believe that so large a mass, bulging out the abdomen over both flanks and behind both liver and spleen could be a single aneurysm, and at one time there seemed reason to suspect that it was a multiple angiosarcoma of gigantic proportions. This belief was encouraged by the variations in density of the tumors, pulsating in parts, elsewhere hard and nodular, and by the patient's condition of emaciation and anemia. The fluctuating mass to the outside of and behind the liver, suggested the presence of an abscess with transmitted pulsation, a belief supported by the blood examination which showed a high polynucleosis. I therefore suggested to the house physician to put in an aspirating needle at this point, but to use a small one. The needle must have passed into a clot, for it yielded no result, beyond a few drops of blood. The subsequent rapid increase in size of the mass and increase in intensity of pulsation left little doubt that it must be an aneurysm, but even at autopsy the mass was so obscured by dense connective tissue and distorted muscles and viscera, that it was not until it was laid open that its nature became certain. The irregular density and shape of the mass, as felt through the abdominal wall, was explained by the variations in thickness of the aneurysmal sac and the unexpected position of the imbedded kidneys.

After eight days in hospital, the patient died from edema of the lungs and brain. The autopsy, performed by Dr. Meakins of the pathological department, is summarized as follows:

Autopsy.—The liver, which weighed only 1,000 grams, was thin and flattened against the anterior abdominal wall; it occupied a normal position, and showed fatty degeneration. The spleen weighed 200 grams, and was bound in the normal position by adhesions. Both kidneys lay below the umbilicus, the right being a couple of inches above Poupart's ligament, and both were in contact with the abdominal wall, imbedded in a mass of connective tissue; they weighed 50 grams each, and the capsules were adherent. To remove the aneurysm entire the psoas and iliacus muscles had to be removed upon both sides, leaving only the skin of the posterior abdominal wall. The aneurysm occupied the entire posterior part of the abdomen, extending from the diaphragm to the lower border of the sacral prominence, in the median line, and reaching down on either side as far as Poupart's ligament. On removing the large laminated clots which filled most of the cavity, the wall of the aneurysm was found composed of the intima, the other arterial coats being indistinguishable excepting over a very small area. The aneurysm appeared to have originated from the posterior wall of the abdominal aorta, not from any of its branches. Five vertebræ were eroded, viz., the eleventh and twelfth dorsal, first,

second, and third lumbar. The first lumbar vertebra was so deeply eroded that the meninges were exposed, and a groove three-fourths of an inch in depth occupied the anterior part of its body.

The heart was normal in size, firm, and showed some increase in fibrous tissue; the myocardium was firm and the coronary arteries were clear; the mitral and aortic cusps were somewhat thickened, and atheromatous plaques involved the base of the thoracic aorta. At the root of the thoracic aorta a small fusiform aneurysm (3½-6 cm. in diameter), was discovered. Both pleuræ were adherent, and in the left pleural cavity were about 300 c.c. of clear serum. Bronchopneumonia was present.

The patient's emaciation may have been due to pressure upon the pancreas or ductus choledochus or liver, but neither sugar nor bile were discovered in the urine. The only suffering of which he complained while in hospital was from pain in the right leg which he kept in semiflexion. He was too ill to justify an exhaustive study of the reflexes or condition of the spine before death.

Aneurysms of this type and size are exceedingly rare, and have sometimes been mistaken for angiosarcoma, or parasitic tumors (actinomycosis, hydatids, etc.), pulsating abscesses or cysts. Sansom, of London, writing of this topic, states: "It is surprising how large an aneurysm and how considerable a displacement of organs may be undetected when the sac is close to the vertebral column and does not bulge forward."* He also refers to the paroxysmal and nocturnal type of pain existing when there is erosion of the vertebræ, a phenomenon noted in the case above reported.

In a statistical study of 10,360 autopsies made in Jena, Ernst Müller† found 69 cases of aneurysm which involved some portion of the aorta, but only 6 of these sprang from the abdominal aorta, one in a female, 5 in males. Thus a ratio of scarcely more than 3 per cent. were abdominal in this series. Among 468 cases of aneurysm at St. Bartholomew's Hospital 23 were of the abdominal aorta (approximately 5 per cent.). At the Presbyterian Hospital, New York, during the past 25 years the clinical diagnosis of aneurysm has been made 158 times. Among these cases 108 were aneurysms of the aorta, including 21 of the abdominal aorta. As the earlier records of the hospital, however, are somewhat defective, this large proportion of abdominal aneurysms, so at variance with experience elsewhere, must be attributed, in the cases unconfirmed by autopsy, to a too frequent inclusion of simple pulsating aorta. In Bellevue Hospital during the past five years there have been 82 cases of aneurysm of the aorta, including only three of the abdominal division, among 81,338 patients treated on the medical service alone.

In the case above described it is reasonable to suppose from the history, that the lesion began in the abdominal aorta about two and a half years prior to death and developed rapidly during the last six months of the man's life. Considering the phenomenal size of the mass and the compression and displacements to which it gave rise, it is astonishing that the patient presented so few subjective symptoms.

*Twentieth Century Pract., Vol. IV., p. 511.

†"Zur Statistik der Aneurysmen" (Thesis).

34 East Thirty-first Street.

Abnormal Appetite.—From Silesia comes the report of an operation on a young girl who had swallowed an enormous number of nails, pins, and needles. The entire mass of foreign material is said to have weighed three pounds.

A CASE OF RECURRENT JAUNDICE; DEATH IN THIRD ATTACK FROM CARCINOMA OF PANCREAS.*

By GEORGE L. PEABODY, M.D.,

NEW YORK.

The patient whose duodenum and adjacent viscera I had intended to show you this evening was a woman, thirty-five years of age, of sedentary occupation, whose habits were good and who presented nothing significant in her family history, nor in her previous personal history. I have been compelled to abandon the demonstration of the organs concerned in her death, because it has been found necessary to destroy the lesion of chief interest, namely a small annular carcinoma beneath the mucous membrane of the duodenum in order to ascertain its origin.

Two years before she came under my care in the New York Hospital she had her first attack of jaundice, preceded by a chill, nausea, and vomiting. Nausea and vomiting lasted several days before jaundice began; and the nausea continued for two weeks after onset of jaundice. This latter was entirely painless, and lasted three months. During all this time her stools were clay-colored. Then she gradually recovered, the jaundice passed away, and she considered herself well.

Eight months later she had a similar attack. Like the first, it was entirely painless, and both preceded and accompanied by nausea and vomiting. The jaundice in this attack lasted between five and six months, and she became very weak.

Seven months after this recovery, and six weeks before she entered the New York Hospital she had the third and fatal attack.

This attack was distinguished from the previous ones by the occasional but irregular occurrence of chills, after the jaundice had become very pronounced.

Nausea and vomiting occurred frequently, and anorexia was persistent.

There was never any vomiting of blood in any of the attacks. This attack was as completely painless as were the others, but towards the end of her life her enlarged liver was very tender on palpation. She suffered much from thirst. She had lost twenty-two pounds in the last attack, and about forty-six pounds since the beginning of her illness, two years previously.

Her nose bled twice, but not persistently. She had an insignificant cough, without expectoration. Her chief complaints were of jaundice and weakness.

On careful questioning she adhered to her statement that these attacks had always been preceded by four or five days of nausea and vomiting.

Inspection revealed a condition of very deep jaundice. There was the well-known greenish black hue to the deeply yellow skin that goes with icterus gravis.

The liver seemed enlarged in all directions, and extended three fingers' breadth below the free margin of the ribs. The gall-bladder could not be made out, nor could any abnormal masses be distinguished by careful palpation of the abdomen. The spleen was enlarged and very readily palpable. Its consistence was very firm.

The heart sounds and pulse were feeble, 116 to the minute, respiration was 24, and temperature 103.2°. She was somnolent, and indifferent in her manner, and very profoundly prostrated.

*Read at the meeting of the Practitioners' Society, March 6, 1908.

Her blood was repeatedly examined, and it showed generally a slight reduction in the number of leucocytes: Polymorphonuclears were usually about 93 per cent., red cells, 3,840,000.

She took almost no food, was frequently nauseated, rarely vomited, became progressively weaker, more indifferent, somnolent, and died, comatose eleven days after entering the hospital.

Until the last three days of her life, when her temperature was normal, she had fever which was occasionally intermittent, usually continuous, and never quite reached 104°.

Her stools, which were always clay-colored, contained much free fat and fat crystals, no parasites or ova, and, for the most part, no blood visible either to the eye or through the microscope, although blood could always be recognized in them chemically. On the day before she died she passed per anum an elongated blood-clot about three inches long and rather more than half an inch in diameter. Toward the close of her life her pulse fell to 90, 84, 80.

Her urine could not be measured, because it was passed either with her stools or involuntarily; but it seemed to be scanty in amount.

It was examined very frequently. It was always acid, varied in specific gravity from 1010 to 1018, always contained a heavy precipitate of albumin, many granular casts (both finely and coarsely granular) abundance of bile, and never any blood or sugar.

It seemed to me that we had to do with a case of obstructive jaundice apparently catarrhal in its onset, without biliary calculi, and so much graver than catarrhal jaundice usually is as to suggest some other subsidiary or contributory factor which I was unable to make out, and could only suspect to be a carcinoma.

The autopsy was made the day after death by Drs. Elser and Symmers, the pathologists of the hospital.

They found a stricture of the common bile duct and the duct of Wirsung, for they did not enter the duodenum by a common opening. The latter entered the duodenum just below the former. The stricture was caused by a small annular carcinoma of scirrhus variety which completely surrounded the papilla of Vater, just beneath the mucous membrane and deeply invading the muscular structure of the gut.

The diameter of this ring of cancerous tissue was less than an inch and its thickness in all directions less than a third of an inch. It lay in close proximity to the head of the pancreas: but its origin in the pancreas could be proved only by examining repeated sections cut completely through the wall of the ring. At first sight it did not seem to be connected with the pancreas at all.

Through the papilla of Vater could be passed only a very small probe.

Among the organs which showed changes of importance came, first, the liver. It was markedly enlarged, of olive green color, of denser consistency than normal, its markings on cut surface unusually distinct.

Under the microscope it showed the usual effects of bile-stasis, and early cirrhosis, with proliferation of small bile-ducts as is usual in this condition.

The gall-bladder was markedly dilated and filled with a viscid fluid, having the appearance of a bile-tinged serum. The mucosa appeared atrophied, with indistinct markings. The cystic duct was dilated to about the size of a lead pencil. The common and hepatic ducts were dilated so as to be about three times the diameter of the dilated cystic duct. They contained a fluid similar to that found in the gall-bladder. The gall-bladder lay completely concealed beneath the liver, a fact which accounted for its not being palpable, although it was greatly increased in size.

The pancreas was nodular throughout, of very unusually firm consistence. The duct of Wirsung was markedly dilated except at its point of entry into the duodenum, just below the common duct, where it was markedly constricted by the small tumor-mass already described. There was no evidence of either gallstones or pancreatic stones. Microscopic examination of the pancreas showed a condition of pressure-atrophy of the gland cells and a very extensive interlobular cirrhosis. The islands of Langerhans showed no structural changes, and no carcinoma was found except that which formed the stricture.

The kidneys were both the same in appearance. They were enlarged. Capsules were thin, and stripped with unusual readiness. Surface was smooth, unusually moist, dark greenish-red in color, and opaque.

Cut section showed the entire organs markedly edematous. The cortex was thickened—markings were fairly distinct in some places, but indistinct in others. Consistence seemed slightly increased.

Under the microscope the kidneys showed the lesions of acute parenchymatous nephritis, a high grade of edema of the interstitial tissue, acute glomerulitis.

The spleen was enlarged, and showed firm fibrous adhesions over posterior aspect and upper pole of the organ. Tension of its capsule was increased. Cut section was fairly smooth, and dark red in color. Malpighian bodies and stroma were fairly distinct.

The stomach was small and atrophic, and covered with a thin mucus.

Intestines.—The lowermost portion of the ilium and the upper portion of the large intestine showed a high grade of congestion of the mucosa. The descending colon contained a number of altered blood-clots.

Mesenteric and retroperitoneal lymph nodes were swollen and edematous, but revealed no evidences of a new growth. No metastases were found anywhere.

Cultures taken from the following fluids and organs at autopsy showed pure cultures of *Bacillus capsulatus mucosus*, namely: Blood from median cephalic vein, gall-bladder, kidneys, liver, spleen.

I have sections to show you of the carcinoma, pancreas, liver, kidneys, and spleen, which show readily the microscopic lesions which I have described.

The case is a somewhat unusual one and did not admit of a positive diagnosis during life, although from the extreme gravity of it one could not help thinking of a carcinomatous stricture. There would have been little question of this diagnosis in my mind had it not been for the two previous attacks of jaundice, each of them protracted through months, and each very prostrating.

It was quite evident that the patient was suffering from obstructive jaundice, and that the obstruction was not due to cholelithiasis. It also seemed likely that duodenitis was a contributing factor; but the severity, fever, rapid pulse, and above all the emaciation, suggested the presence of a neoplasm occluding the common duct by pressure.

Mayo and Cammidge in their recent book on the "Pancreas" make the following statement: "Whenever in a patient at or past middle age, jaundice comes on painlessly and becomes absolute, at the

same time that the gall-bladder gradually enlarges so as to form a perceptible tumor, and the patient rapidly loses flesh and strength, a diagnosis of cancer of the head of the pancreas will probably be correct."

It is not likely that this carcinoma had to do with the two previous attacks of jaundice, for although of slow growth its growth is steadily progressive. It is not likely to have been intermittent in its causation of jaundice, and it probably did not exist longer than a year. It seems to me probable that the two earlier attacks of jaundice were of catarrhal etiology.

BRIGHT'S DISEASE AND ITS TREATMENT.

By OTTO LERCH, A.M., M.D., Ph D.,

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In 1827 Richard Bright published the statement that albuminuria and dropsy are symptoms of kidney disease, and ever since that time the term Bright's disease has been applied to diffuse nephritis. By diffuse nephritis is understood a constitutional disease involving both kidneys and mostly both tissues —parenchymatous and interstitial. We speak of a parenchymatous nephritis remembering that in a large number of cases the interstitium is involved as well, and interstial nephritis without parenchymatous involvement does not exist. Some authors do not wish to have the name Bright's disease retained; however the term is so generally accepted by the practitioner that it would be difficult to eliminate it from our nomenclature, even if that were advisable.

The most prominent symptoms are still edema and albuminuria, hardly ever absent and always occasionally present. The face, especially the eyelids, and the shins are most frequently the seat of the edema of Bright's disease, not rarely allowing a differential diagnosis from heart disease, the edema of which commences in the feet and ankles and from the diseases of the liver and peritoneum, which are marked by ascites. The etiology, the course of the disease, the examination of the urine and of every organ allow generally a correct diagnosis of the special form.

Bright's disease is a constitutional disease. In every instance an intoxication of some kind is the cause—the toxins of the microorganisms of the acute and chronic infectious diseases—the toxins of the diseases of metabolism, gout and diabetes, and certain poisons ingested. The toxic substances are carried by the blood to the kidneys, there giving rise to the disease. This characteristic etiological feature makes it at once clear why next to the kidneys the heart, vessels, and liver have to suffer, though not an organ in the body escapes injury—the perfect condition of all depends on pure blood—a differentiation except in typical advanced cases is not always easy to make. The acute parenchymatous form may gradually pass into the chronic form and this into the sclerotic kidney. The exacerbations of chronic parenchymatous and interstitial nephritis may be mistaken for the acute disease, and the congested kidney of circulatory disturbances resembles acute nephritis.

Fat droplets in epithelial cells coming from the kidneys, and fatty casts in the sediment of the urine indicate chronic parenchymatous changes; and absence of sediment and large quantities of urine voided speak in favor of an interstitial process. The albuminuria of the infectious fevers is frequently due to cloudy swelling of the kidney epithelium and may be the only symptoms of a chronic process not discovered till years have passed.

The so-called physiological and cyclical albuminurias observed in some individuals at certain times, after eating or exertion, are always to be regarded with suspicion. In these cases the kidneys are locus minoris resistentiæ and these albuminurias have been frequently seen to pass into chronic interstitial nephritis.

Acute nephritis accompanies or follows in the wake of the infectious diseases, though the absorption of toxins produced in chronic diseases of the digestive tract, the ingestion of certain drugs, and exposure and chilling of surface may cause it. All anatomical elements may be involved. The exudation is excessive and glomeruli and tubules are choked with débris. If the process is catarrhal it is curable, and even if croupous complete recovery frequently takes place, not leaving a trace of the serious trouble. If the interstitium is involved the danger that the disease passes into chronicity is great. The patient presents a typical picture. The face is bloated, the color pale, and the general anasarca gives a waxy appearance. The excessive edema is due to the injured vessels and to heart weakness, pronounced if cardiac disease, as is so often the case, complicates the trouble. Every function is interfered with. Dyspnea, complete anorexia, nausea and vomiting, diarrhea, headaches, convulsions, paralysis, epileptic seizures, and amaurosis due to cerebral edema, some or all may be present in such a general intoxication. The urine is diminished in quantity, of dark color, of high specific gravity, contains a large amount of albumin, and the sediment contains casts of every description, usually blood corpuscles and epithelial cells.

According to the severity, the process may last from a few days to months. The kidney is large and heavy, dark red or gray in color, and its capsule easily peels. It is a hemorrhagic or an anemic kidney.

The clinical picture of an acute exacerbation of the chronic and interstitial forms does not differ from that of acute nephritis and the two can be differentiated only by the history and the changes that have been produced in heart and vessels, lungs, liver, and spleen. If acute nephritis passes into the chronic forms, the symptoms become gradually less marked as the storm passes. Edema and albuminuria decrease, the scanty urine changes with copious and frequent urination, the pale face, the puffy eyelids, and the edema of feet and ankles persist. The urine contains albumin, fat, epithelial cells, granular and frequently waxy casts. The kidney is generally large, though it may be of normal size, and in addition to the lesions of nephritis amyloid degeneration is often present. As the process continues the chronic form may pass into the sclerotic kidney, and as a cure is of rare occurrence this is in most instances to be considered a favorable termination.

The symptoms of the amyloid kidney, not always classed as a form of Bright's disease, because it is not due to a process of inflammation, resemble those of the chronic form, yet it is rarely difficult to make a correct diagnosis from the etiology—chronic phthisis, malaria, lues, or an old suppuration somewhere in the body.

The degeneration is not alone present in the kidneys, but always marked in liver and spleen; both organs are enlarged, and when palpated are felt to

be of waxy consistency. The gastrointestinal disturbances are severe, due to the degeneration of their glands. The urine is generally of large quantity, clear, with only a few hyaline and granular casts and a large amount of albumin, though frequent changes in the composition of the urine are observed. Cardiac hypertrophy, retinitis, uremia are rare and may be considered due to a combination of amyloid and indurative nephritis. The kidney may resemble the large white or the contracted kidney; amyloid degeneration is its characteristic feature.

The contracting kidney is by far the most frequent, and the causes that produce it are numerous. Either hard work and exposure or a life of ease and luxury may cause it, as well as mental labor and anxiety, gout, arteriosclerosis and alcoholism, lead intoxication, malaria, lues, and diabetes. As in all other forms of morbus Brightii the toxic substances produced by these various causes are directly at fault. High arterial tension, venous congestion, and interstitial tissue growth with consequent destruction of parenchyma are its main pathological features. It is a very serious disease and a frequent, if not the most frequent, cause of death—not directly, but through intercurrent diseases. Its cause is manifold, its onset is insidious, its progress is slow and steady. It is found in all walks and stations of life, both sexes are subject to it, and there is not a disease that with such steadiness and certainty undermines the general health and lowers the resisting power of the body with so little warning, as does this form of Bright's disease. Not an organ in the body is spared, and changes are wrought daily and hourly, the system adapting itself to these changes as they progress, so that the patient feels only occasional, and in the beginning very slight disturbances of general health, for which he finds ready relief by enforced rest and the drugs dispensed to him. When finally a thorough examination is made, and an advanced stage of the disease is discovered sometimes accidentally, warnings may be disregarded and further valuable time lost, till an apoplexy, a pneumonia, or cardiac failure due to an advanced myocarditis, closes the scene. This peculiar course of the disease is readily understood when we consider life led under normal conditions. Even then toxic substances constantly retained in the blood may cause, in the course of years, thickening of vessel walls and artheromatous degeneration, hypertrophy and myocarditis of the heart, cirrhotic processes in lungs, liver, and kidneys.

The kidney of the aged differs but little from the kidney of interstitial nephritis, and the changes are produced even in normal condition, with comparative rapidity. It has been said that after the age of 40 all kidneys are diseased. That the kidneys should suffer most we understand, if we remember that these organs practically consist of a mass of tubules surrounded by numberless capillaries *constantly* filtering toxins ingested and the waste of metabolism constantly formed.

The most frequent causes of death in interstitial nephritis are the most frequent causes of death of the aged—pneumonia, apoplexy, myocarditis, though of course any trifling cause may break down a worn-out organism. Interstitial nephritis is a premature old age and its intelligent and prophylactic treatment is best adapted to ward off old age.

The causes of the disease explain the insidious onset, the slow and steady progress, the absence of suffering till late, and the pathological features—local irritaion, congestion, round-cell infiltration, formation of interstitial tissue, destruction of tubules, and atrophy of the glomeruli. Even in this advanced stage large areas of normal and hypertrophied tissue may be found in the kidneys.

The interstitial tissue growth is the most prominent feature of the disease and has furnished its most generally applied name, "interstitial nephritis and contracting kidney," due to the common cause, toxic substances in the blood. Endarteritis is rarely absent and changes are produced throughout the vascular system. The heart answers with hypertrophy the demand for more work to overcome peripheral resistance, and with the tense pulse we find associated a lifting apex beat and an accentuated second aortic sound. As time advances the pulse becomes wiry, accompanied frequently by a hypertrophied and dilated heart, degeneration of its muscular tissue progresses, and the distressing symptoms of a failing heart follow, cyanosis, dyspnea, edema, congestion of the viscera, and concentrated urine loaded with sediments. Murmurs are heard over every valve and the patient presents the picture of advanced heart disease.

A healthy arterial system will sustain high blood pressure, but when it becomes diseased, its elasticity will be insufficient and give rise to miliary aneurysm in the cerebral circulation where capillaries which do not anastomose nourish the internal capsule. This is a common symptom in interstitial nephritis and the changes that have taken place in the arteries may be observed in the fundus of the eye, where they often cause retinitis. After the formation of miliary aneurysms in the cerebral circulation even a slight increase of pressure may cause rupture and hemorrhage, and so we see these patients struck by apoplexy after a heavy meal, in the bath tub, at stool, or on their way home from office, or even at work with their usual occupation. Chronic bronchitis, emphysema, and liver cirrhosis are expressions of the common cause that has made the kidney lesion a prominent feature of a constitutional disease. In fact, the disease means chronic inflammatory changes in every organ of the body.

The urine, when the disease is well established, is characteristic. Large quantities are voided and the patient has to rise at night to empty his bladder. The color is pale, the specific gravity low, and it contains but little sediment; generally a few hyaline casts are discovered and chemical tests reveal traces of albumin. It is the one form of Bright's disease in which albumin is not always present, and during the course of which perfectly normal urine may be voided. This is readily explained by the pathogenesis-interstitial tissue growth, encroaching and destroying parenchyma, leaving large areas of functioning kidney tissue intact and hypertrophied.

If the cause is once established the intoxication of the system is constant and its action upon it, like a drop of water that hollows a stone, is hastened by the involutions of advancing years. This is the reason why it is so difficult, and frequently impossible, to make an early diagnosis. Pulse tension, occasional headaches, indigestion, neuralgia, and rheumatic pains are the early symptoms, and as they soon pass with and without treatment, and are often due to minor local disturbances, they may be taken lightly and the disease allowed to pass on till serious changes have taken place. The arterial walls become thickened and the vessels roll under the fingers, the apex beat lifting and the second aortic sound being accentuated. Headaches, gastrointestinal disturbances, neuralgias, and rheumatic pains

are of longer duration, and more difficult to relieve; dizziness, fainting spells, and occasional attacks of asthma occur and the patient notices that he has to void a larger quantity of urine and that he has frequently to rise at night. Even at this stage the urine may be most of the time free from albumin and casts, and is often found normal. And again, years may pass, symptoms coming and going, the disease not being recognized until perhaps an acute exacerbation of the chronic process settles the diagnosis.

The temperature rises to 102°, sometimes 103° and 104°, there is delirium and convulsions and coma may cause death. The urine, usually light greenish in color and of low specific gravity, free from albumin and casts, is now concentrated and contains both. However, as stated before, this is not the most frequent cause of death, but an intercurrent disease; a pneumonia, an apoplexy, or an infectious disease will break down the undermined system.

The kidney of pregnancy, which gives the characteristic symptoms of Bright's disease and may be classed under this head, is caused by pressure upon the renal veins and excess of waste matter in the blood.

The treatment promises much and the gloomy view constantly expressed is wrong and unnecessary. The very name scares the patient and causes such depression that in most cases it is wise to withhold it. Acute nephritis is curable, chronic nephritis may be converted into the interstitial form, and if the etiological factor that causes the contracting kidney is eliminated at a time when the disease is still in its incipiency, there can be no doubt that the progress of the disease can be checked and an apparent cure effected. On the other hand, we must be fully aware that parenchymatous tissue when destroyed cannot be remade once fibrous tissue is formed, and that the disease in its last stages is fatal.

Early symptoms, no matter how light, must be regarded as serious. If the favorable time is allowed to pass, cure becomes more and more impossible, relief of distressing symptoms more and more difficult, and the fatal issue is only a question of time. Statistics are unreliable because the patients are usually carried off by intercurrent diseases; damaged kidneys provide a favorable soil for almost any disease, and death follows, when with these organs sound the patient would pass smoothly through the attack.

The treatment of acute nephritis is first of all preventive. During an infectious disease and after the disease has run its course, the kidneys have to be watched and the urine has to be frequently examined. Pure water, vichy, milk, and buttermilk must be freely administered to flush the kidneys, and drugs that irritate them should be given with the greatest caution.

Absolute rest in bed is the treatment after the disease has been established, no matter how mild the case. There is no drug known that exercises a beneficial influence upon the process. Thorough elimination by skin, bowels, lungs, and kidney, and rest to the organ are the indications. A flushing of the kidneys freeing tubules and glomeruli from débris is desirable. However, the edema present and the state of the circulatory apparatus must guide the administration of the liquids. If the congested and diseased kidneys refuse to eliminate, the liquid will be retained and increase the edema. In such a case its administration must be diminished and thirst quenched by giving crushed ice. Milk is the best diet to begin the treatment, gradually adding crackers, zwieback, some of the green vegetables, and freshly pressed fruit juices, as lemonades.

The tepid bath increases diuresis and effects a flushing of the kidneys. The bowels have to be kept freely open, sulphocarbolate of sodium and of zinc given; if diarrhea is present beta-napthol or other antiseptics may be administered to prevent fermentation. For practical purposes it is sufficient to administer these antiseptics in doses large enough to make the stools odorless or to add bismuth and to continue to increase until this salt is found white in the dejections. If the nephritis is due to chilling of surface, the treatment ought to be commenced with a steam or hot air bath. Severe pain in the region of the kidneys demands hot fomentation or a Priesnitz bandage.

If edema is excessive and does not yield to the hygienic and dietetic treatment, the usual measures have to be taken—saline laxatives to produce watery stools—hot baths, hot packs, and hot air baths (the last can be conveniently administered with the patient in bed) using the simple and well known method with an alcohol lamp and bent tube.

Of the diuretics only those that are not irritating ought to be administered: the tartrates and acetates of sodium and potassium, lemon juice, infusion of juniper berries, infusion of digitalis, and benzoate of sodium.

The hygienic-dietetic treatment, the hydrotherapeutic measures, the saline laxatives, and the diuretics all are useful and sometimes necessary. During an acute attack all food must be withdrawn. Chloroform inhalations and hypodermic injections of morphine to stop spasm; venesection in suitable cases, and hot injections of normal salt solution may be tried—pilocarpine if the lungs are not seriously damaged.

The treatment of the chronic form does not materially differ, though rest and diet must be modified to conform to less vigorous demands.

The treatment of interstitial nephritis must vary according to the stage to which the disease has progressed. Knowing that the outset is insidious and slow and that it takes months and years to establish changes that interfere with normal health, it becomes of the highest importance to make an early diagnosis and not to wait for symptoms that already indicate an advanced state.

The hereditary and personal history furnishing etiological data, a pulse of more than normal tension, the apex beat lifting, the second sound over the aorta accentuated, and a tendency to catarrhs, will in many instances furnish an indication to begin treatment. More than that, in families with a gouty tendency the physician will act wisely in forming the habits of the children to save them from future troubles.

The first indication in all cases is of course to treat the cause, next to regulate the habits of the patient by employing a hygienic regimen. If the disease is not too far advanced these measures will be found sufficient to keep the patient in good health to the end of his natural life. The physician must prescribe them in each individual case, as they must necessarily vary.

There are, however, certain rules that ought to be observed in every instance. There should be a careful selection of clothes for protection against colds to which all nephritics are subject; a non-stimulating diet to lessen blood-pressure and to avoid irritation of the urinary apparatus. That is, the

amount of meat taken must be limited if possible to not more than once a day, and alcohol, spices, condiments, coffe, and strong tea should be avoided.

An out-door life as far as possible should be advised and rest and exercise must be well proportioned.

After the disease has advanced it is often of advantage, especially during acute exacerbations, to prescribe a milk diet for a time in order to procure rest for liver and kidneys. The milk diet, of course, is not curative in this form of Bright's disease. A change of climate is often found beneficial, the climate to be selected according to the idiosyncrasies of the patient.

In the more advanced cases the symptoms as they appear indicate the treatment. The tense pulse and the hypertrophied heart call for relief. The nitrites, nitroglycerin, and the iodides are the most reliable agents to be employed for this purpose.

The drugs must be given for the effect, that is, until the pulse has become soft. By lessening the arterial tension we lighten the heart's labor, counteract its hypertrophy, stimulate elimination, and make our patients comfortable by relieving dyspnea and a train of symptoms due to a serious interference with a proper nutrition of the tissues.

The treatment of uremic symptoms, headaches, rheumatism, neuralgias, gastrointestinal disturbances, convulsions, etc., is: (1) To prevent or limit the production of toxic substances by a carefully chosen diet, in the severer cases an occasional milk or buttermilk diet. (2) To favor elimination by skin, lungs, intestines, kidneys. (3) To burn up toxic substances by well selected exercise in the open air—of course in every case short of fatigue.

Blood-letting in the robust is sometimes very efficient to overcome a crisis. Thirty-two grams of blood contain more toxic matter than 100 litres of perspiration.

A combination of caffeine and sodium benzoate acts well as an eliminant if the kidneys are not impermeable. Cardiac tonics are only indicated if the heart has commenced to fail, the apex beat has become wavy and imperceptible, the pulse frequent, irregular, and thready. Digitalis must be given, if at all, with caution and its action on the heart as well as on the vessels must be remembered. Hydrotherapy furnishes us always with a very valuable adjuvant in the treatment of this affection, and the method is indicated (1) for the care of the skin; (2) for the treatment of chronic uremic conditions; (3) for the treatment of dropsy; (4) for the treatment of acute uremic attacks.

The care of the skin is best attained by ordering a warm bath twice or three times a week, duration one-half hour. The bath is best followed by one or two hours' rest in bed in order to avoid colds. All nephritics are predisposed to colds. The temperature of the bathroom has to be carefully regulated and the cloth used after the bath must be dry and warm. Such a treatment will frequently relieve the symptoms of uremic poison, headache, loss of appetite, indigestion, etc. Sometimes the sweat bath acts better. This is given in moderation by directing the patient to take a bath of a temperature of 40° C. (104° F.) and have him sweat in a dry pack after the bath. Instead, the hot air bath in bed or in the cabinet may be administered. A combination proves sometimes of greater advantage. For instance, first day, warm bath; second day, hot air bath; third day, rest. The hot air bath, like the warm bath, is best followed by rest in bed and not by a cold ablution as is the custom. The main indication for the sweat bath is edema. There can be no doubt that the edemas due to nephritis are favorably influenced by the sweat bath.

Thickening of the blood can be counteracted by directing the patient to drink freely during the bath. Whenever this bath is given the heart must be intact. Winternitz advises the sweat bath of the lower half of the body with an ice bag over the heart. This is the only condition in which cold applications have been advised. The bath ought not to last longer than from five to ten minutes; it is given as an excitant.

To encourage patients to drink large quantities of water with the idea of flushing the kidneys is useless and will do harm. The urine is copious and clear and the circulatory apparatus rarely intact. These patients as well as those suffering from chronic nephritis with edema ought not to be sent to mineral springs.

In conclusion, I again call attention to the necessity of an early recognition of the disease and the beginning of the treatment at an early stage. If this favorable time is allowed to pass, a cure becomes more and more impossible with each succeeding year, with each succeeding month, and relief of harassing symptoms more and more difficult; and after the disease has advanced beyond a certain point all remedies fail, the pulse loses its tension, the heart beats wildly, cerebral symptoms continue, and the patient dies. Far more frequently, however, patients are carried off by intercurrent diseases. This remote cause is hardly ever recorded in our mortality tables and in many instances it may not be recognized. It is on this account that the danger is often overlooked and that the statistics fall short of the truth.

We treat as most serious the first uncertain symptoms of tuberculosis, realizing that if left alone the patient, as a rule, will succumb within a few years. Yet, even certain symptoms of a beginning contracting kidney are neglected. It is true that frequently the end is far off at that time, nevertheless, it will destroy life with just the certainty that consumption does. It seems advisable that we regard the first symptoms with apprehension and commence treatment with all the vigor this insidious, slow, progressive, and most dangerous disease demands.

ELECTROMECHANICAL AND THERMIC REMOVAL OF LOCAL STASIS.*

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The induration associated with every inflammatory process—local stasis—is a beneficent provision of Nature only in so far as it is a safeguard, walling off infection. In all other than cases of inflammation associated with infection, stasis is the obnoxious feature of the process, calling for removal if treatment is to be successful.

The reason in all probability that a truth so patent when once called to the attention of reflecting clinicians, has not been long recognized is that no satisfactory means has been recognized in the past for its effectual removal. Massage, even in most skillful hands, is generally ineffective and so practically is mechanical vibration. The effect of a measure which by external pressure induces the removal of infiltration, is to produce thereby irrita-

*Read at the II. Congrès International de Physiotherapie, at Rome, Italy, October, 1907.

tion and to a degree maceration at the site of the stasis after its removal, and it does not leave the tissues in a tonic, but rather in an irritated condition which induces a relapse. On the other hand a modality which induces intrinsic activity in the structures of the part or region involved, effects the removal of plastic and fluid material without the induction of irritation, and afterwards leaves the tissues in a tonic condition which prevents recurrence of the induration.

In the early stage of inflammation the thermic effects of moist heat or radiant light and heat radiations may be very effective, if the administrations are kept up to the height of toleration for long enough periods—three to six hours. This method is the one *par excellence* in the early stage of superficial streptococcic or staphylococcic infections, because the early softening of the induration which follows permits the larger number of phagocytes present with the hypermia to invade the site of infection and destroy the germs, which are coincidently rendered inert by the action of the heat, or heat and light radiations—an effect opsonic as it were.

Applications of heat at first induce locally intense hyperemia, but when they are prolonged this is followed by profound anemia with contraction of the proximal tissues as of the fingers and arms of the washerwoman, to be followed a considerable time after discontinuance by a return to normal. This is demonstrated by keeping an affected finger in a water bath as hot as can be borne until pain or pressure has ceased, which may require a few hours. A felon or whitlow will invariably promptly disappear if this measure is adopted during the first 36 hours. Similar appropriate applications to suppurative tonsillitis, boils, or carbuncles are effective for the same reasons. In the deeper processes as in mastoiditis, otitis media, and suprapubic congestions, combined radiant light and heat radiations of great intensity, employed for periods of thirty or forty minutes, at least twice daily, maintaining dry or moist surface applications in the intervals, are as a rule effective when instituted early, and beneficial at any stage.

Radiant heat when administered from a source of high candle power, is more penetrating over a large area than local heat applications, as has been demonstrated by passing a thermometer into the female bladder or the penis and making first applications of dry heat and then radiant heat from a high candle power incandescent lamp in the same case. When radiant heat and light are employed the added effects of light increase the inhibitory effect upon pathogenic bacteria.

The electromechanical effects of the static modalities in removing "obnoxious" stasis, as Bier terms it, for the relief of inflammatory processes were first published by the author in a paper on "The Effects of Electrostatic Modalities in the Treatment of Hyperemia and Pain."* In this paper substantially the following observations were made: Pathologically considered, hyperemia arises from circulatory disturbances due to pressure, infection, traumatism, tissue necrosis, obstruction, or paralysis of the muscular coats of the vessels, it may become active or congestive, or exist as a passive hyperemia. "When a strong stimulus acts upon a vascular part" (say Landois and Stirling), "hyperemic redness and swelling occur. Microscopic observation shows that the capillaries and the small vessels are dilated and overfilled with blood corpuscles; simultaneously the velocity of the stream changes; rarely there is a temporary acceleration, more frequently it becomes slower. If the action of the stimulus or irritant be continued, the retardation becomes considerable, the stream moves in jerks, then follows a to-and-fro movement of the blood column—a sign that stagnation has taken place in other vascular areas. At last the blood stream comes completely to a standstill—stasis—and the blood-vessels are plugged with blood corpuscles. Numerous colorless blood corpuscles are found in the stationary blood. Whilst these various processes are taking place, the colorless corpuscles —more rarely the red—pass out of the vessels. Under favorable circumstances the stasis may disappear. The swelling which occurs in the neighborhood of inflamed parts is chiefly due to the exudation of plasma in the surrounding tissues."

If tissue proliferation is not deferred on account of the intensity of the inflammation, regeneration takes place in from eight to twelve hours, when it will be established permanently and without hypertrophy. If, however, the congestion is marked the stasis will persist, when repair may be long deferred.

The processes of regeneration following congestion are often delayed by one or more of the following causes: (1) The exciting cause may still be present. (2) The inflammation may be so intense that the swelling and stasis persist. (3) The lymphatics may from shock or pressure be rendered inactive and slow in removing the products of inflammation. (4) The exuded fibrin and degenerated blood cells may be deposited in the vicinity of structures not well supplied with lymphatics, as so often happens in the joints. (5) The presence of microorganisms which develop characteristic tissue change and degeneration, keep up irritation delaying restoration, and, if not removed, eventually destroy the function of the part. (6) There may be retained necrosed tissue, as dead bone. (7) In diathetic diseases, it does seem that irritants have either accumulated at the site of the inflammatory processes, or are being constantly added and not properly eliminated—defective metabolism. In both types of hyperemia the indications are apparent—removal.

That electricity of great potential, low periodicity, and small quantity removes obstacles to regeneration and promotes normal tissue proliferation by inducing profound contraction, tissue vibration, and cellular activity is demonstrated by clinical experience.

These results are due to the diffuse penetration with the induction of contraction of muscular and yellow elastic tissue at the site of the administration. The writer has demonstrated by personal tests and clinical results that these modalities do have these effects and has failed to derive the same effects from any other source to the same extent as from the static current with which we are able to control the periodicity and amplitude by regulating the spark-gap and speed of the revolving plates. No other interrupter or mechanical device has been constructed in connection with an electrical apparatus to modify all of the qualities of fineness of amplitude, and rate of change of potential, as the regulating spark-gap and speed control of the current output of the static machine; and no other apparatus has nor, we believe, will produce the same quality of diffuse and extensive tissue contraction as the static currents.

*Transactions of the American Electro-Therapeutic Association for 1901. (*Advanced Therapeutics*, March, 1902, page 166.)

That the electrical action of the currents, electrolytic, cataphoric, or electrochemical, are not essentially of value in relieving conditions of stasis, is evident from the fact that the best results are obtained from the static currents that possess those qualities in the least degree.

That there is an additional energizing, stimulating effect upon cell protoplasm derived from these currents which is not induced by vibration and is not alone local, there is abundant proof in the tonic condition of the tissues which hastens normal activities, including regeneration and restoration, when stasis and impaired metabolism are present.

The induction of activity, both local and general, contributes in all inflammatory conditions to the removal of local stasis and the restoration of normal tissue proliferation and regeneration.

Conditions of passive hyperemia associated with edema, as present with organic diseases of the liver, heart, and kidneys, and in cases of varicose veins resulting from thrombosis of the larger vessels of the extremities, offer little or no encouragement to electrostatic treatment. Those cases arising, however, from lost tone of the arterial or venous walls, obstructive functional derangement of some part of the glandular system, or from pressure, as from constipation in the cases of hemorrhoids, or cases of surgical edema following operations or accidents, are successfully treated in all but exceptional cases by the static modalities.

Early treatment greatly enhances the prospect of a prompt restoration to normal; it is the principle *a priori* in all cases. Degeneration and structural alteration preclude the possibility of complete restoration, and when they are found a longer period to induce a condition approaching normal is required.

When a gland, as the liver or pancreas, is the seat of hyperemia, the application of a metal electrode over the organ, and the employment of the static wave current, measured by as long a spark-gap as can be administered without causing too great pain, induces general contraction with successive release of the organ resulting, before degeneration is present, in complete restoration to normal. If hemorrhoids are to be treated employ a proper vacuum electrode with connections and arrangement as for the wave current, and held in position by an *x*-ray tube holder.

In the effects of the static modalities upon acute congestive hyperemia is to be found the greatest triumph of modern electrotherapeutics, early administration insuring prompt restoration in simple inflammation, removing stasis and restoring circulation with restitution.

Therapeutically, the static modalities meet in a most complete and satisfactory manner the essential indications in inflammatory conditions not characterized by the presence of microorganisms, or of some foreign or necrosed substance which cannot be promptly absorbed or forced out through the circulatory channels, when its use must be replaced by or follow the use of surgical intervention, the *x*-ray, radiant light and heat, or high frequency currents—one or more of them.

The modalities of particular value in influencing the conditions of stasis to which they are adapted are the wave and static induced currents, the static brush discharge, sparks, the direct vacuum tube current and spray, which produce in varying degrees the following effects:

(1) By the diffuse, penetrating qualities of the current, contractions are induced and stasis, the disturbing influence to the processes of repair, is removed.

(2) In acute cases, the exudate, which may have accumulated, is promptly absorbed and the tissues are softened so that the swelling may disappear during the first administration.

(3) In chronic cases, fibrin and other organized products of inflammation, which have exuded into the tissues, are gradually eliminated by the wave current when not too deeply situated, or better still by the direct static sparks.

(4) Local circulation is restored and active metabolism induced when the processes of cell proliferation and restitution are undoubtedly accelerated.

(5) When indolent or irritable ulcers or affections associated with the growth of bacteria are present in the skin, the surrounding induration is removed, the surface is stimulated, and superficially the germs are destroyed by the static brush discharge.

(6) Prolonged administrations of the brush discharge or spray produce superficial rubefacient effects.

(7) Pain disappears early if the current has softened the induration, and will not return if administrations are sufficiently frequent to prevent relapse and control the congestion and pressure.

(8) Throughout the economy, by the passage of the current from electrode to the surface of the insulated patient, functional activity is increased, associated with the restoration, if dormant, of the nutritive and secretory processes.

Since the first presentation of the effects of the mechanical action of the static modalities in the treatment of inflammatory stasis I have made numerous contributions bearing upon the same topic.*

In each of these contributions it has been shown that other forms of electrical energy or other modalities do not so effectively remove obstructive stasis as the static currents which exert without causing irritation the most diffuse, intrinsic, and energetic mechanical tissue contraction.

I have in accord with these principles during recent years evolved methods of treating inflammatory congested conditions, a few of the most important of which follow:

Prostatitis and seminal vesiculitis, as treated by me are among the most significant and important of my discoveries. While treating with the static wave current a case of intrapelvic neuritis with a metal electrode passed into the rectum, the writer and other physicians present observed that an enlarged prostate gland was very much reduced in size, softened, and rendered less sensitive by the administration. This observation led to the employment of the method the following year in a very severe case of prostatitis. The conditions under which this patient, 63 years of age, suffered, were extreme. The prostate was greatly hypertrophied and very sensitive to pressure. The patient was suffering from a very distressing dysuria and frequent micturition and was in a dejected and melancholy state of mind.

The method consists in passing into the rectum and in contact with the two lobes of the gland, a

*Electrostatic Modes of Application and Uses of the *x*-Ray, pages 72 to 76. Currents of High Potential of High and Other Frequencies, pages 104, 112, 122, and 134, and in the paper presented at the I. Congrès de Physiothérapie, held at Liége, on "The Mechanical Effects of Electricity in Therapeutics." *Archives of the Roentgen Ray*, March, 1906, page 216 and others.

straight metal electrode 15 centimeters in length, provided with an insulated handle, bulbous at the end and narrowing to the handle, the patient lying on his side upon a suitable reclining chair with his back towards the machine. The electrode, placed in contact, is held in position by the hand of the patient. A wire is connected from the handle of the electrode to the positive side of the static machine, the patient being insulated, and the negative pole of the machine is grounded by a direct metallic connection to the earth. The discharging rods of the machine are placed so that the balls are near together. After starting the machine the balls are gradually separated until the length of the spark-gap is such that the patient complains of discomfort, due to the contraction induced in the tender viscus. At this time the spark-gap may not be more than one inch in length, but before the end of the séance of twenty minutes, it will be gradually increased to three inches. The relief following this administration in the first case so treated was surprising. The sense of weight in the perineum was diminished and the patient felt greatly relieved. The same application was given on the four subsequent days, after which administrations were made every second day for three weeks, when he was discharged. Since this treatment that patient has had no relapse, has not been compelled to rise nights, and has suffered absolutely no discomfort from the prostate; he is now 69 years of age. The gland, which was very much enlarged, was reduced to about the normal size, there being but a slight hyperplasia which persisted, but has not increased during the past six years.

Since treating the above case, the author has treated 50 cases of prostatitis of all types and with the result of absolute unrelapsing cures in 40 cases. Of the others there has been, in every instance, a large measure of relief, but extensive hyperplasia in a few cases has precluded the absolute recovery of the patient.

In cases of vesiculitis, especially those specific in character, the direct vacuum tube current, employing a vacuum tube adapted to the surface, is effectual not only in relieving the condition of tenderness and removing the congestion and engorgement, but also in divesting the parts of infection. The same principles applied by Dr. Edward Titus of New York has in his hands been successful in the treatment of gonorrheal rheumatism. These results are being obtained by a large number of American confrères, which in this age of surgical enthusiasm is reassuring.

Dysmenorrhea and subinvolution, the success of my treatment, which was first discovered, as in the case of prostatitis, while treating another condition, is a method which assures a future solution of one of the most distressing conditions of the female sex.

A patient 33 years of age, whom I had under observation for treatment of neurasthenia, was suffering from a retroversion of the uterus and had from the first menstruation suffered from dysmenorrhea, was treated for the associated constipation, as was the writer's practice at that time, by the wave current applied in the rectum. At the first administration it was impossible to pass the metal electrode (the same one as is used in the treatment of prostatitis) into the rectum for more than two inches when it came against the fundus which lay back upon the rectal wall. It was also noticed that at the outset the patient could endure a current measured only by a very short spark-gap—one inch and a half in length—which was lengthened gradually to about three inches at the end of the first administration. Each day the electrode was passed higher and the spark-gap lengthened. Before the end of the first week of daily administrations the patient could at the commencement of treatment take a current with a spark-gap of three to four inches, closing with a spark-gap of five to six inches. The treatment was continued daily except Sundays for one intermenstrual period. At the end of this time, on the day when the patient had said she could not be in for treatment, the writer was surprised when she entered his office and said that menstruation had begun with absolutely no pain or discomfort. Furthermore, the prolapsed organ had assumed its normal position and this patient now, five years later, has had no recurrence of dysmenorrhea. The neurasthenia coincidently disappeared. Since making this accidental observation, the writer and his wife employed the method in upwards of 40 cases and uniform success in upwards of 90 per cent.; failure alone occurring in those cases in which there was an acute flexion or a congenital stenosis. An advantage, as will be readily observed, of this method of treatment is that the applications are made through the rectum, the uterus being thrown into active contraction by the wave current from the rectal site of application. A slow rate of interruption is employed giving periods of contraction and release. The amperage of the current is such that the patient can sustain no injury or bad effect from their administration, and the site frees it from all objection in the virgin. These effects are obtained uniformly by a large number of confrères, who have adopted the method, verifying my observation.

Urethral caruncles are uniformly relieved and cured by the applications of a glass vacuum tube or metal sound connected directly to the static machine as were the metal electrodes in the preceding cases, otherwise known as the direct method of vacuum tube administration. As large a tube or sound should be used as will pass readily into the urethra and the administration should be made for from twelve to fifteen minutes daily. The result is prompt relief and a cure in most cases within ten days.

Neuritis.—The combined method of treating all forms of neuritis by the wave current and the static sparks was first introduced and published by the writer who was assisting Dr. Wm. J. Morton when the static wave current was first published.

After locating the site of the inflammatory process, which can usually be done by applying short sparks along the course of the nerve, which will produce extreme pain over the affected area, over that region place a metal electrode connected directly with the positive side of the static machine, following the same technique of the wave current as described in the previous cases. The electrode should be large enough to cover the extent of the involvement and little or no larger.

In *sciatica* an electrode of fairly thick flexible metal should be used. A square of about 10 centimeters is usually the right size. A striking evidence of the fact that we have or have not a lesion at the place of application is noted when the spark-gap is opened by the verbal complaint or facial expression of the patient when a spark gap of one or one and a half inches is allowed to discharge. The pain produced is of itself a diagnosis of the presence and location of the lesion, for normally a current measured by a spark-gap of four to six inches, producing intense local muscular contraction, will cause no discomfort whatever. Twenty minutes' administration,

lengthening the spark-gap gradually as the patient will tolerate it, followed by a few well-directed, indirect static sparks to the same site, constitutes the treatment of sciatica. The administrations should be given twice daily for two or three days, in severe cases of acute sciatica or brachial neuritis, and afterwards daily to give uniformly good results. To the present time I have treated 40 cases of acute sciatica of not more than two weeks' duration, in all of which the lesion has been located below the sacro-sciatic notch, with the result of a complete cure in all within ten days. In some of the cases which were treated very early a cure followed a few administrations.

In chronic sciatica it is often necessary to keep up the same treatment for several weeks, or even months, until all the exudate that is pressing upon the nerve structures has been absorbed. I pay but little attention to the pains along the course of the sciatic or the course of other affected nerves, making application only at the site of the lesion, unless for the nutritional effects or moral effect upon the patient, when sparks may be applied along the course of the nerve and over the atrophied muscles of the limb.

In *brachial neuritis, herpes zoster, and intercostal neuritis,* the same method is uniformly successful; also in the intrapelvic cases, which latter, however, require a much longer course of treatment because of the inaccessibility of the nerve lesion.

In *tic douloureux and Bell's palsy*, the writer's methods are practically the same as in the treatment of neuritis. Place a small electrode of pliable metal over the region of distribution of the trifacial nerve or the lesion of the branch affected. The patient should be seated in the chair upon the insulated platform with the hand supporting the electrode against the surface of the face, the elbow resting on a support, such as the arm of the chair. Administered in this way, it is only possible to use a maximum spark-gap of from one-half to three-fourths of an inch in length. The séance, which in the author's experience with the wave current is made uniformly for twenty minutes in the treatment of inflammatory conditions, is followed by a thorough application of the static brush discharge to the extent of producing active hyperemia over the site of the lesion. By this method cases of tic douloureux of not more than two weeks' duration terminate promptly in a cure in a few days. The treatments are given twice daily at first and then on alternate days until the pain will not return for an interval of more than twelve hours.

I have treated six cases of acute tic douloureux, five of not more than two weeks' and one of six months' standing, curing them all within the period of ten days. The result in the case of six months' duration was phenomenal, and the promptness of the relief quite unexpected. Chronic cases of tic douloureux in which organic exudates have formed within the bony canals are not amenable to this plan of treatment. I have, however, succeeded in some chronic cases by treatment with the *x*-ray.

Facial paralysis of peripheral origin, taken early, responds promptly to the same treatment as for tic douloureux.

Anterior poliomyelitis.—Looking at this condition from the point of view of a pressure paralysis with degeneration due to hyperemia or congestion of the cord, I, seven years since, instituted a method of treatment by applying the wave current over the portion of the cord corresponding to the paralyzed parts, and have found that in early cases the relief is salutary, the patients being restored in an incredibly short time, the improvement beginning usually with the first treatment. The little ones will bear the wave current with a spark-gap four to twelve inches long from a static machine having eight revolving plates, sufficient to induce an active effect upon the cord structures. An electrode not more than one inch in width is applied. It is customary in these cases to follow the static treatment with a nutritional administration of mechanical vibration to the affected parts. Cases of anterior poliomyelitis of from one to four months' standing have been greatly benefited by this plan of treatment; but it is plainly impossible to obtain a perfect result after sufficient time has intervened to allow destruction of the central neurons.

In cases of *tabes dorsalis* and other conditions of spinal nutritive and congestive derangement the employment of the static wave current with a narrow spinal metal electrode and employing a very long spark-gap—10 to 12 inches in length—has been productive of remarkable results when administered alone or in connection with the static sparks as instituted by Prof. Morton. I was the first to employ the wave current in this class of cases and feel certain that the very satisfactory results obtained in the large number of cases treated have been largely due to the effects of the static wave current and the general administration of the static sparks. In my judgment in this class of cases daily treatment for one month, followed by treatment on alternate days, is in most cases capable of bringing the disease to a *status quo* within a period of one year, controlling the pain within the first weeks and improving the locomotion to a marked degree, and in my experience, uniformly correcting the distressing bladder symptoms. I have effected these results in all cases which I have been able to keep under observation.

The effect of this current, administered as suggested, upon the spinal cord, is evidently to restore nutritive processes and to overcome acute or low-grade inflammatory conditions present in the structures. The same has been true in my experience in the treatment of conditions of myelitis and traumatic injuries involving the spinal cord, and in all traumatic congested conditions in which the spinal column is intact and in normal relation.

Traumatic arthritis, including sprains and conditions of uncomplicated synovitis, is remarkably amenable to this method of treatment. The anterior surface of the joint is covered with an electrode of flexible metal, avoiding contact with the flexor muscles of the leg or the gastrocnemius or soleus of the ankle joint because they are thrown with a mild current into contraction. The wave current is then administered followed by sparks over the soft structures or openings of the joints, avoiding the application of sparks to the bony prominences, which cannot respond, and to which applications are painful as well as ineffective.

Uncomplicated sprains of the joints are absolutely cured by this method in from three to five days and cases of synovitis involving the joints, of not more than two years' standing have in my experience invariably been cured in periods ranging from one to three months.

In *chronic synovitis* treatment should be administered daily for a month and later on alternate days until a cure is obtained. These results have been obtained by me in a large number of cases and have been verified by numerous other observers who have adopted the method.

The same method of application applies to the

treatment of *rheumatoid arthritis*, and with success in early cases, in which there has been no destruction of tissue. Attention must be given coincidently to any other physical condition which is impairing the general health; for rheumatoid arthritis is not curable in patients in whom exhausting pelvic conditions, nephritis, or some other enervating process is present. I have been successful by this method in the treatment of seven cases of rheumatoid arthritis, and one of Still's disease (treated with the wave current only), and have greatly improved the condition in many other advanced cases.

The above methods and results have demonstrated the great value of thermic administrations and the static modalities in the treatment of congestion, as based upon the principles incorporated in this paper, and I earnestly commend them to the members of the profession who are employing physical measures and to the profession at large.

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INTEGRITY OF STEREOGNOSTIC FUNCTION AND OF ALL FORMS OF SENSATION IN A CASE WITH A LESION OF THE LEFT PARIETAL LOBE.*

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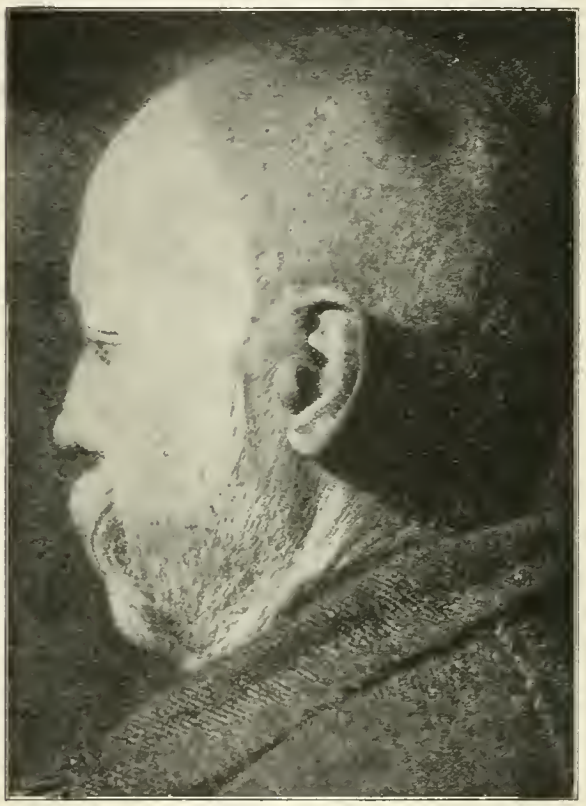
Loss of stereognostic sense resulting from an organic disease is, according to the majority of observers, due to a lesion in the parietal lobe. There are abundant examples in the neurological literature supporting this contention. On the other hand there are also in existence facts which contradict the above view. Bonhoeffer,[1] for example, reports a case of a localized lesion in the middle third of the ascending frontal convolution with astereognosis. In Chipault's case[2] there was a lesion of the frontal portion of the Rolandic area. Verger and Abadie,[3] in one of their cases, found a sarcoma of the dura which compressed the parietal lobe and the angular gyrus so that the cortex was markedly flattened. In this case the general sensibility and the stereognostic sense remained intact. In Pierret's case[4] a softening of the parietal lobe produced only hyperesthesia which later on disappeared. Wernicke,[5] in a case of astereognosis of the right hand found a lesion of the middle third of the central convolutions. P. Marie and F. Moutier[6] report a case of a man aged 80, who during life could not distinguish objects by touch. Autopsy showed a bilateral softening of the lower surfaces of the temporo-occipital lobes.

These few examples, I believe, prove that there are cases of astereognosis with involvement of portions of the brain other than the parietal, also cases with integrity of the stereognostic function and lesions of the parietal lobe. The question, therefore, of localization of astereognosis cannot be at present satisfactorily settled. The case I am about to report is an additional proof of the fact that the post-parietal lobe is not exclusively the center for the stereognostic function. It also speaks against the view that a subcortical lesion causes persisting cutaneous anesthesia. Some hold the view that the limbic lobe is the sole cortical seat of the representation of cutaneous sensibility. Horsley and Schäfer also showed that circumscribed areas of anesthesia sometimes resulted from experimental lesions of the limbic lobe. The destruction of a large part of the parietal lobe in this case and the integrity of the remaining brain tissue are perhaps not against the limbic lobe view. The history is as follows:

N. L. G., aged 58, shot himself with a 22-caliber revolver on January, 1907, the ball entering the skull on the right at a point corresponding to the junction of a horizontal line drawn on a level with the roof of the orbit and of a vertical line drawn parallel with the mastoid process. The bullet was never extracted. The patient has no recollection of the attempt at suicide nor does he remember any event for some months following the shooting. All events prior to the shooting are easily recalled by him. He therefore suffers from anterograde amnesia.

His mentality in general is slightly impaired. It is difficult to concentrate his attention on any one subject for any length of time, but there is no confusion or incoherence. The patient orients himself well, takes an interest in everything, but there is a



From a photograph showing the site of operation.

delay in his responses to stimuli. Examination showed a scar on the right temple (place of entrance of the bullet). There was no palsy of the extremities or of the face. The reflexes, motor power, and sensations were all normal and equal on both sides. The speech was unaltered. He could hear, understand written or spoken words and he could write. He complained of vertigo, but there was no headache, insomnia, or vomiting. Since the accident the patient has had several attacks of loss of consciousness with convulsive movements of a generalized character. In none of the seizures unilateral spasms could be detected. The eye examination was practically negative with the exception of some senile choroidal degeneration and a high compound hyperopia.

The *x*-ray examination showed the bullet situated in the left parietal regions. As there was no evidence of meningeal irritation I supposed the bullet was beneath the cortex. In view of the involvement

*Read and patient exhibited before the Philadelphia Neurological Society, December 23, 1907.

of the parietal region a very careful test was made in regard to sensations. The sense of touch, of pain, temperature, and stereognosis were repeatedly examined by me before the operation and found to be normal and equal in the upper extremities.

Dr. J. C. Da Costa, who referred the patient to me for an opinion, operated upon my suggestion and the following is the report which he has kindly sent me:

The operation was performed on the left parietal lobe. The bullet was about half an inch from the cortex. The tissue surrounding the bullet was sclerotic except at one point in which there seemed to be a tear in the wall, a portion of brain tissue was adhering to the bullet which was free in this cavity. The cavity contained a material that resembled bloody serum. The opening of the skull was made by trephining. Careful palpation indicated an area of hardness. The cavity was opened with a knife and the bullet was found lying loose within the cavity; it was easily extracted. There was a great deal of venous bleeding from the walls and packing of the cavity with iodoform-gauze was necessary."

During the first several days after the operation there was quite a marked elevation of temperature. The patient gradually improved and made an uneventful recovery.

During convalescence I made repeated examinations for all forms of sensations. Changes of the latter were expected by me especially after the operation, as the cortex of the parietal lobe was considerably destroyed, but at no time could I detect the least alteration in any of the senses nor in the stereognostic function.

The patient's answers were prompt, normal, and equal on both sides. At this time the examination was exceedingly satisfactory, as after the operation there was a marked improvement in the mental condition. Incidentally I may mention that there was no recurrence of the epileptic seizure and the vertigo disappeared.

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FRACTURES OF THE TIP OF THE OLECRANON PROCESS.

By FRANK E. PECKHAM, M.D.,

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Since the Roentgen rays have come into use in connection with the treatment of fractures, it is no longer possible to treat such conditions by rule, but it is the duty of the surgeon to make an *x*-ray study of each case just as he makes a careful clinical examination. Thus there is presented a definite *mechanical* problem of getting two ends of bone into apposition or as near apposition as is possible. The mechanical problem includes not only the ends of bones but also (of very great importance) the traction of the different muscles and ligaments acting to pull the ends away from each other or one by the other. In the text books general rules are laid down for the treatment of all of these conditions, but as time goes on it is becoming very evident that each fracture must be studied as an entirely separate problem. For example, in fractures of the olecranon process, the rule laid down in the books is to put the arm up in complete or nearly complete extension. This is all right perhaps for most of the fractures and especially in complete fractures with *separation* of the fragments. There are cases, however, where the tip of the process is fractured and instead of a separation, the *x*-ray shows a riding by of the fragments, the tip being pulled upward and backward by the triceps muscle. From a study of the *x*-ray plate it is an easy matter to see that to put the arm in extension would aggravate the deformity and also that by flexing the forearm on the arm, leverage is created, and that with the fragment held as a fixed point by the triceps muscle and ligamentous attachments, there is a degree of flexion, varying in each case, which will bring the tip of the olecranon into perfect apposition with the other fragment. The two cases

Fig. 1.—Showing the fragment after reduction in Case I.

to be reported will illustrate this fact very nicely.

Case I.—A child nine years of age sustained a fracture of the tip of the olecranon of the left elbow in January, 1907. No *x*-ray was obtained before the reduction. This case was in the practice of Dr. Edward S. Brackett of Providence, who, after a careful clinical examination, decided that whatever the exact nature of the fracture, the apposition was best in the position of acute flexion. The *x*-ray picture showed such good apposition that it was deemed best to leave it in that position. See Fig. 1.) Without going into details of the early removal of bandages for manipulation, etc., it may be said at once that the result was absolutely perfect, both anatomically and functionally.

Case II.—A child of seven years of age, who had sustained a fracture of the tip of the olecranon of the left elbow, was under my care in September,

Fig. 2.—Showing fragment after reduction in Case II.

1907, at the St. Joseph's Hospital. The *x*-ray picture showed the small fragment pulled decidedly upward and backwards and it was evident that a flexion of about a right angle would probably bring the tip into good apposition. As is customary in my practice, a special internal angular splint was made, accurately fitting the arm; the arm was then placed at the proper angle on the splint by Dr. Hammond, the child being under complete anesthesia. The *x*-ray plates (Fig. 2) show the fragments to be in well-nigh perfect apposition. Without going into unnecessary details of early removal of splint, for manipulation, etc., Dr. Hammond, who had entire care of the case, obtained a perfect result, both anatomically and functionally.

The object of this short paper is not to urge the splinting of all elbows at an angle, either acute or obtuse, but it is to urge the careful clinical and *x*-ray study of each individual case and then treating accordingly.

Hygiene of Smoking.—Lieberman and Davidoes of Vienna, who have been investigating the action of nicotine on the body, have found that when rapidly smoked tobacco gives off more tarry substances in the smoke than when combustion is slower, and advise users of the weed to be deliberate in their enjoyment of it.

For an Esperantist State.—Professor Gustave Roy, an enthusiastic Parisian Esperantist, has announced his intention of endeavoring to convert into an Esperantist country a small commune on the outskirts of Belgium named Moresnet. It is seventy acres square and contains about 3,000 inhabitants. It is near the transcontinental railway lines from Constantinople to Ostend and London and from Madrid to St. Petersburg. Every one in Moresnet is to learn the universal language, so that travelers who will stop there may be understood, and Professor Roy hopes that from this little nation the whole world will be "Esperantized."

Feigned Eruptions in a Hysterical Patient.—The case is reported by C. J. White, whose patient was a coachman of forty years. In December, 1905, he burned his right middle finger while shaking down his furnace. The wound became septic, involving the bone, and in consequence the distal and middle phalanges were amputated. The stump healed in the course of six or seven weeks, but almost immediately became sore again, thus necessitating a second amputation at the metacarpo-phalangeal joint. In six weeks this second wound healed when there appeared at its site a thick crust, the size of a five-cent piece. At the same time a major portion of the back of the right hand and a half of the extensor surface of the forearm became involved by diffuse crusting lesions similar to the one just described. In November, 1906, the arm was incised in the anterior axillary line and the nerve stretched. After this operation there was quiet until some months later, when the man noticed itching in the arm and there appeared small red spots on the skin which, before attaining the size of a large bean, became covered with brown crusts and then slowly developed in size until they reached an area some two inches in long diameter. On examination the arm showed ten round or oval lesions covered with thick brownish crusts with depressed centers and concentric ridges, like the lamellation of an oyster shell. Around these crusts appeared a fine halo of pinkish skin, while from the lower edges of several of the larger lesions could be seen one or two linear streaks of slightly ulcerated, greenish or pinkish-red skin terminating in drop-like enlargements. These linear ulcerations were very important from a diagnostic point of view, and the author believes that they correspond well with the course of a caustic liquid influenced by gravity. On the dorsum of the right foot there were, in addition, several small lesions covered with blackish crusts. The crust at the site of the second phalangeal operation was blacker than the others and presented a deep crateriform surface, while from underneath pus could be expressed. This lesion, the man stated, had persisted from the time of the second excision. Physically the patient was well except for certain nervous symptoms which were highly interesting in their bearing on the case. Over the whole right half of the body the man was anesthetic, even the bulbar conjunctiva and nostril being insensitive to severe irritation. Motion of the right arm was much impaired, while the right patellar reflex was decidedly exaggerated.—*Boston Medical and Surgical Journal.*

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THE RELATION OF OPSONIC TO *X*-RAY THERAPY.

OPSONIC therapeutics has been conspicuously successful in certain diseases which have also been treated with equally conspicuous success by the *x*-rays. Examples of such diseases are lupus, acne, and glandular tuberculosis. The fact that the *x*-rays are of service in diseased conditions diverse in their pathology and causes, and that their antiseptic power is a negligible quantity, has led many observers to believe that the rays act by stimulating the production of opsonins in the body fluids. With this idea in mind, A. W. Crane (*American Journal of the Medical Sciences*, March, 1908) made cultures from several pustules in a case of acne and found the infectious agent was the *Staphylococcus pyogenes aureus*. He estimated the patient's index to this germ and then began *x*-ray treatment. After one exposure to the rays the index rose on each of the two succeeding days; on the fourth day there was a slight fall, so that a second treatment was carried out, the index again increased, and the acne disappeared a few days later. The patient evidently acquired, by some action of the *x*-ray, a specific immunity to the organism that caused the acne. Several cases of lupus, and one of tuberculous glands of the neck with low tuberculo-opsonic indices, were treated in the same way, with similar opsonic index changes and cure. In all the cases the *x*-rays ceased to raise the index when the infectious agent was presumably eliminated. In the patient with acne, who apparently had no tuberculous lesion, the opsonic index to the tubercle bacillus remained unchanged, showing that the *x*-rays do not appear to stimulate the production of opsonins for bacteria in general, but only for those in living tissues brought directly under their influence. He acquired good results with but few treatments, which he attributes to the careful timing of the latter, the opsonic estimation enabling him to give each treatment just as the positive phase began to decline.

Wright has shown that large doses of bacterial substances plunge the patient into the negative phase from which he may never recover. Crane thinks it quite possible that too many *x*-ray treatments have the same effect and that the sudden relapses, which *x*-ray operators sometimes see, might be explained in this way. He concludes that the repetition of exposures, as far as possible, should be governed by the duration of the negative and positive phases, and that in affections in which the disease-producing agent is as yet undetermined, one should be governed by analogy with those cases in which opsonic estimations can be made. It follows that as a rule the treatment should not be repeated oftener than twice a week, and probably usually at less frequent intervals. The immunizing substance set free under the influence of the *x*-rays is of necessity autogenous, which, Crane holds, is an advantage over opsonic therapeutics in which the vaccine is often made from a stock culture instead of from the bacteria from the patient. Furthermore, in cases in which the bacteriological cause is as yet unknown, or in which the disease-producing agents are not bacteria, the *x*-rays are nevertheless applicable.

Crane admits that he has carried his deductions and conclusions far beyond the limits warranted by the number of cases he reported. Nevertheless, he has opened up a fertile field for therapeutic endeavor.

LUDWIG'S ANGINA.

LUDWIG, in 1836, described a condition which he considered a morbid entity and which since that time has been designated as angina Ludovici. Regarding its general course and symptoms most observers agree, but various opinions exist with respect to its etiology and pathology, none of which have been generally accepted. In the February and March numbers of the *Annals of Surgery*, T. T. Thomas shows why and how this rapidly fatal infection acquires so dangerous a character. While the infecting organism is usually the streptococcus, alone or mixed with other organisms, he does not believe that the associated septic intoxication is more severe than that which results from streptococcus infections of the same grade, in other parts of the body. He holds that the dangerous character of this condition is due to its peculiar location, which favors dangerous extension to the respiratory tract. This opinion he bases upon a careful dissection of the floor of the mouth and upon the clinical and autopsy reports of over one hundred cases.

In ninety per cent. of the cases the cellulitis originated externally in the submaxillary region and not in the sublingual region, *i.e.* in the mouth. The primary focus in the great majority of cases was an insignificant lesion in the mouth, such as a carious tooth, whence the submaxillary gland became infected *via* the lymph vessels. Thomas showed that between the middle constrictor of the pharynx and the posterior border of the mylohyoid a deficiency exists in the muscular diaphragm which separates the mouth from the neck. The greater part of this deficiency is occupied by the submaxillary salivary gland which here projects into the floor of the mouth and is adjacent to the sublingual gland. The connective tissue in the submaxillary fossa is therefore directly continuous with that of the floor of the mouth. It is thus demonstrated how readily a cellulitis of the submaxillary region, regardless of the kind of infection, can become a Ludwig's angina by extension of the infection to the sublingual region and pharynx. When once the sublingual region and pharynx are involved the

anatomical conditions favor an early invasion of the larynx, since the direction of least resistance is backward.

Being convinced that the primary cellulitis is in the submaxillary region, Thomas warns against an incision through the mouth except for the relief of excessive swelling. He advises the submaxillary incision, and if frank suppuration is not found here, the mylohyoid muscle should be divided and the sublingual tissues exposed. On account of the added irritation of a general anesthetic to an already dangerously inflamed larynx he advises local anesthesia.

QUANTITATIVE ALBUMIN ESTIMATION BY ELECTRICAL CONDUCTIBILITY.

In 1887 Arrhenius demonstrated that the conductibility of electrolytes was diminished in the presence of a nonconductor. With this principle in mind and remembering that albumin was a nonconductor, Wassmuth devised a method for the quantitative estimation of albumin in urine. Under the supervision of Senator, R. Kohler recently (*Zeitschrift für klinische Medizin*, Volume 65, Nos. 1 and 2) tested the practicability of Wassmuth's method. Three hundred cubic centimeters of albuminous urine is brought to room temperature and acidified with one or two drops of a fifty per cent. solution of acetic acid. Then the conductibility of one-half the amount is estimated, while the albumin is removed from the other half by precipitation by heat. After filtering and making certain that all the albumin is precipitated, the conductibility of the filtrate is estimated. This ascertained, it is easily figured out in terms of percentage by how much the albumin reduced the conductibility of the urine. Kohler found that this latter figure divided by 16.6 would represent the percentage of albumin in the urine. Thus, if .009 represented the conductibility of the albuminous portion of the urine and .01 the conductibility of the portion from which the albumin had been removed, we can readily see that the albumin reduced the conductibility by ten per cent.; ten divided by 16.6 would then represent the percentage of albumin in the urine. Kohler found that the results thus obtained compared favorably with those obtained by Esbach's method, the one usually employed in the quantitative estimation of albumin. A decomposed urine, a diluted urine, or the addition of too much acetic acid interfered with the accuracy of the results.

Although Wassmuth's method permits us to estimate the amount of albumin in from ten to fifteen minutes, it is no more accurate than Esbach's, is more complicated, and requires an expensive apparatus. It is therefore impracticable for general use especially as an occasion seldom arises when we cannot wait twenty hours for a result, the time required with Esbach's albuminometer.

A New Method of Treating Syphilis.

Consideration of the fact that the apparent causative agent of syphilis, *Treponema pallidum*, is believed by competent observers to belong to the group of the protozoa, has led to a renewed interest in the method of action of mercury in the treatment of the disease. One assumption is that this agent, while not directly destroying the specific organisms, is yet able to damage them to such an extent that they readily fall a prey to the antibodies formed by the patient. Others hold that mercury acts chiefly in a manner comparable to that of the chemical catalysts in accelerating the reactions by which the spirochetes are destroyed, or through its property of encouraging the accumulation of leucocytes. Lenzmann (*Deutsche medizinische Wochenschrift*, March 5, 1908) is more inclined to the belief that the action on the microorganisms is a direct one, not unlike that exerted by quinine on the malarial plasmodium, and he has accordingly used quinine in fourteen cases of syphilis in various stages, in twelve of which the spirochete had been demonstrated. The results were sufficiently striking to encourage further trials, not with the view of displacing mercury from its well-earned place in the therapy of syphilis, but for the purpose of supplying what may be a useful adjuvant in certain cases. The mode of administration was by the intravenous injection of from three to eight c.c. of a 10 per cent. solution of quinine hydrochlorate in 0.75 per cent. salt solution, the injections being repeated at intervals of several days, until from four to five grams of the drug had been administered in the course of two or three weeks. In some cases the addition of nucleinic acid was used in conjunction with the quinine with the idea of stimulating the formation of leucocytes.

Mixed Infections in Typhoid Fever.

Although the occurrence of various severe complications in typhoid fever which cause the course of the disease to deviate from the typical form has frequently led to the suggestion that these were possibly due to a secondary blood infection with other organisms, the bacteriological proof of this supposition has not often been successful. Port (*Deutsche medizinische Wochenschrift*, March 26, 1908) describes four cases of his own, however, in two of which the *Staphylococcus pyogenes* was found in the blood as well as the typhoid bacillus, and in the others the colon bacillus and a diplococcus respectively. He has also found in the literature reports of thirty-eight similar cases, and is of the opinion that they occur more frequently than is commonly supposed, particularly in the so-called fulminating cases. Severe cerebral symptoms, excessively high temperatures, jaundice, petechiæ, chills, high leucocyte counts, and endocarditis are all manifestations that indicate the possibility of such a double infection and render a careful study of blood cultures desirable. In making this it is wise not to rely on the useful bile media alone, for the addition of this enriching agent inhibits the development of many other organisms and makes it easy to overlook their presence. Investigations in this direction have a practical bearing on the prognosis, for all the recorded cases of generalized mixed infection have ended fatally.

The Surgical Treatment of Hypertrophy of the Tonsil.

Hyperplasia of the tonsillar tissues, with its unpleasant secondary results, is so common that a generally applicable means of treatment calculated to correct the difficulty is much to be desired. There is reason to fear that the operative procedure commonly employed often fails of its purpose, the

cicatrical tissue that forms after tonsillotomy serving to interfere with the normal functions of the gland and thus impairing rather than fortifying its powers of resistance and defense. In the opinion of Dr. Chevalier Jackson, writing in the *Annals of Surgery* for December, 1907, few operations in surgery are so generally performed badly as those upon the tonsils. He considers tonsillotomy an easy but unjustifiable operation, while ideal tonsillectomy is an exceedingly difficult one. In his opinion the tonsil and its capsule should be dissected out completely down to its muscular bed, such hemorrhage as occurs being controlled by twisting the bleeding vessels by means of a long hemostat. Oozing from the wound may be simulated by bleeding from an open vessel concealed behind the anterior pillar of the fauces or retracted into the remaining tissues and covered by a layer of clot. Bleeding from vessels too small to be twisted or ligated can be checked by the insertion of a gauze plug in the wound between the pillars. Dr. Jackson prefers to use scissors in operating, exerting traction on the top of the tonsil with forceps and after the first incision enucleating the gland in its capsule by blunt dissection. The anterior pillar is elevated by means of a special retractor and the blood-vessels are twisted with the aid of a hemostat. If the bleeding persists or recurs and threatens to be fatal, ligation of the external carotid should be undertaken.

Puerperal Infections.

It has long been recognized that in certain cases of puerperal sepsis local treatment of the uterus by curettage or even by gentler measures is decidedly contraindicated. More extensive resort to bacteriological examination of the uterine and vaginal discharges, and particularly the making of blood cultures, have shown that these were instances of true septicemia due to a streptococcus. Veit (*Berliner klinische Wochenschrift*, March 23, 1908) emphasizes the importance of the examination of the lochia in all cases and states that the vaginal secretion suffices for the purpose of making cultures on Schottmüller's blood agar medium. If the presence of the hemolytic streptococcus is discovered by this means all local treatment must be interdicted, as manipulations about the internal genitals always involve the risk of producing new lesions likely to be the portals of entry for the germ into the blood. Blood cultures should be made, and if positive, general measures such as the injection of antistreptococcus serum, infusions of salt solution, and alcohol should be administered, though the outlook is dubious in these cases. The value of operative treatment by ligation of the pelvic veins is also questionable when there is a blood infection. On the other hand, if the elevation of temperatures is due to the presence of saprophytes and decomposing material in the interior of the uterus, this organ should be stimulated to contract, and if the symptoms persist, energetic local treatment should be instituted. In these cases the prognosis is usually good, but the uterus must be promptly emptied and disinfected, while antitoxin is wholly useless.

Nervous Diseases Among Soldiers in Time of War.

In the beginning of the Japanese war the Russians had made no special preparations for the care of the insane, and not until the number of patients afflicted with nervous diseases in the various general hospitals reached 500, was a special psychiatric hospital established. All the patients were then sent to the latter hospital from where they were sent back to Russia if they had not improved in two weeks. Two smaller hospitals were established along the home route to receive patients who became worse on the way to Russia. In the *Allgemeine Zeitschrift für Psychiatrie* (Volume LXIV, Nos. 2 and 3), Avtokratov gives a detailed description of the psychiatric hospitals and the mode of transporting the patients. Over 1,600 soldiers were afflicted with some nervous ailment, *i. e.* three and one-half per cent. of all the sick in the army, and the mortality was twenty-one per cent. Among the officers alcoholism heads the list of diseases, then come paresis and neurasthenic psychoses. It appears that latent psychoses or those with only prodromal symptoms develop rapidly during war; thus epilepsy developed in persons who never had any convulsions previous to the war. The fact that in peace paresis, and in war alcoholism, heads the list of nervous diseases among officers, he attributes to the fact that even small quantities of alcohol are injurious when the individual is in a stage of excitement and overexertion; in fact officers developed alcoholism who, previous to the war, had never indulged in alcoholic beverages. The greater majority of the patients were improved at the end of a week and were cured in a month. Avtokratov's report is of great value, inasmuch as it also points out all the errors made, and should, therefore, prevent many mistakes in future wars.

News of the Week.

State Board of Charities.—The State Board of Charities has reelected President William R. Stewart and Vice-President Dr. Stephen Smith, both of this city, and reappointed Commissioner Denis McCarthy of Syracuse a member of the State Probation Commission from the State Board of Charities. The board has also appointed James H. Foster of this city inspector of records and accounts in place of Richard W. Wallace, who has been promoted to be superintendent of inspection.

Banquet to Dr. Koch.—At the dinner in honor of Dr. Robert Koch held at the Waldorf-Astoria last Saturday night about 400 guests, including many of the best known medical men of this and other cities, were present. Dr. Carl Beck presided, and among the speakers were Dr. Koch, Dr. W. H. Welch, Dr. Abraham Jacobi, and Mr. Andrew Carnegie, who has recently given the sum of 500,000 marks for the Koch institute to be founded in Berlin for the study of tuberculosis. Dr. Koch early in the week left for Niagara Falls, and after stopping in Chicago and St. Louis, will go on to Japan.

The Medical Club of Philadelphia held a reception on the evening of April 10 in honor of Dr. Samuel G. Dixon, Health Commissioner of the State of Pennsylvania, Dr. Lewis S. Pilcher of Brooklyn, and Dr. Robert Koch of Berlin. Dr. Dixon spoke of the efforts of the State to suppress tuberculosis, especially by means of dispensaries and camps, of the great saving of life effected by the free distribution of diphtheria antitoxin among the poor, and by measures taken to prevent the pollution of streams and waterways. Dr. Koch was unable to be present, but sent a letter. Dr. Pilcher paid a tribute to the great names recorded in the annals of Philadelphia medicine.

Water Supply Conference.—An interstate con-

ference of Water Commissioners was held in this city last week at the instance of the New York State Water Supply Commission, with the object of initiating a national conference to which may be called members of all the Water Supply Commissions of the various States and Territories, together with the Forestry and Inland Waterways Commissions. Steps were taken for the formation of a national conference and the scope of such a project was discussed. Another matter considered was the question of joint action by the States of New York, New Jersey, and Pennsylvania, for the control of the Delaware River, which forms the boundary line between these States, and the prevention of floods. It was also stated that an abundant supply of water for New York City could be obtained at a small expense and within a short period if the authorities of Connecticut and New York could agree upon a plan which would permit this city to tap the Housatonic River and its tributaries.

Nomenclature of the Proteins.—By order of the American Physiological and American Biochemical Societies a series of recommendations have been published in regard to the nomenclature of the protein bodies, which are in part as follows: First: The word *proteid* should be abandoned. Second: The word protein should designate that group of substances which consists, so far as at present is known, essentially of combinations of *a*-amino acids and their derivatives, *e.g.* *a*-amino-acetic acid or glycocoll; *a*-amino propionic acid or alanin; phenyl-*a*-amino propionic acid or phenylalanin; guanidin-amino valerianic acid or arginin, etc., and are therefore essentially polypeptids. Third: That the following terms be used to designate the various groups of proteins: I. Simple Proteins.—Protein substances which yield only *a*-amino acids or their derivatives on hydrolysis. This group includes albumins, globulins, glutelins, alcohol-soluble proteins, albuminoids, histones, and protamines. II. Conjugated Proteins.—Substances which contain the protein molecule united to some other molecule or molecules otherwise than as a salt. This group includes nucleoproteins, glycoproteins, phosphoproteins, hemoglobins, and lecithoproteins. III. Derived Proteins.—1. Primary protein derivatives. Derivatives of the protein molecule apparently formed through hydrolytic changes which involve only slight alterations of the protein molecule. This group includes proteins, metaproteins, and coagulated proteins. 2. Secondary protein derivatives. Products of the further hydrolytic cleavage of the protein molecule. This group includes proteoses, peptones, and peptids.

Requirements for Admission to the College of Physicians and Surgeons.—The following changes in the requirements for admission to the medical department of Columbia University have been announced by Dr. Samuel W. Lambert, Dean of the Faculty: The present requirements for admission to the first year class will be continued without change up to, and including, the admission of the class which enters in September, 1909, and thereafter the requirements for admission to the first year class will be as follows: All candidates for the degree of Doctor of Medicine desiring admission to the first year class must present (1) the Medical Student Certificate of the Regents of the University of the State of New York, and (2) also one of the following qualifications: (*a*) The completion of not less than two full years of study in an approved college or scientific school, which course must have included instruction in the elements of physics, inorganic chemistry, and biology; or (*b*) Graduation from an approved college or scientific school, or in lieu thereof a bachelor's degree in arts or science or its substantial equivalent conferred by an approved institution in Great Britain, France, or Spain, or graduation from a gymnasium in Germany, Austria, or Russia, or the completion of a course of study equivalent thereto, or (*c*) In lieu of either of the above, present such evidence as the faculty may require, to prove exceptional fitness to undertake with advantage the study of medicine. In regard to admission to advanced standing, to go into effect immediately, it is announced that candidates who have completed one or more years of study in an approved medical school, and apply for admission to advanced standing at the College of Physicians and Surgeons, will be admitted to the standing to which their record in that medical school would admit them, and be given credit for all courses satisfactorily completed therein, on presentation of proper certificates covering the same; provided that the candidates before beginning the study of medicine have fulfilled the requirements for admission demanded by the College of Physicians and Surgeons.

Army Canteen Association.—An organization having for its object the reintroduction of the canteen at United States Army posts has been incorporated in this State. The office of the association is at 70 West Forty-sixth street.

Honor for Miss Nightingale.—The Corporation of the City of London by a recent vote has conferred upon Miss Florence Nightingale the freedom of the city, a distinction never before bestowed on a woman except in the case of the late Baroness Coutts.

Appointments of Drs. Meyer and Richards.—Dr. Alfred U. Richards, of Columbia University, has been made Professor of Pharmacology, and Dr. Arthur W. Meyer, of Johns Hopkins University, has been made Professor of Anatomy in the Northwestern University Medical School, Chicago.

Dr. Dudley Jackson, who for five years was superintendent of Wesley Hospital, Chicago, recently resigned this position and has resumed private practice.

Professor Lassar's Dermatological Collection.—The dermatological collection of the late Professor Lassar, comprising more than 2,000 colored casts of skin lesions, has been presented by his widow to the city of Hamburg, Lassar's birthplace, where it will be installed in the St. George Hospital.

Typhoid Fever Near Boston.—Typhoid fever is epidemic in Jamaica Plain, over two hundred and fifty cases having been reported within the last two weeks.

Measles in Brooklyn.—An unusual number of cases of measles is being reported in Brooklyn, the records for two days last week showing one hundred and sixty-four new cases. During the month of March more than 2,500 cases were reported, as against 600 cases for the same period last year.

Mount Sinai Hospital Fellowship.—The George Blumenthal, Jr., fellowship in pathology has been founded in this hospital with an allowance of $500 yearly.

Gift to University of Michigan.—The sum of $1,000 has been given to the library of the University of Michigan at Ann Arbor, by Mr. Peter White of Marquette, for the purchase of rare medical works.

Two Indiana Medical Colleges Merged.—The Indiana Medical College (the School of Medicine of Purdue University), and the Indiana University School of Medicine have merged by agreement with the Indiana University School of Medicine. The name of the new school is "The Indiana University School of Medicine."

Fordham Hospital.—The Medical Board of Fordham Hospital announces that applications will be received for the following positions, in the Out-Patient Department: One assistant attending surgeon, two assistant attending physicians, and one attending physician for the *x*-ray department.

Harvey Society Lecture.—The ninth lecture in the Harvey Society course will be given at the New York Academy of Medicine on Saturday evening, April 18, at 8:30 P.M., by Professor Alonzo E. Taylor, University of California. Subject, "The Role of Reversed Ferment Reactions in Metabolism."

Congrès de l'Association des Médecins de Langue Française de l'Amérique du Nord.—This organization will hold its fourth annual congress in Quebec, July 20 to 22, 1908, in conjunction with the celebration of the third centennial of the foundation of the city of Quebec. The president of the association is Dr. Arthur Simard of Quebec, and the secretary is Dr. Albert Paquet of Quebec. Communications relative to the congress should be addressed to the treasurer, Dr. N. A. Dussault, 28 Rue Ste.-Ursule, Quebec.

The American Pediatric Society will hold its twentieth annual meeting on May 25, 26, and 27, 1908, at Delaware Water Gap, Pa., under the presidency of Dr. Charles G. Kerley. One session will be taken up in discussing the serum treatment of epidemic cerebrospinal meningitis. Dr. Simon Flexner will open the discussion, and Dr. Dunn will give the results of this treatment as observed in the Children's Hospital of Boston. There will be a symposium on the influence of cold air in the treatment of disease, the diseases to which it is applicable, and the degrees of temperature which should be used in the different types of disease. Drs. Northrup and Graham will open the discussion. Epidemic anterior poliomyelitis will be discussed by Drs. Koplik and Le Fetra. Dr. Holt will read a paper on recent diagnostic methods in tuberculosis of children. Members are requested to send, at their earliest convenience, the titles of their papers to Dr. Samuel S. Adams, 1 Dupont Circle, Washington, D. C.

Medical Society of New Jersey.—The date of the coming meeting of this society to be held in Cape May has been changed to June 18, 19, and 20, 1908.

Boston Medical Society.—At the annual meeting of this society on April 7 the following were elected as officers: *President*, Dr. William F. Gay; *Vice-President*, Dr. A. J. Hurwitz; *Secretaries*, Drs. Fred Bailey and L. A. Herman; *Treasurer*, Dr. Rufus K. Noyes.

New London County (Conn.) Medical Society.—The following officers were elected at the meeting of this organization held in New London on April 2: *President*, Dr. M. E. Fox of Uncasville; *Vice-President*, Dr. G. H. Jennings of Jewett City; *Clerk*, Dr. E. C. Chipman of New London.

Memorial to Purkinje.—A bust of Purkinje, the eminent physiologist, has been unveiled in the physiological laboratory of the University of Breslau.

Obituary Notes.—Dr. George W. Griffiths of Louisville, Ky., died on April 11 at the age of fifty years. He was graduated from the Long Island College Hospital in 1866, and had practised in Louisville for forty years. He was chief surgeon of the Louisville and Nashville Railroad and trustee of the University of Louisville.

Dr. Chester G. Higbee of St. Paul, Minn., died of cerebral hemorrhage on April 2 at the age of seventy-three years. Dr. Higbee was born in Pike, N. Y., going to Wisconsin in 1846 with his parents. He was graduated from Hahnemann College, Chicago, in 1870, and then practised at Red Wing for several years, after which he went to St. Paul in 1874.

Dr. James C. Gleason of Corona, Cal., died on March 28 of nephritis at the age of sixty-three years. He was a native of Illinois and received his medical degree from the University of Iowa Medical College. He had practised in Corona for over twenty years.

Dr. M. A. Carrol of Ludington, Mich., died on April 1 at the age of fifty-four years. He was born in Ohio and was graduated from the Western Reserve University Medical College in Cleveland in 1880. He was county coroner at the time of his death and had held numerous other official positions.

Dr. H. P. Brockett of Melvern, Kan., died on March 30 of appendicitis at the age of twenty-five years. He was born at Cottonwood Falls, and was graduated from the Kansas Medical School in 1906. His brothers are Dr. W. T. Brockett of Mayetta, and Dr. F. P. Brockett of Lebo, Kan.

Dr. Peter Dockler of Onaga, Kan., died on April 2 at the age of one hundred and three years. He was born in Paris, and after serving as surgeon in the French Army went to New Orleans in 1840. He was one of the first residents of Onaga, and prescribed for patients within a few days of his death.

Dr. Edmond F. Thomson of Belchertown, Mass., the son of Dr. George F. Thomson, died on March 29 at the age of forty-one years. He was born in Belchertown, and was graduated from the College of Physicians and Surgeons in this city in 1892. He practised in New Haven for some time, but returned to Belchertown several years ago.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth correctly the nature of the ailments therein described, with remarks on their appropriate treatment.

———, California, December 8, 1906.

Dear Doctor:

I am writing to you to get an opinion concerning a colleague who has come out here to live—or rather to die, according to his statement. He was formerly a practitioner in Philadelphia. It is tempting to say here something about the pace there in relation to his disease, but I refrain. His story is a long one and I confess that I do not see clearly his way out. It is very likely because of my small experience with such cases, that I feel the necessity of leaning upon some one to aid me in forming a judicial opinion. The physician's story, as I have been able to put it together, and to abbreviate it (for if I were to write all that he has told me I should have to defer writing until next summer's holiday), is practically as follows:

He is 36 years old, celibate, of New England birth

and education, and up until the time he withdrew from active work in the profession, now about 18 months ago, he had had good health. After about ten years in active general practice he began gradually to specialize more or less in gynecology. His practice was never very large, he says, but it was very engrossing. It is not so easy for me to apprise you of just what he means as it would be if you knew the man. He has that indescribable something which, when doctors have it to give, patients take from them at the expense of their vitality. He did not hesitate to assume responsibilities, to give endless encouragement, sympathy, and care to everyone who came within his sphere, it mattered little whether he had a personal liking for them or not. He was successful, but not immoderately so, although he was a very hard worker both with his patients and with his books.

When he was 30 years old he had an attack of inflammation of the prostate which resulted in abscess necessitating a good deal of surgical treatment which was given to him by a very competent man, Dr. ——. He made a fairly satisfactory recovery, although he was still in the surgeon's care when two incidents bearing upon his present illness transpired. One was a shocking accident to a member of his immediate family, and the other was the protracted and fatal illness of one of his most beloved and important patients. This illness was a painful and tedious one, during which the doctor was most untiring in his attentions. It was at this time that he began to complain of physical and mental torpor, of a sensation of emptiness in the head, and of unaccountable depression. He decided to take a holiday in the shape of an ocean trip. He went to England and although he says he was improved somewhat by the trip, nevertheless, he consulted a physician about his prostate who advised him to have deep urethral injections. He took the treatment for a period of six weeks. During this time he became depressed, particularly because of a pain which had developed in the abdomen to the right of and below the umbilicus. The pain was more or less constant, a dull, exhausting ache. Soon other symptoms developed, particularly disturbed sleep, more or less headache, considerable neuromuscular weakness, and worst of all, mental depression. He consulted another physician but not being impressed by the quality of his advice he went to Paris and sought the opinion of a well-known professor of nervous diseases, who suggested that he should go to the South of France and take a cure, principally hydriatic. He tried this for a while and with some benefit, but as he was worried about his affairs at home he decided to come back and devote himself in a quiet way to his practice. He undertook work only to find that he was mentally and physically unequal to it. He was so absorbed in the consideration of his own disagreeable sensations that he could not give attention and concentration to the various things that demanded them. More than that, he seemed to have developed a very considerable amnesia which added to his depression for he became convinced that it meant some disease of the brain, such as general paresis or arteriosclerosis, which his physicians had not detected. Inclination to work was often felt but he did not have the ability to make himself do it, and when he got himself into work he soon became so exhausted that he felt prostrated. With this came a settled conviction that something much more serious had befallen him than any of the physicians whom he had consulted had yet discovered, and he began to seek the advice of one consultant after another. The result was a variety of opinions which but added to his anxiety and his apprehensiveness. The pain in the side he was convinced resulted from some malignant process; the trouble of the prostate gland was of such a nature that treatment could not overcome it, the slight polyuria was magnified into a symptom of prime importance. Occasionally he complained of dizziness, of palpitation, of a fluttering sensation in the abdomen, and worst of all, of periods of acute anxiety. At these times he would become so solicitous concerning his immediate safety that it was necessary to call a physician, and oftentimes a new one, to calm his fears. During this time he received a great deal of treatment from a genitourinary surgeon, from an internist, and from a general practitioner. He made some progress toward recovery, but never enough to permit him to carry on his professional work. He gradually became convinced that his life of activity had been lived and that he must give himself up to chronic invalidism for the remainder of his days. He became preoccupied about himself in the most typical hypochondriacal way, and the manifestations of selfishness which he displayed are too numerous to mention. Finally he consulted a physician who advised him to come out here and here he has settled, surrounded apparently by every comfort, provided almost entirely, I am told, by his relatives, and ministered to by a devoted sister who, however, has a devoted husband in the East who thinks he is not getting a square deal.

I was called in to see this colleague during one of his anxiety attacks and got interested in his condition. I have since been frequently to see him. He says that he is very anxious to get well, but he thinks the age of miracles is past, that he has done everything that has been suggested and, despite this, witness his present state. He has not enough money to support himself in any comfort nor has he prospects of such, but despite this he accepts the sacrifices of the various members of his family and is preparing to die.

His principal symptoms as far as I make out are headache, disturbed sleep, physical apathy and weakness, indigestion, constipation, occasional dysuria, depression of spirits, enfeebled intellectual capacity manifest by inability to concentrate, to recall quickly, to associate, and to exert the will-power, emotionalism, and selfishness. Everything that comes up for comment, discussion or debate, is brought to the threshold of his Ego for comparison and application. Common incidents of daily life that do not apply to him at all are treated as new and potent sources of injury to his prospects of recovery.

I have looked him over as carefully as I can and although there is evidence of disordered function of different organs and systems of his body, I cannot find any evidence of disease. His digestion is surely not in good condition, elimination from the skin, kidneys, and bowels is inadequate, and the extremities are cold, the skin oftentimes clammy, and his complexion has a color or hue that does not strike one as the color of health, but his circulation, heart sounds, blood-pressure, and blood itself are all in fairly normal condition.

I forgot to say to you that at the present time he is under the care of an osteopath here. He says that he has exhausted the resources of the regular profession and that it does not make any difference to him what the osteopath thinks about dislocations of his vertebræ so long as he feels a little better after the treatment. He has given up the idea of ever being restored, but he does not scorn being made to feel a little better en route to translation.

What I wish to get from you is the expression of an opinion as to the nature of his ailment and how to proceed in the accomplishment of his cure. If you will outline a plan of treatment for me I shall try to carry it out and let you know what success I have.

Yours faithfully,

New York, December 15, 1906.

Dear Doctor:

I have read the description of your patient and I hope I shall be able to say something to you that will aid you in restoring him to a career of usefulness and that you may obtain the earnest for your service that is one of the greatest joys of life to members of our guild, viz., the gratitude of a fellow creature reclaimed from a life of invalidism.

I should like to have heard something of your patient's ancestry and of his environment during the years when his character was in the mold. We neurologists early became apprised of the fact that the rift in the lute of some ancestor, by and by makes the music mute in the descendant (with apologies to Tennyson). Indeed, perhaps there is no disease whose course and eventuation is more illumined by a knowledge of the forbears of the individual than neurasthenia, from which your patient suffers, except one with which it is frequently confounded, psychasthenia. This last-named disease may be unfamiliar to you as recognition of it has disseminated slowly. Beard struggled for 25 years to get neurasthenia accepted as an autonomous disease, and scarcely had he got the colossus measured than the dismemberment of it was begun. You know the vast literature that has grown up around it in every land, especially in Germany, the country in which it was at first most coldly received. To-day it is held by many leading neurologists in this country and abroad that neurasthenia as an autonomous disease does not exist, but that there is a symptom-complex subject to slight variation in its constitution but to great variation in its intensity, which is the expression of fatigue or exhaustion of the entire nervous system and its appendages to which the name neurasthenia is properly applied. This symptom-complex may be the result of many widely different causes, but the immediate antecedent is the expenditure of energy that cannot be spared. This expenditure may be a voluntary one, an attempt to accomplish some specific purpose, such as acquiring fame or fortune, or involuntary, an effort to counteract disease or disorder of some important function, or to withstand shock, ignominy, or grief. Infringement of what are called Nature's laws (to be made out in many cases of neurasthenia comes under this head. Some individuals have a vast amount of energy and a large capacity for generating it, others have not. Some individuals tolerate frequent and protracted demand upon their physical and emotional spheres, others do not. Some persons take alcohol all their lives with impunity, others cannot indulge in it a short time without suffering. The individual is the important factor to be considered when the cause of the disorder is being sought.

The neurasthenia that I recognize is characterized by definite physical and mental symptoms, and they are those enumerated in the closing paragraphs of your letter. Naturally, different individuals describe their so-called feelings and sensations differently, according to their temperament, capacity for expression, their imagination, etc., and this holds true for individuals who are neurasthenic. But fundamentally the symptoms are subject to but little variation save in intensity and duration, and these qualities may be accounted for just as they are in scarlatina, pneumonia or other accidental disease. I look upon neurasthenia as an acquisition, not an inheritancy. I look upon psychasthenia as an inheritancy, not an acquisition. Therefore, neurasthenia rarely if ever occurs until after maturity. Psychasthenia almost invariably shows evidence of its existence before that epoch. There are borderland cases, and one of them is described in a letter I append to this reply. Charcot used to show us, when I was a student in Paris, cases of what he called congenital or idiopathic neurasthenia and he distinguished them very closely from acquired neurasthenia. This was another indication of his clinical clairvoyancy. Congenital neurasthenia nowadays is pronounced psychasthenia.

Psychasthenia, the disease (I repeat, at the expense of wearying you, I fear) from which neurasthenia must always be distinguished, if we are to have full measure of success in treating these disorders, is, on the other hand, not an acquired disease. It takes its origin in soil that has been prepared before the birth of the individual and indications of the existence of abnormalities in the victim's mental make-up are frequently present while he is still a child. Such indications are aboulias, phobias, scrupulosity, literalness, obsessions, etc. This predisposition evolves unaided, spontaneously. Incidents slight and trivial to the average individual produce intense results. The chief reason why the physician should distinguish between neurasthenia and psychasthenia, is that one is eminently curable, the other is not. Neurasthenia is a disease that yields almost uniformly to appropriate treatment, and I have no hesitation in saying to you that your patient will recover.

The plan of treatment that you ask for is a simple one: Improve his nutrition and praise him. Functional disease cannot withstand the first, and feelings of incapacity, insecurity, and inadequacy fall before the latter as Tyre fell before Alexander. There are many ways of accomplishing the first: superalimentation if the digestive apparatus will take care of it, massage, resistance exercises, tonic baths, Nature's soft nurse, etc. Indeed, I am not at all sure that the latter alone will not be adequate if you give her full possession, and the way to do it is to have the patient sleep out-of-doors. I am of the opinion that anyone with neurasthenia who will stay in the open air all the time and whose insomnia can be overcome will soon recover. At least, I should like to be reduced to treating everyone who comes to me with neurasthenia in that way.

What shall I say to you about food? Give him food that agrees with him and give him plenty of it. The important thing is to have a diet schedule. It is a valuable disciplinary measure for the patient. If he gains from one to three pounds a week he is going on favorably. If he does not, milk, eggs, and other easily digested, nourishing foods need to be pushed.

Shall you put him to bed and give him a rest cure? I am against it. One has to do it occasionally with patients whose neuromuscular tone is very low, but in all other cases I am opposed to it. A definite hour for a tonic bath, another for resistance exercise, or massage, for reading or being read to, for taking food, for resting, etc., will help to dissipate time, and will at the same time tend to convince him that every effort is being made to restore him to health. Neurasthenics take their symptoms and themselves most seriously and it has an excellent moral effect upon them to treat their symptoms as

if you were engaged in a combat with a foe worthy of your steel. Moreover, such systematic treatment is bound to relieve some of the symptoms, and this relief can be used as an example of the way in which the symptoms will disappear and the disease be gradually overcome. If you are able to instill into his soul the element of hope you have gone a long way toward making him well, even though he has got into the hypochondriacal stage of his disorder.

I counsel you to give him no local treatment even though you may be convinced that his prostate is not entirely normal. The benefit to be gained from such treatment is so immeasurably outweighed by the effect which it has to further concentrate his mind on a portion of the body from which come disagreeable sensations, that it is much more expedient to disregard it altogether..

So far as drugs are concerned, I wish only to say to you that practically they are unnecessary in the successful treatment of neurasthenia, save occasionally to counteract some disagreeable symptom such as stomach hyperacidity, insomnia, or constipation. These symptoms and all the others of neurasthenia may be overcome by appropriate dietetic and physical measures, but it takes some time to do it and meanwhile, if the patient's comfort demands it, they may be counteracted by drugs. What I really want to say is that no systematic drugging should ever be undertaken in neurasthenia. The habit of giving bromides and other sedatives, and of giving strychnine and other stimulants for a long period is in my judgment pernicious. If these statements were not founded in the experience of treating many hundreds of cases of neurasthenia and so-called neurasthenia, I should suspect them of being tinged with arrogance and dogmatism.

If your patient was suffering from psychasthenia instead of neurasthenia, I should have to dwell at great length upon what we neurologists call the moral treatment. I interpret him as a pure neurasthenic, so I leave it to your own judgment to formulate a plan for encouraging him and picturing the pisgah sights of the future when he shall be entirely restored to health.

Yours very sincerely,

———, Texas, Nov. 8, 1900.

Dear Sir:

I would like you to advise me as to the following case. At the age of 23 years (I am now 32 years old) of age, I developed a *severe* case of neurasthenia. Neurotic temperament. There is a history of masturbation when young. As far as I can remember the habit was not indulged in to any great extent, but was probably a great factor in the production of the trouble. I graduated in medicine when young, 19, and I was a surgeon in the army at 21 in charge of a large railroad hospital. When the trouble first began I started to consult you, but when I arrived in Baltimore I was in such a bad mental condition that I consulted Dr. ——, who sent me to a sanatorium for about two weeks, and then back to work. He informed me that I would gradually get better and better until I would soon be fully restored. I wrote him a number of letters, but he treated me with utter contempt. Then you will recall that I wrote to you. You advised me to place myself in the care of some colleague of good common sense and judgment, and to follow his instructions implicitly, but, like an infernal fool, I have endeavored to treat myself. I have drifted into a hypochondriacal melancholic condition. It seemed as if the disease prevented my seeking the proper relief. I have traveled extensively, taken all forms of treatment, and went on a ranch for a while, but could not remain there as the life did not appeal to me. For five years, unrelieved by the slightest relaxation, I have suffered untold agony. I was told by an alienist that if I would go to work I would get well. For the last two years I have been practicing here and am doing fairly well and I know I could win out if I could get well. I presume that I am a sexual neurasthenic, as the principal symptom has been a disturbance of the sexual sphere. What I desire to be informed is if you can be of any permanent help to me. I do not ask a complete restoration. The past with its horrible tortures has made such a mental impression that I am at a loss to understand how you would proceed to treat me. I do not want any more sanatoriums—nor promises that cannot be backed up by results.

What would you charge to treat a case of this kind? Make it reasonable as possible, as you yourself know how I am handicapped. I am a pretty disagreeable patient to handle. The case is a chronic one, and will require a line of treatment that I have not yet received. Had I been treated at first as you suggested, I would have been in a far better condition. Assuming from facts stated above, if you desire to undertake the case, we will make more definite arrangements. I am very busy just now but will try and get off at a later date. Promises are like pie-crusts, easily broken, so kindly do not answer this letter if you can not help me. I will take any form of treatment you advise. I understand you are peculiarly adapted to the handling of degenerates, and I would like to have one more chance.

Pardon this long letter, it is the first written to any doctor in a number of years.

Yours truly,

[Psychasthenia and hypochondria will be discussed later.—Ed.]

Correspondence.

THE RAY BROOK SANATORIUM.

To the Editor of the Medical Record:

Sir:—It is utterly futile to attempt to answer every unjust and unreasonable criticism of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis at Ray Brook. Since the earliest organization of that institution criticisms of its every effort at location, of its architectural construction, and of its administration have followed a nearly unbroken sequence. Unfortunately criticism is not always without bias and is frequently made without a full understanding of the surrounding conditions.

The well-known disposition of the Medical Record for fairness compels a reply to many of the statements made in your editorial, "The Ray Brook Sanatorium," in your issue of April 4.

The Board of Trustees at Ray Brook is not made up of active or even nominal politicians. There is at least a majority of independents or reformers in politics among the board. There is not now, nor has there ever been, any open conflict between the Ray Brook Board of Trustees and the Civil Service Commission, and the Board of Trustees are not seeking now or at any time the repeal or modification of a single section, or a line, or a letter of the Civil Service laws of the State. It is true on the other hand that the Board of Trustees have advised the reduction of one year—from six years to five—as the post-graduate experience required of a candidate for the superintendency of the Ray Brook State Hospital. This action was taken in order that a man who has served the institution with distinguished success for a number of years might be made eligible, not for appointment, but for Civil Service examination; that he might come in with others on the same level and for the same tests. Such a candidate surely has an advantage because of superior prac-

tical fitness gained through actual experience in the sanatorium treatment of tuberculosis. Should not the specialist in pulmonary tuberculosis receive preference over the general practitioner or those unfamiliar with the disease through other special practice?

As a truthful statement of our present situation with relation to the selection of a Superintendent for the Ray Brook Hospital the following facts are presented: That in February, 1907, Dr. Melvin P. Burnham presented his resignation as Superintendent of Ray Brook to take effect August 1, 1907, in order that he could assume charge of another sanatorium at Los Angeles, Cal., in the autumn under better financial circumstances. The State Civil Service Commission, without any consultation with the Board of Trustees of the Ray Brook Hospital as to their notions of the attainments necessary for the Superintendency at Ray Brook, ordered an examination during early May of 1907. This examination was entirely written. The questions found their origin either in the mind of the lay chief examiner of the Civil Service Commission or in the mind of some special medical examiner having no actual experience in tuberculosis. The questions in the written examination relating to professional capacity were chiefly laboratory and library, and related to problems not well established, particularly with relation to the opsonic index and the action of sera, all of which were largely problematical and have no sufficient support through the best authorities on tuberculosis. So large a proportion of the examination was given to the purely theoretical side of the question and the disputed problems of pathology that only persons who had taken a library course of instruction or who had "read" for the examination could very well answer. Any candidate familiar with any good text-book on physical diagnosis could doubtless answer the questions presented with greater fullness than could men of prolonged actual practical experience at the bedside. The proposition that physical diagnosis may be learned from reading text-books is so indefensible that it requires no further discussion here. The niceties of diagnosis in pulmonary tuberculosis, particularly in its earliest stages, are not to be learned by reading text-books, but can only be attained through prolonged, varied, and practical experience under the direction of very skillful teachers.

The men who passed the examination qualifying them for the appointment of Superintendent at Ray Brook were men who during their entire life had had no practical experience in the diagnosis and sanatorium treatment of tuberculosis, except in an incidental way common to all general practitioners. Of the entire list from which the Board of Trustees could make an appointment there were not more than two men, so far as we were able to determine, who had had any actual or prolonged practical experience in the treatment of the disease, and they stood rather low on the list. Of the three candidates presented by the Civil Service Commission to the Board of Trustees of Ray Brook for the selection of Superintendent the following situation was presented: That two of them, practically from the time of their graduation until the time of their passage of this examination for the Superintendency at Ray Brook, had been continuously associated with the public service in State hospitals for the insane and had received no special training in tuberculosis. The third candidate on the list had been a contract surgeon in the United States Army from the time of the Spanish-American war until the time of examination and had served in several posts throughout the country, none of which were associated with a tuberculosis hospital. If we were to follow absolutely the directions of the Civil Service law we would be compelled to take one of these three men, temporarily at least, as the Superintendent, and under the rules of the Civil Service Commission could not secure a single additional name unless declinations from the other candidates could be obtained.

I ask you frankly if the Board of Trustees of the Ray Brook Hospital can afford to appoint as the Superintendent of that institution any physician who is not especially experienced and skillful in the diagnosis and sanatorium treatment of pulmonary tuberculosis. I believe that you fail to understand that in the State of New York there are a large number of men who seek to improve their position financially and socially largely through their capacity to prepare and to successfully pass Civil Service examinations as now conducted in New York State. I have no objection to a man improving his position through increase of salary if it present with it a satisfactory capacity, but I must submit that men trained in insane hospitals and men trained for the service of the United States Army or the Marine Corps of the United States service present no conclusive evidence that they should be made superintendents of tuberculosis hospitals.

None of the group of three men presented by the Civil Service Commission of the State of New York to the Board of Trustees of the Ray Brook Hospital have ever previously taken sufficient interest in the study of tuberculosis to become associated with any of the State or national societies for the study of that disease and none of their names are on the roster of the third annual meeting of the National Association for the Study and Prevention of Tuberculosis. The factor of deep personal interest, of an investigating enthusiasm, and a disposition to meet and exchange experiences in societies and otherwise with other men interested in the same subject are indications of virility in a superintendent. The Ray Brook Hospital does not want now, has never wanted, and so long as I am a trustee of that institution I am of the opinion that it will never elect, a superintendent who has not established at least some little reputation for himself in a practical kind of a way in the sanatorium treatment of tuberculosis, and who has not, besides, an interest in the disease and its study which is not measured by salary and perquisites. This situation may be entirely too ideal for a Civil Service examination.

The MEDICAL RECORD can do more for the Ray Brook Hospital than it has done when it furnishes the widest publicity possible by its large circulation to the fact that the position of Superintendent of the Ray Brook Hospital is now vacant and that the Board of Trustees of that institution, I am sure without a single exception, are seeking to secure for that position a person having the widest knowledge of tuberculosis and its sanatorium treatment, and that political influences will not be a factor in securing an appointment to that position. In no other department, of management, of administration, of engineering, or of nursing, has any conflict occurred with the Civil Service Commission, and every salaried appointment made at Ray Brook is a Civil Service appointment, either with or without examination. I think that there is no institution within the State of New York that has fewer exceptions to the provisions of the general Civil Service law than has Ray Brook, and, moreover, the Board of Trustees are not disposed to ask of the Civil Service Commission any exemption from its provisions.

W. G. MACDONALD, M.D.,
Member Board of Trustees, N. Y. S. Hospital for Treatment of Incipient Pulmonary Tuberculosis at Ray Brook.

THE MELODY CURE OF STUTTERING.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR—In one of your recent issues Dr. E. W. Scripture writes interestingly on the treatment of stuttering and stammering, in which he claims to effect happy results with the so-called "melody cure." The tone of this article conveys to the reader's mind its author's originality in discovering this euphonious method of treating this distressing affection. To quote from his paper: * * * "This melody cure I have never read or heard of before; I stumbled on it quite by chance while trying the various other cures." Clearly an innocent claim to originality.

Not wishing to detract from the merit of Dr. Scripture's article, which is both instructive and interesting, but for his enlightenment as to the priority of the "melody cure," I submit the following from a recent issue of the *Etude*, a musical publication: "Byrd, in his collection of Psalms and Sonnets, dated 1588, amongst many trite suggestions as to the value of learning music, offers the following: 'It is a singular good remedy for a stuttering and stammering in the speech.'" Clearly, the award of priority belong to this great music master.

C. ROSENHECK, M.D.
NEW YORK.

New Zealand as a Field.—A correspondent of the *Glasgow Evening Times*, after describing the many advantages possessed by New Zealand in point of climate and prosperity, says that the country could accommodate five hundred more doctors, and supply them with a clear income of £400 to £500 a year. In the large towns incomes running up to £2,000 a year are not out of the way, but the ordinary country practitioner is wanted in great numbers.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE KING'S HOSPITAL FUND—QUEEN VICTORIA'S NURSES' INSTITUTE—MYOMECTOMY DURING PREGNANCY—CONFERENCE ON INFANTILE MORTALITY—LOW COSTS IN A DEFENCE ACTION—HOSPITAL PATIENTS' PREJUDICES—DR. HALL-EDWARDS.

London, March 27, 1908.

The annual meeting of the King's Hospital Fund was presided over by the Prince of Wales as president. The reports showed the receipts for the year were £484,060 10s. 9d., but a large part of this was on capital account. The amount distributed was £121,000, in addition to which amalgamation grants of £2,750 falling due were paid. The League of Mercy contributed £18,000, the same as last year. The fund was incorporated by an act of Parliament which came into force July 26, 1907, and the Council says it has so far worked satisfactorily. The amalgamation of orthopedic hospitals is now complete: efforts to unite the throat and ear hospitals are still going on. The Prince, in moving the adoption of the report, said that on the advice of the executive committee he had decided to appoint a committee to inquire into the system prevailing in the London voluntary hospitals regarding the admission of out-patients, and he hoped the labor involved would to some extent be lightened by the work of the Royal Commission on the Poor Laws. So far as this may deal with medical relief, the evidence and conclusions must be of importance in connection with the fund's inquiry, which will therefore be postponed until the commission has reported. The Prince also announced that the growth of London had been so great during the eleven years since this fund was instituted that its operations have been extended from a radius of seven to nine miles from Charing Cross. Further, it was proposed this year to consider the claims of consumption sanatoriums in the country, which take a large proportion of their patients from London, and such institutions are better in the country than in London or its suburbs.

An appeal on behalf of Queen Victoria's Jubilee Institute was issued on Monday. There are now 1,116 nurses trained in district nursing at the cost of the Institute working among the poor throughout the country, and the expenses exceed the income by £3,000. There are fifty-three places where associations are organized and waiting for the nurses to be sent. The aim of the executive committee is that "not a wild mountain glen, not a sad city slum, not a village in the Kingdom, shall be without its health missioner to the poor." Queen Alexandra countenances the appeal and Miss Nightingale has sent a message in its behalf from her sick bed.

At the meeting of the Obstetrical and Gynecological Section of the Royal Society of Medicine Dr. Walter Swayne read an account of two cases of myomectomy during pregnancy on which he had operated. In one a pedunculated fibroid the size of an adult head was removed from the fundus. A smaller senile one behind and below the other was enucleated. The pregnancy had not been interrupted two months later, when last seen. In the second case a fibroid was growing from the right cornu and had undergone rotation so that it lay on the left. It was untwisted and enucleated. Pregnancy interrupted a month after leaving hospital. Dr. Swayne thought fibroids should be removed if they caused pain, pressure symptoms, axial rotation of uterus, or signs of twisted pedicle.

Dr. J. H. Dauber then communicated a case of a much more formidable kind in a woman of 31, married three months, which had been previously diagnosed as pregnancy complicated with a tumor. It was obvious that a tumor occupied the whole of the pelvis and the abdomen was as large as in pregnancy at nine months. On opening the abdomen a large irregular solid tumor was exposed, lying to the left and extending from deep in the pelvis to the arch of the diaphragm. It was fixed and retroperitoneal throughout. Behind it in the right iliac fossa lay the pregnant uterus, adherent by the cervix, which was greatly lengthened. Many adhesions of intestine; in pulling them off a rent was caused in the capsule of the tumor and as it was obvious it would shell out it was enucleated, except the pedicle, which was as large as a small wrist and was attached to the cervix. The hemorrhage was very great and impossible to control, so that amputation of the uterus supravaginally was done to save life. Dr. Dauber greatly regretted sacrificing the uterus, but it seemed necessary, and Dr. Mansell-Moullin, who was present, concurred. The fact that the tumor was beneath the broad ligament and had burrowed up behind the peritoneum as far as the left kidney created extreme difficulty, but the patient did remarkably well.

In the subsequent discussion, if the term may be applied to a series of similar opinions, the generally accepted view was reinforced that unless for definite and very serious indications fibroids complicating pregnancy are best let alone.

Dr. Herbert Spencer, president, without criticising the three cases, held that myomectomy, though occasionally urgently required for very large or impacted or rotated tumors was only rarely necessary, and as the cases related showed, was attended with considerable risk. The operation should be postponed if possible until the child was viable.

Dr. Champneys followed in the same sense. He had long experience of the complication of pregnancy with fibroids, and though in some cases he had been obliged to resort to exceptional measures, such as cesarean section, he had known many where some alarm had been felt by the patients or their advisers, but the pregnancy had gone on safely and other children had subsequently been born. He thought interference was required in extremely rare cases.

Dr. Herman concurred, but said some statistics mentioned gave too high a mortality. He related a case in which he had enucleated the fibroid attached to a pregnant uterus and the patient was delivered of a full-term child six months afterwards.

Dr. Amand Routh had collected statistics which indicated that by modern methods the danger to life was much less than absolute figures showed—in fact, the risk was not so much during labor as from subsequent sepsis. If the endometrium became infected, a submucous or intramural fibroid would almost certainly become so. Abortion did not often occur when fibroids were present, though labor might ensue a few months before term. No operation should be undertaken unless absolutely essential until the child was viable. He had only twice done cesarean hysterectomy and in both cases near full term. He had often found fibroids blocking the pelvis in the early months, but they always underwent flattening and softening—were suddenly or gradually displaced, sometimes as late as the onset of labor, which occurred spontaneously without assistance.

Dr. Eden agreed with the previous speakers as to the rarity of the complication and its comparative unimportance.

Dr. Arthur Giles said generalities were of no value. It was beside the mark to say fibroids were usually unimportant or usually dangerous. Fundal fibroids might make no difference to pregnancy and labor, but cervical fibroids impacted in the pelvis were in another category. He mentioned a case in which he removed the fibroid from the broad ligament and had great difficulty to control the hemorrhage, which recurred later, and he had to remove the uterus as Dr. Dauber had to do.

The conference on infantile mortality was opened on Monday, when Mr. John Burns as president gave an address. He congratulated the delegates upon the progress made during the past year. He advocated natural milk for infants, good "mothering" being a necessity for the young. This, he said, was more necessary than ever, and a woman should not be at factory work for six months before or as long after the birth of a child. He has received two or three deputations respecting the contemplated bill on milk, and to one of them he said he hoped the supply of the country would be placed by it on a much better footing.

On Tuesday the conference was largely attended by medical, sanitary, and other representative officials and persons interested. Dr. C. W. Saleeby read a paper attributing the cardinal difficulty against which the conference had to meet was the lapse of instinctive aptitude on the part of the human mother, who now possessed only instinctive love and uninstructed intelligence.

Miss A. Ravenhill read a paper advocating a prolongation of elementary education in order that the girls might be trained, not only in the duties, but in the functions of womanhood, so that they should acquire a higher conception of the dignity and vital responsibility of parenthood. As to which, a mother says it is curious how single women all think they can instruct the married. Miss Lanetti, considering the relationship of feeble-mindedness, illegitimacy, and infantile mortality, was strongly of opinion that the detention of persons unfit for parentage was absolutely necessary.

Councillor Anderson referred the unemployment problem to infantile mortality, or, as he went on to explain, to the "struggle of infancy," which handicapped

many in their future, and these, he said, perpetuated a weaker generation than themselves.

The deliberations of the conference were brought to a conclusion on Wednesday, when a series of more or less important resolutions were adopted, among which those concerning the education of girls, the milk supply, and the sale of foods and drugs were perhaps the most important. What may be the result of the recommendations made to Parliament is doubtful, but it is perhaps well that so many interested advocates of different opinions should have met together to consider them. As to foods and drugs offered or sold for infants, it was resolved that they should be certified by a Government analyst as noninjurious, and that each packet should have the analysis printed on it.

A fund is being raised to meet the law costs incurred by Drs. Thomas and Skyme in defending an action for malpractice. The appeal is signed by so many professors, teachers, and surgeons that it seems as if those best able to judge are practically unanimous. The case was tried in December, 1906, the patient claiming above £2,214 damages. The jury could not agree and in November, 1906, a second trial resulted in a verdict for £100. This leaves the defendants liable to the costs of both trials, amounting to over £4,000, of which the Defense Union has paid £900. The sympathy of the profession seems universal. Canadian and American surgeons have expressed strong opinions on the case, so that you probably know all about it. Does it not seem monstrous that the costs of defending oneself from such a charge should amount to a small fortune?

The difficulties of dealing with some hospital patients are illustrated in a statement by Dr. Robertson, physician to the Ventnor Consumption Hospital, at the annual meeting held in London yesterday. When the fresh-air system was first tried the mother of a patient in a room with an open window complained not only to the governors but to Queen Victoria, and Her Majesty sent her own physician to inquire into the matter. Now, said Dr. Robertson, there is not a closed window in the hospital. So when graduated work was first attempted in the grounds they asked for payment. Now they are most anxious to be employed, for they take it as a sign that they are improving. The chairman said 897 patients had been treated during the year with beneficial results at a cost of £12,786, but the income was only obtained with difficulty.

I am glad to report that a civil list pension of £120 has been granted to Dr. Hall-Edwards, in recognition of his services. It is sad, however, to have to add that the *x*-rays have injured the other hand and that expert advice is that all four of its fingers must be amputated, though it is hoped to save the thumb. Of course, the pension named does not render unnecessary the fund which is being otherwise raised.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

PHILIPPINE ISLANDS MEDICAL ASSOCIATION—RAPPROCHEMENT OF FILIPINO AND AMERICAN PRACTITIONERS—RELATION OF BACTERIAL SYMBIOSIS TO ANIMAL PARASITISM—PROGRAM OF MEETINGS—FOREIGN DELEGATES.

MANILA, P. I., February 27, 1908.

THE fifth annual meeting of the Philippine Islands Medical Association was opened yesterday afternoon under most promising conditions in one of the lecture rooms of the Philippine Medical School. The attendance exceeded even that of last year, and much interest and enthusiasm were plainly evident. Delegates are present from Ceylon, Siam, Straits Settlement, Indo-China, Hong Kong, China and Japan, making a total of nine foreign representatives. The local medical men were also more numerously represented than in former years. This is largely due to the constant increase in membership of the association, the growth of which has been constant since its organization, so that it may now be said to be thoroughly representative of the medical profession in the islands.

Another encouraging feature is the fact that each year the Filipino physicians are showing more and more interest in American methods and American medicine, and seem most anxious to become more proficient in them. On the other hand, the American medical men, through their more intimate association with their Filipino brethren, are learning much as to their habits of thought, and also profit by sharing the experience of those who have been acquainted with local conditions all their lives. The best of feeling apparently prevails, and much will, no doubt, be accomplished by this meeting in furthering the advancement of medicine in the Philippine Islands.

Governor-General Smith made a brief opening address in which he welcomed the foreign delegates to the Philippines, and assured the members of the association that the same support which the government has heretofore extended toward furthering the advancement of the science and art of medicine in the islands would be given in the future.

The Mayor of the city, Mr. Roxas, then followed with a brief address, in which he emphasized the importance to the Philippine Islands of gatherings of this nature, and thought much good must inevitably result from the interchange of ideas that would take place with the medical men, not only from the different islands of the group, but also from many other parts of the Orient.

He was followed by Dr. W. E. Musgrave, who delivered the President's address, entitled "The Influence of Bacterial Symbiosis upon the Biology and Pathogenesis of Animal Parasites." Dr. Musgrave in his address placed himself upon the side of that school which now seems to be slowly forming which believes that microorganisms, when surrounded by adverse conditions, also develop resisting powers much in the same way as the human organism now develops immunizing powers against the bacterial invader. He concerned himself, however, principally in calling attention to the large field which lies in the direction of the further study of symbiosis, and invited attention to the work in recent years done in this direction, as well as to his own work, which was done several years ago, in which he showed that amebæ could not be cultivated alone, yet this became a simple matter when they were grown in connection with the typhoid or colon organisms.

The afternoon session was followed by a reception by the Manila Medical Society to delegates and members of the Philippine Islands Medical Association at the Elks Club at 9 P. M. The reception was a social success, many families and friends of the guests being present. The receiving line was formed by the Governor-General and Mrs. Smith, the Commanding General of the Philippines Division of the United States Army, and Miss Weston, Mrs. Worcester, Mrs. Leas and Drs. Freer and Musgrave.

The work of the meeting will commence with a clinic and luncheon at the Division Hospital at 10.30 A. M., and this will be followed by a scientific session which commences at 3 P. M. in one of the lecture rooms of the Philippine Medical School. This evening a dinner will be given to the delegates and officers of the Philippine Medical Association. At 10:30 A.M., on the 28th, the second scientific session will be held, which will consist mainly of a series of papers upon cholera and more particularly with regard to some new developments in connection with this disease. In the evening a dinner will be given by the Governor-General in honor of the foreign delegates.

On the 29th two scientific sessions will be held, one at 10 A. M. and the other at 3 P. M. Among other things time between sessions will be taken up in discussing the advisability of forming a far Eastern Medical Association, which would include the medical men of the entire Orient. Time has also been set aside for visiting the laboratories of the Bureau of Science, the prison, insane, leper, cholera and smallpox hospitals of the Bureau of Health.

On the afternoon of March 1, in response to an invitation from the Navy Medical Corps, a trip will be made to Cavite for the purpose of visiting the Cañacao Hospital. On the morning of March 2 the corner stone of the new $400,000 General Hospital will be laid. In the afternoon a trip, by invitation of the Army Medical Corps, will be made to Fort William McKinley.

An excellent pathological exhibit in which the specimens are changed before each session is conducted at the medical school.

The different countries are represented as follows: Ceylon by Sir Allan Perry, the Honorable Principal Medical Officer of Ceylon; Straits Settlements by Dr. R. D. Keith, Physiologist, Straits and Federated Malay States Medical School, and by Dr. H. Fraser, Institute for Medical Research, Kuala Lumpur; Imperial Chinese Majesty's Government by Cheng Hao; Colony of Hong Kong by Dr. Francis Clark, Medical Officer of Health; Indo-China by Dr. J. J. Vassal, Institute Pasteur Nhatrang, Annam; the British Royal Army Medical Corps by Surgeon-Lieutenant Ryley, and Japan by Professor Taichi Kitajima, M.D., Infectious Disease Institute, Tokio.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 2, 1908.

Remarks Upon Intussusception with a Suggestion for a New Method of Operation Upon Cases in which Reduction Is Not Possible.—E. A. Codman tabulates some 27 cases of this surgical condition seen in the Massachusetts General Hospital in the course of ten years, the number being 27, of which 10 were in infants under one year. The histories of several of the most important cases are given in full. The author makes a plea for mesenteric ligation, the method of employing which, he describes in full. He lays down the following general rules in regard to treatment: (1) All cases in infants and children in which the diagnosis can be made and which are not already very feeble, should be given one forcible oil enema under an anesthetic on the operating table. This should be followed by laparotomy whether the tumor disappears or not. (2) Before using efforts at reduction forcible enough to cause increased shock, the surgeon should, *if he does decide on it,* make up his mind to carry out reduction up to the limit of the patient's strength. (3) If reduction is considered too doubtful, resection with double enterostomy is the choice when (*a*) the mass is wholly composed of small intestine; (*b*) when it is wholly composed of large intestine and the mechanical conditions make resection easy. (4) If reduction is abandoned and the mass is wholly composed of large intestine and resection cannot readily be performed, excision of the intussusceptum is indicated by Barker's or Mikulicz's method. (3) In irreducible cases in which the small intestine is invaginated into the large, simple enterostomy without resection and resection of the mass should be abandoned and replaced by ligation of the impacted mesentery and enterostomy. (6) In infants where there is already evidence of severe exhaustion, ligation and enterostomy could probably be done very rapidly and with less operative shock than even a successful reduction, provided the operator from the beginning abandoned any idea of reduction. The essential object of the operation which is here suggested is to produce gangrene of the intussusceptum in a convenient manner so that within a few days enough softening of the constricted portion will have taken place to allow of its ready reduction by gentle traction. When the arterial supply is cut off it cannot be long before the blood and edema in the intussusceptum will be squeezed out by the peristalsis of the intussuscipiens, leaving the submucosa still strong enough to stand a gentle pull. The suggestion is offered particularly for desperate cases to replace resection and hopeless effort at reduction. It would be easier, quicker, and produce less shock than any other form of operation.

Anomalous Folds in the Nasopharynx.—Two unusual cases have recently come under the observation of J. P. Clark. In both instances smooth folds were attached to the Eustachian prominences and draped up like portieres to the vault of the pharynx. One patient came under observation for tonsils and adenoids and these were removed. He was also deaf and the operation was followed by great improvement in hearing, but the folds were left undisturbed. In a second similar case occurring in a young adult, a small piece of the folds was punched out and submitted to the microscope but it revealed only the structure of normal pharyngeal mucosa. Clark has found nothing in the textbooks bearing on this anomaly. The folds were situated between the auditory tube and the fossæ of Rosenmueller and were consequently in the position of the arch which lies between the first two gill clefts of the embryo (counting the spiracular cleft first). In the cases presented, the folds may be only adventitious developments of mucous membrane.

New York Medical Journal, April 4, 1908.

Lactacid Milk in Infant Feeding.—C. E. Carter offers a general consideration of this subject and presents the following summary: (1) Lactacid milk is obtained from clean, fresh cows' milk, fermented by the lactic bacillus, isolated by Cohendy in 1903, and which he describes as "not growing under 35° F. nor above 63° F." The degree of acidity is limited by the time allowed for the activity of the bacilli. (2) Buttermilk feeding and lactacid milk feeding are absolutely distinct. The former affords an uncertain and temporary expedient always, and being a spontaneously sour milk contains, besides the lactic ferments, generally yeasts which produce alcohol. (3) In infant feeding the frequent desideratum of high proteid percentages may be found not only possible, but also safe, with lactacid modification of milk. (4) The digestive enzymes of natural milk are not killed as in the unnatural processes of sterilization or even in Pasteurization, but are augmented by the *Bacillus bulgaricus*. (5) Lactacid milk is logically indicated in children: *a*, In difficult feeding cases; *b*, in fermentative diarrheas; *c*, in specific enteric infections of typhoid or tuberculous bacilli. (6) From the extremes of the scientist and the enthusiast, from Herter and from Metchnikoff, come corroborative evidence that lactic acid inhibits intestinal putrefaction. (7) Promulgation of the general desirability of undiluted lactacid milk as a beverage can but lessen the ills that flesh is heir to, even if it cannot accomplish, as Metchnikoff hopes, the prolongation of man's alloted span. (8) The writer presents this as a preliminary communication, and will later submit a series of results obtained in indicated cases of lactacid milk feeding.

Carious Teeth in the Tenement Population of New York City.—H. Emerson gives the result of examining 2,301 tenement house children with reference to their dental condition. Of this number 1,478 were between ten and fifteen years old; 18.8 per cent. of the latter had normal teeth while 81.2 per cent. were defective in this respect. Each defective averaged 4.7 bad teeth. Of the 634 examined over fifteen years of age, only 3 per cent. had no decayed teeth while 97 per cent. had an average of 6.5 decayed teeth per person. The author found that the use of the tooth brush and even mouth rinsing were conspicuous by their absence. The author has no figures to prove that mouth infection involving the fauces and tonsils are more common in individuals with many carious teeth, but the condition of the soft tissues which come in contact with carious teeth, at the gum margin or upon the buccal or lingual mucous membranes, certainly suggests that there is a pretty constant source of septic or putrefactive bacteria in the crypts of the decayed teeth. He further believes that proper oral hygiene will check the prevalence and increasing incidence of respiratory disease and that prophylaxis and treatment of decayed teeth should be undertaken on a comprehensive scale as a public necessity.

Chronic Alcoholism.—G. E. Pettey discusses what can be done and what cannot be done by treatment. He classifies habitués of alcohol as regular drinkers and periodical drinkers, each class having several subdivisions. Treatment of all classes should begin with the elimination of all waste products which the effects of alcohol have caused the system to retain. Bowels, kidneys, and skin should all be called on. Then come on the various electric treatments, vapor showers and other baths, suggestive physical training, discipline, etc., for those patients of the more promising class. Another class will need special treatment for the relief of the stomach catarrh which is so troublesome in alcoholic cases. Treatment must be kept up until the patient is able to enjoy and assimilate three good meals daily. Most of these chronic cases can be best cared for in an institution where better disciplinary environment can be maintained. The author admits that the wide range of temperament found in this class of patients but believes that as large a percentage of permanent cures is possible as with any other serious ailment. The physical man must be renovated and every bodily function restored to normal activity while the mental bias favorable to the use of alcoholic liquors must be eradicated.

Journal of the American Medical Association, April 4, 1908.

The Treatment of Iritis.—E. C. Ellett considers atropine the most efficient drug for dilating the pupil in iritis; the standard solution of four grains to the ounce may need to be modified. If adhesions have formed it may be advisable to increase the strength up to eight grains for a few instillations to break up the adhesions, and, on the other hand, with children and susceptible subjects, a weaker solution than the standard may be expedient. Usually, with the patient at rest and surroundings favorable, four instillations in twenty-four hours will suffice, and when full dilatation has been secured, the frequency can be diminished till the minimum dose that will keep up the mydriasis is reached; this dose is then continued until the eye is free from redness. If the drug fails to dilate the pupil fully, Ellett favors the use of one drop of cocaine solution preceding the atropine to get the combined effect of the drugs. Moist heat, being more energetic, is preferable to dry heat in aiding to maintain mydriasis, though both are useful. The local abstraction of blood is also an aid. Protection from light and rest to the eye are valuable adjuvants to other measures in treatment of iritis. Every patient with iritis would be better for confinement to bed till convalescence is established in Ellett's opinion. So-called "atropine catarrh," he is satisfied, is only the result of infection from dirty solutions and droppers. Applying the solutions warm by rinsing out the syringe with hot water before drawing up the solution insures a clean dropper and less irritation to the eye. The above measures tend to relieve pain, and while pain persists, improvement is not imminent. Dionin, though sometimes effective, is, in Ellett's experience, less

reliable for relieving pain than moist heat. In traumatic cases, with threatened or feared suppuration, cold applications seem to be of the most value, and should be continued as long as needed at all. Anodynes are often necessary internally and opium is most effective, but unpleasant on account of the systemic disturbances to which it gives rise. Counterirritants may sometimes be useful, and blood letting by leeches aids the mydriasis as well as relieving the pain. Sometimes the pain is due to an increase of tension, or the latter may occur without increase of pain. Hot applications may relieve this, but most often fail, and if the tendency to adhesions is not marked, we may use a myotic, alternating with the mydriatic, or at least dilating the pupil once in twenty-four hours. If this fails, paracentesis may be done, and Ellett would prefer to do this early, and to repeat it if necessary, continuing the mydriatic. Constitutional treatment is essential and includes attention to every constitutional condition that can in any way retard the cure or interfere with the action of remedies. Aside from its relation to cause, internal treatment is of importance and mercury and the salicylates are of great value in other forms than the syphilitic and rheumatic. Ellett has not had a very favorable impression of the value of the iodides except in chronic cases or in cases associated with choroiditis and running a slow course; nor does he find sweats so effective as in choroiditis and general uveitis. Burnham's "combined method" of the use of mercury, iodide, and pilocarpine is considered by him well worthy of a trial.

Alimentary Intoxication.—W. J. Butler discusses the condition called alimentary intoxication by Finkelstein, the clinical picture of which is better known under the names enterocolonic catarrh, milk poisoning, bowel infection, etc., and in its severer form, cholera morbus. It occurs in children who have been slightly abnormal, as shown by the temperature and weight charts, but without striking morbid symptoms. It is always preceded by a qualitative or quantitative increase or change of diet and the onset of intoxication is announced by marked nervous symptoms. After a varying period of irritability, the infant is seized with convulsions followed by stupor or coma, or it becomes apathetic, drowsy, and even comatose. The temperature usually rises sharply, but not always. The stools are often more frequent, but may seem normal at the beginning of the attack. There is considerable depression, and, in the severer cases, marked collapse with low blood pressure and livid skin. Before, or with the rise of temperature there is a sudden decline in the weight curve, the breathing is accelerated, rather deep, and may be misinterpreted as a pulmonary symptom. A striking feature at the height of intoxication is the alimentary glycosuria, dependent on lactose and galactose, and due to their absorption and failure to undergo oxidation. Albuminuria and cylindruria may coexist. A leucocytosis, not exceeding 30,000 is always seen during the acute stage. The physiognomy is markedly different from that of the normal infant. The symptoms vary with the case, in some being typical, in others, one or other symptoms predominating. Finkelstein recognizes several forms; the choleraic with great loss of weight and collapse, and without marked cerebrospinal symptoms; the hydrocephaloid forms simulating a tuberculous meningitis; the soporose form, and asthma dyspepticum, in which the peculiar breathing is the most marked symptom. The incipient dyspeptic stage may develop into a chronic intoxication, a marasmus, instead of the acute intoxication described. Butler reviews the arguments for and against the bacterial pathology of the disorder and concludes that the cause must be sought, not in bacterial infection or food decomposition, not in toxins supposed to be contained in milk, as this condition may occur with the most careful preparation of food, but in an intolerable quota of nourishment, either quantitatively, qualitatively, or both supplied to an infant already suffering from nutritional disturbance, resulting in an abnormal destiny of the nourishment in intermediary metabolism. The presence of glycosuria at the height of the intoxication would indicate some grave perversion of metabolism. The indications for treatment consist in combating the collapse, cutting short the intoxication, and bringing the child back to a diet commensurate with its caloric requirements. The first indication can be met by hypodermoclysis of salt solution, using from 50 to 100 c.c., and repeating when deemed necessary. The second is met by entire withdrawal of food and administration of water only for twenty-four hours. With the subsidence of all symptoms, he begins feeding with teaspoonful dose five times a day of centrifugated breast milk if possible, or an equal quantity of buttermilk, adding neither sugar nor meal. If this is not available, fat-free milk may be used. As a diluent, water and a thin cereal gruel may be used. After twenty-four hours, if this is well tolerated, and no sign of the intoxication reappear, the milk may be increased to two teaspoonfuls, which after two or three days, all going well, may be again doubled, and so on till the diet (fat-free in artificially fed infants) is reached that will meet the caloric needs, having added in the meantime, with the increased tolerance of the buttermilk when employd, 30 grams of sugar, preferably maltose, and 15 grams of flour to each liter of buttermilk while boiling. In case of breast-fed infants, after four or five days' feeding carefully with centrifugated breast milk, the child may be returned to the breast, the amount of nursing being carefully controlled. The buttermilk diet should not be kept up over six weeks, after which whole milk dilutions will be required. Slight relapses are liable to occur during the treatment if the food toleration limit is passed. It is best to go slow, allowing forty-eight hours for judging the effect of each food increase. Cathartics and intestinal antiseptics are not needed unless there is constipation, as is sometimes the case in the soporose form, when a laxative is indicated.

Scarlet Fever Epidemic from Milk.—H. B. Hemenway gives the history of an epidemic of scarlet fever that occurred in the city of Evanston, near Chicago, in the winter of 1906-7. He describes the conditions and shows, apparently conclusively, the connection between the extension of the disease and the use of milk from a certain source of supply. This source had been under suspicion on account of a number of cases of scarlatina occurring during the previous summer and fall, but the real epidemic began early in January, 1907, and was at its height between the fourteenth and nineteenth of the month. Whole families were attacked in a day and a notable proportion of the patients were adults. Cases occurred also in the adjoining portion of the city of Chicago and in a village immediately north of Evanston, as well as in a western suburb of Chicago about this same time, in all of which regions a considerable portion of the milk was supplied from the same source. Nearly all the cases in Evanston occurred in users of this milk and the same was true in Wilmette and Oak Park, where it was also supplied from the same source. On the other hand, in the adjoining village of Winnetka, which did not receive milk from this source there was but one case of scarlet fever, and that was clearly traced to contagion. In short the distribution of the cases of scarlet fever showed throughout a close relation to this particular milk supply which went to about one-seventh of the milk consumers in the territory. There was a sudden fall in the reported new cases when the supply from this source was discontinued by the orders of the local health commissioner, while they continued to increase in Chicago where the milk refused at Evanston was delivered. Few cases were recognized as due to contagion except those traced back to users of the suspected milk, though this phase of the matter was carefully investigated. The epidemic in Chicago reached its height a little later than at Evanston, but followed a similar course, declining a little less suddenly after the discontinuance of the milk supply from the suspected locality. Investigation by the Evanston health authorities revealed a number of cases of scarlet fever occurring in January in the locality from which the milk was sent, some of them in families supplying the milk or including employees of the milk company. The milk was bottled on the spot and the chances of its infection in transit need hardly be seriously considered. Hemenway gives the credit of checking the epidemic to the hearth department of Evanston, which first took the matter up and traced the infection to its source. He criticises certain other officials for their delay in this matter and points out the necessity for a thorough organization of health officials, local, state and national, so that no possible question of authority can delay investigation and action.

The Lancet, March 28, 1908.

Meralgia Paræsthetica Successfully Treated with the Constant Current.—E. R. Morton gives brief notes of three cases of this malady which is also known as Bernhardt's affection of sensibility and relates to the distribution of the external cutaneous nerve in the thigh. Its main feature is a feeling of numbness of woodenness or pain on the front or outer side of the thigh according to the distribution of the nerve mentioned. Sometimes there is a feeling as if the skin was very tightly stretched over the area. The superficial course of the nerve and the way in which it pierces the fascia lata are predisposing causes for its involvement. The lesion is probably a localized perineuritis with associated interstitial and parenchymatous changes in the nerve. External trauma will account for most cases, although at times the nerve may be come nipped in occupations calling for extra tension on the fascia at this point. The author notes that the use of the faradic brush in this affection has been disappointing but that much satisfaction follows the use of the constant current. He places the indifferent (negative) electrode over the lumbosacral region while the positive is applied over

the affected area and especially over the site of emergence of the nerve. No one area receives the current for more than two or three minutes at a time. The current varies from 30 to 50 ma. In his hands this mode of electrotherapeutics has given most satisfactory results.

Modern Methods of Treating Infective Conditions of the Throat.—Meredith Young has undertaken a series of experiments to observe the respective values of gargling, douching, swabbing, use of trochees, etc., in combating septic conditions in the mouth. He has made cultures before and after the employment of these various methods from throats seen in connection with scarlet fever, diphtheria, "hospital sore-throat," etc. His results go to show that for throat disinfection gargling possesses no advantages but rather several disadvantages. It is merely a flushing process at best and sterile water is doubtless as efficient as are many of the gargles used. Douching properly done is useful but is hardly adapted for anything except hospital service owing to the difficulty of performing it and the dangers of it when improperly done. Spraying is little better than gargling. Gratifying results were obtained in Young's observations by the use of medicated lozenges. The best method proved to be swabbing. The author says that to secure the best results with this method the patient should be placed with the head well back over a pillow in pretty much the same position as for removal of adenoids so as to prevent any liquid from the swab going into the larynx. The swabs should be nearly as large as a walnut and can be made of absorbent cotton or wool securely fastened in an ordinary sponge holder. They should be firmly and rapidly passed over the fauces with a rotary motion and if possible thrust up into the nasopharynx, at least three or four swabs being used at each attempt. A very useful combination for using on the swab is the one so common in otological practice, boric acid one ounce, rectified spirits two and one half ounces, and pure glycerine eight ounces. After swabbing the fauces once with this and then with sterile water the bacterial flora of the anterior pillars was reduced to 25 total colonies and there was an entire absence of staphylococci and streptococci.

The Pathology of Acid Intoxication.—This topic is considered by F. A. Bainbridge in the Arris and Gale Lecture for 1908. He regards acidosis rather as a phase of metabolism than as a separate pathological entity. There is a distinction between acidosis and acid intoxication. The essential feature of the former is the occurrence of certain organic acids in abnormal amount in the blood and urine. The most important of these are lactic and β-oxybutyric and their estimation in the urine furnishes the most accurate index of measuring the intensity of the acidosis. The term acid intoxication should be limited to those cases in which toxic symptoms referable to the organic acids make their appearance. Acidosis may be accompanied by diminution in alkalinity of the blood, but the latter remains as a rule remarkably constant. Normal alkalinity may coexist with a considerable degree of acidosis. Neither the total amount of ammonia in the urine nor the proportion of the total nitrogen excreted as ammonia necessarily correspond with the degree of acidosis. The author believes that lactic acid is never the cause of acid intoxication in man and that its appearance in the urine is either the result of excessive production by the muscles or is secondary to the failure of the liver to convert ammonia into urea. Its occurrence is not due to deficient oxidation of lactic acid by the liver. Concerning the relation of the acetone bodies to acidosis the author says that there are many facts which render it highly probable that β-oxybutyric acid is a normal metabolic product. He states that there is no definite evidence that the acidosis of diabetes differs essentially in its origin from that of carbohydrate starvation in healthy individuals except that the starving man can utilize any sugar which is formed in the body from proteid while the diabetic patient is unable so to do. From this point of view diabetes is a condition of prolonged carbohydrate starvation and the importance of the acidosis lies in the fact that it ultimately leads to acid intoxication and coma. It is well known that in starvation even a severe acidosis is consistent with fair general health, and it is not uncommon for a diabetic patient to excrete for months large quantities of β-oxybutyric acid without showing any symptoms of poisoning. But it does not follow, therefore, that a prolonged acidosis is not harmful to the tissues, although their appearance may be long delayed; the grave metabolic disturbances which usher in diabetic coma probably represent the final defeat of the tissues in their struggle to eliminate the acids, which they produce, and to preserve intact their normal metabolism and chemical constitution. The onset of coma is usually preceded for a day or two and accompanied by a fall in the output of the acetone bodies, the excretion of β-oxybutyric acid may sink from 15 grams or more to as little as one gram, and the acetone and diacetic acid may be either absent or present only in traces. Some estimations of the total amount of acetone in the urine before and during coma show this very clearly and confirm the qualitative observations of others. The large excretion of β-oxybutyric acid in coma is only observed after the administration of sodium carbonate and does not seem to occur when coma takes its normal course. The decreased excretion of acetone in the breath also indicates that the production of acetone bodies is actually lessened and that the kidneys are not unable to carry out their functions. The fall in the output of sugar and nitrogen, the fall of body temperature, and the lessened intake of oxygen all point to a decline in the total metabolism. Equally characteristic features of coma are the diminished alkalinity of the blood and its diminished content of carbonic acid.

British Medical Journal, March 28, 1908.

A Case of Vomiting of Pregnancy.—The patient of J. A. Kendall was a III-para, 27 years, who began to vomit soon after conception. She was seen by the author some five or six weeks later. Nothing in the line of internal medication had any effect on her vomiting and her condition became so deplorable that after consultation it was decided to induce labor. This was done December 29, her last menstruation having ceased on September 27. A bougie was inserted and left in for twelve hours. The next day she had some hemorrhage and pain and the vomiting ceased almost at once. Pains and bleeding continued at intervals until the twenty-third day, when the uterine contents were expelled. Recovery was without incident. The author considers the interesting points about the case to be first, the immediate relief to the vomiting by the passage of the bougie and second, the long interval between the induction of labor and its termination.

Post-mortem Staining of Bone Produced by the Ante-mortem Shedding of Blood.—F. W. Jones gives some interesting facts concerning examinations of bones found in some of the old prehistoric burial grounds of Nubia. He says that the question usually demanding an answer in the archæological investigation of broken and disturbed human remains is that of the time of the infliction of the fracture; was it produced before the death and burial of the individual, or was it caused by grave plunderers after the interment of the body? It is in such cases as this that the diagnostic value of blood staining of bone is so well demonstrated, for in disturbed burials all traces of circumstantial evidence of ante-mortem wounding may easily be absent. The diagnostic differences between the appearance of fractures inflicted before death and those inflicted after death may be very slight indeed; and in dealing with large quantities of disturbed and broken bones these slight differences are easily overlooked. The element of doubt in such cases is generally cleared up by the discovery of the dark-red stains of blood shed presumably by the act of wounding. The stains may be limited to the fractured surfaces and then a characteristic appearance is produced for the rough fragments become deeply dyed and the recesses of the cancellous tissue show darker areas by reason of their more abundant supply of the pigment. As a rule, the staining is by no means limited to one fractured bone, but involves wide areas around the seat of injury; this is especially well marked in fractures of the cranium, where very extensive reddish stains are, as a rule, present upon the flat surfaces of the skull bones. Amongst the bones with which this survey has had to deal there are no other discolorations with which these stains may be easily confused; and even on the deeply-yellow bones that are found in bodies buried in goat skins, or bones turned brown by mummy wrappings, the ante-mortem blood stain shows vividly enough. Jones believes that some of the stained bones examined by him are over 5,000 years old.

Arthrodesis and Tendon Transplantation.—R. Jones defines arthrodesis as the artificial ankylosis of a joint with the least possible sacrifice of bone. The joint thus fixed is quite healthy, usually preternaturally mobile and the muscles which should govern it are either wholly or in part paralyzed. As applied to the lower limb the object is to make a flail joint sufficiently firm to bear body weight without yielding. The author describes the general application of arthrodesis to various clinical situations. He says that (*a*) the operation should not be performed on children under 8. (*b*) It should not be performed until the surgeon is satisfied that the muscles are paralyzed beyond hope. (*c*) The preliminary preparation of the foot by wrench and tenotome must correct all deformity. (*d*) The operation should be so planned that at its completion the bones lie in apposition to the foot, which should be placed in an overcorrected position. This is effected by the exsection of skin flaps, by the shortening of lengthened tendons, and by the removal of graduated wedges of bone.

(e) The wedge should never be taken from the tibia, lest the tibial epiphysis be injured. Splints should be applied and retained until union is pronounced to be complete, and appliances should be worn until the surgeon has evidence that the ankle can bear body weight without fear of yielding. Concerning tendon transplantation the following points are insisted on: (1) The overcorrection of deformity as a preliminary act. (2) The removal of skin flaps to secure the uninterrupted continuity of the overcorrection. (3) The direct and not angular deflection of the tendon. (4) The free tunneling in the one plane through the soft tissues. (5) The firm suturing into periosteum or bony groove. (6) The careful choice, tension, and nursing, of the transplanted tendon. (7) The maintenance of a hypercorrected position until voluntary power is assured to the tendon. (8) The deflection of body weight during walking from the reinforcing tendon. In addition to these, it may sometimes be well to shorten all the paralyzed tendons and prevent the overaction of their opponents by tenotomy.

New Ideas on Fractures.—Lucas-Championière comments on the fact that the modern use of the *x*-ray in picturing fractures and the results of treatment, constitute a certain danger for the surgeon. The public are becoming much more critical and are passing condemnatory judgments on superficial information. He says that he has for many years impressed on his students the following points: "The accurate juxtaposition of the fractured extremities of bones, in order to reproduce the normal arrangement, is a laudable object. It is only achieved in a minimal number of cases. Never tell a patient that you are going to obtain and that you have obtained this exact result. The books teach you that this is the case, but clinically the statement is false, and it will turn against you in several ways. The conditions that are necessary in order that a limb should again become functionally perfect are far from demanding this exact juxtaposition. There are a large number of conditions which are more essential and which you should be more sure of satisfying. Do not insist upon this claim." The author says that theories and mathematical considerations play only a subordinate part in comparison to clinical ideas taught by experience. Many physiological conditions intervene in connection with the vitality and functions of the bone or bones affected. Certain methods in the hands of one man yield certain results, but other men may obtain better results with other methods. In all cases a radiograph should be taken for the surgeon's own protection. Many cases properly treated at the time of injury do badly in the end from the injudicious use of mechanotherapy. The author also calls attention to the fact that the further in advance and the more the public are invited to attend courses of nursing, courses of so-called popular science, and the more pictures or anatomical specimens are shown to them, the more firmly will they hold that they are good judges in the discussion of the most complex medical and surgical questions.

Berliner klinische Wochenschrift, March 16 and 23, 1908.

The Postoperative Treatment of Carcinoma with Homogeneous Rays.—Dessauer and Krüger say that heretofore the use of radium, or Roentgen rays, has been unsuccessful in the treatment of cancer of the deeper parts, because the surface of the body is too seriously damaged before the underlying tissues are affected. Dessauer, who is an electrical engineer, after a long period of investigation, believes that he has found a method of obtaining rays which possess a deep as well as superficial action. These so-called homogeneous rays are produced by having the tubes as far as possible from the subject, by using several tubes, by screening off the ordinarily used, soft, chemical rays, and using the hard, deeply penetrating rays. Certain details in regard to the current employed are indicated, but not explained in detail. One case is reported in which the new method is supposed to have shown its special qualities. The patient was a woman suffering from a recurrence of a uterine carcinoma extirpated in November, 1905. In October, 1907, the radiation was begun, and in December the patient died, after having received 364 hours of treatment. At the autopsy, a considerable amount of carcinomatous material was found in the pelvis, but in the center of the separate nodules there were areas of degeneration which were more extensive than is usually the case. This observation the authors regard as indicating the deep effect of the rays. Burns of the surface, they claim, are not to be feared by this method, though it is possible that the liberation of toxins through cell destruction may be injurious. The method is intended only as a supplementary proceeding after radical surgery.

Gastric Disturbances in Masturbators.—Hirsch says that the great prevalence of so-called nervous dyspepsia has led to the description of a large variety of types of this form of gastric disturbance. In many cases it is difficult to distinguish between organic and functional affections and he refers to several instances in which he was led to suspect the existence of a gastric ulcer, but subsequently discovered that the symptoms were of functional nature and associated with masturbation. The patients of this category are commonly young high school and university students, who frequently come under observation laboring under the self-diagnosis of spinal disease. There is often hyperacidity, though there may be sub- or anacidity. The patients complain of severe epigastric pain, which is sometimes relieved by food, particularly milk, and by alkalies. Pressure over the epigastrium is also of service in lessening the discomfort. While it is better as a rule in the presence of symptoms pointing to ulcer to assume that this lesion exists and treat the patient accordingly, if the usual ulcer treatment fails to give good results the possibility of such a nervous condition must be kept in mind.

Münchener medizinische Wochenschrift, March 28, 1908.

Unilateral Elevations of Temperature in Appendicitis.—Widmer says that in a number of cases of appendicitis he has noticed that there was a perceptible difference in the axillary temperatures of the two sides and suggests that this fact may have interest from the diagnostic standpoint. In a recent instance in which this symptom was particularly pronounced the difference between the records obtained on the two sides at the same time varied from .3° to 1.5° C., usually exceeding .5° C. This difference persisted during the febrile portion of the patient's illness, which lasted eight days, and as the temperatures approached the normal the discrepancy between the readings on the two sides grew less until finally there was no variation. That this observation did not depend merely on some anatomical or other accidental factor was shown by the fact that a little later the patient developed a severe thrombophlebitis of the right lower extremity which was accompanied by a fever going as high at 39.8° C., but here the axillary temperatures were always alike. In explaining this condition the author speaks of the occurrence of various complications of appendicitis which appear on the right side, such as cholecystitis, subphrenic abscess, pleurisy, etc., and suggests that in analogy to the conditions of heat and swelling in the immediate neighborhood of the ordinary inflammatory affections such as localized infections, there is in appendicitis an elevation of temperature which is more pronounced on the side of the disease.

A Theory as to the Nature of Immunity in Living Tissues.—Holzinger placed sugar solutions and yeast in a clay cylinder provided with a semipermeable osmotic membrane of copper ferrocyanide. This was permeable for water but not for the sugar. The cylinder was put into a vessel of water and it was found that as compared with controls the fermentation of the sugar solution proceeded very much less rapidly under these conditions. As the result of observations conducted in this way he reaches the conclusion that a moderate degree of osmosis suffices to restrict the activity of microorganisms in fluids in which ordinarily they would flourish vigorously, while if the osmotic currents are more intense the growth of the organisms and the resulting decomposition of the medium may be completely arrested. Inasmuch as in the living tissues osmosis is constantly going on under ordinary circumstances, he considers that living tissues are immune because of this activity, and that infection becomes possible only when the tissue fluids are at rest as a consequence of such conditions as traumatic injury, blocking of the lymphatic current, drying or chilling of the tissues, etc., which bring about interference with the normal processes of osmosis.

The Tobacco Question.—Dr. George L. Meylan, physical director of Columbia University, as the result of his examinations of a large number of students, has found that most of the statements found in popular textbooks in regard to the injuriousness of tobacco are unfounded and that the average healthy young man may smoke in moderation without appreciable injury. Out of 687 students 205 were smokers. The average height of the smokers was found to be 5 feet 7½ inches, against 5 feet 7 for the non-smokers. The average weight of the smokers was 134.8, and that of the non-smokers 131.4 pounds. The strength of smokers was also a little more than that of the non-smokers.

Book Reviews.

Kokkogene Hautleiden (Furunkel, Erysipel, etc.) Von D. S. Jessner. Königsberg i. Pr. Würzburg: A. Stuber, 1907.

This pamphlet of 102 pages is devoted to the dermatoses due to the invasion of cocci, *i.e.* to impetigo, folliculitis, sycosis, furuncles, erysipelas, etc. The book constitutes a part of Dr. Jessner's lectures on dermatology for practitioners and is a very concise exposition of an important set of skin affections. A number of useful prescriptions appear in the text.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory, Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson College Hospital. March 1, 1908. Philadelphia and New York: Lea & Febiger, 1908.

The March number of *Progressive Medicine* is conducted on the same lines as heretofore, and is as readable and useful as ever. The only change is in the Department of Otology, which is now conducted by Dr. A. B. Duel of New York in place of Dr. B. A. Randall, of Philadelphia. The present issue contains the following contributions: Surgery of the Head, Neck and Thorax, by C. H. Frazier; Infectious Diseases, Including Acute Rheumatism and Croupous Pneumonia, by R. B. Preble; Diseases of Children, by F. M. Crandall; Rhinology and Laryngology, by D. B. Kyle; and Otology, by A. B. Duel.

Essentials of Modern Electro-Therapeutics. An Elementary Textbook on the Scientific Therapeutic Use of Electricity and Radiant Energy. By Frederick Finch Strong, M.D., Instructor in Electro-Therapeutics at Tufts College Medical School, Boston. New York: Rebman Company, 1907.

The author of this book is of the opinion that the absence of a simple, "up-to-date," and reliable elementary textbook is the greatest and, in some cases, the only reason for the exclusion of electro-therapeutics from the curricula of medical schools. The present work is an attempt to supply this want. That it is "simple" and "elementary" will not be disputed by any one; indeed, it is so "simple" and "elementary" that the subject of physiology from an electrical standpoint is discussed or dismissed in six pages. A large part of the book is taken up with illustrations, there being one to nearly every page of text.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund von Neusser, M.D., Professor of the Second Medical Clinic, Vienna; Associate Editor of Nothnagel's Practice of Medicine. Authorized English translation. By Andrew MacFarlane M.D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College; Attending Physician to St. Peter's and Child's Hospital and Albany Hospital for Incurables. Part I. Dyspnea and Cyanosis. New York: E. B. Treat & Co., 1907.

Diagnosis at long range, through the mediation of the typewritten reports of the laboratory worker has apparently become so simple nowadays that it is refreshing to turn back for a moment to the older methods of careful and thoughtful clinical observation. In this volume Von Neusser takes the two symptoms of dyspnea and cyanosis, so commonly encountered, but so often misinterpreted, and illuminates them with the painstaking thoroughness characteristic of the Vienna school. The first part of the book is devoted to these conditions, as appearing in disorders of respiration, and the second part to their occurrence in disturbances of circulation. Each of these groups is subdivided into sections in the various affections coming in question, the whole forming a model of complete yet concise description and deductive logic. The translator has done his part in rendering the text into acceptable English, and it is a pleasure to commend this admirable clinical study to the attention of all physicians.

Comparative Electro-Physiology, a Physico-Physiological Study. By Jagadis Chunder Bose, M.A., D.Sc., Professor Presidency College, Calcutta. With illustrations. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1907.

The present work by Professor Bose corroborates, by means of electrical response, the various results previously established by him in experiments recorded in his books, entitled "Response in the Living and Non-Living" and "Plant Response as a Means of Physiological Investigations." In the first book certain similarities of response in inorganic and living substances were demonstrated by means of the method of conductivity variation. In the second it was shown that plant tissues give a true excitatory response to electric stimulation. This response is not confined to sensitive plants like mimosa, but is universally present and obtainable from both the roots and stems and from the leaves of plants. Both electric twitches and tetanus were obtained in these experiments, and it was further noted that the effects on plants of fatigue, temperature, stimulants, and poisons could be definitely recorded. Professor Bose also showed very clearly experimentally, how plant energy is supplied by the environment.

The present volume is devoted chiefly to exhaustive experimentation into the electro-physiology of plants, and, to a less extent, into that of animals. For the study of the variation of excitatory effects in nerves the author has devised a very delicate instrument, the conductivity balance, the principle of which is carefully explained. Nerve conductivity and response to excitation, he finds, are similar to those of muscle. The response of the isolated vegetal nerve is indistinguishable from that of animal nerve.

The author has been able, he states, to trace out the gradual differentiation of various responsive peculiarities, characteristic of given tissues, from the simplest types in the plant, to their most complex in the animal. The attempt to explain these responsive phenomena is, in general, on the consideration of that fundamental molecular reaction which occurs even in inorganic matter.

Essentials of Obstetrics. By Chas. Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital and Obstetrician and Gynecologist to the Hospital, etc. Assisted by Harold F. Jewett, M.D. Third Edition, Revised and Enlarged. New York and Philadelphia: Lea Brothers & Co., 1907.

The present represents a complete revision of the book in which it was originally intended to place the essentials of obstetrics within easy grasp of the medical student as an introduction to the more elaborate treatises and as a guide in following the didactic and practical teaching at the Long Island College Hospital and Medical School. Most attention has been given to practical topics rather than to theoretical discussions, matters of historical interest, etc. There are only eight chapters in the work, including one each on anatomy of the female genital organs, physiology of pregnancy, of labor, and of the puerperal state, the pathology of pregnancy, of labor, and of the puerperal state, and a concluding one on obstetric surgery. The illustrations are well selected and the book deserves commendation as an excellent manual for the student of obstetrics, as it is concise and yet sufficiently complete to contain all that is needed for a working knowledge of the subject. In describing the obstetric forceps the author unfortunately omits all mention of the solid blade instrument, which offers many advantages, particularly in the hands of the beginner.

Principles and Application of Local Treatment in Local Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, Consulting Dermatologist to the Randall's Island Hospital, to the Manhattan Eye and Ear Hospital, and to the Hospital for the Ruptured and Crippled, etc. New York: Rebman Company, 1907.

The author presents in four well-arranged lectures the various principles underlying the local treatment of skin diseases. Those drugs are particularly commended which have been found of value in the daily treatment of large dispensary classes. In the first lecture are discussed the relative values of exclusively local treatment and that combined with dietetic, hygienic, and other measures. The anatomy and physiology of the skin are also touched upon in relation to the purposes, effects to be expected, and necessary limitations of local treatment. In the second lecture reference is made to the ingredients, actions, and modes of applications of the various medicaments. In the third the author mentions briefly the surgical treatment connected with dermatological practice and the uses of electricity, the *x*-rays, radium, Finsen light, etc. The latter half of the book is given up to the local treatment of the more common skin diseases, special attention being accorded to eczema. The little book contains many practical suggestions not ordinarily to be found in textbooks. It is not intended for the specialist so much as for the general practitioner, and its value is largely due to the fact that, instead of mentioning a long list of prescriptions available in each disease, only a few medicaments are given, but these are known to be of proved efficiency.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

215th Regular Meeting, Held March 6, 1908.

DR. EDWARD G. JANEWAY, PRESIDENT *pro tem.*

A Bullet in the Lung.—Dr. W. GILMAN THOMPSON presented this case, together with radiographic pictures showing the bullet imbedded in the lung. The patient was a butler, who, while skylarking in November, 1907, was accidentally shot. The bullet struck the right collar bone anteriorly; here a fragment broke off, while the major part of it passed into the right lung, where it was now lodged behind the third rib, and two and a half inches from the back. For three weeks after the accident the patient suffered from profuse hemoptyses; these then ceased entirely and he was now apparently enjoying perfect health. There was no emphysema, and the bullet gave rise to no physical signs at present.

Amputation at Hip Joint for Tuberculosis.—Dr. CHARLES MCBURNEY showed this case. The patient was a boy of twenty who was operated on by Dr. McBurney nine years ago for tuberculosis involving the left hip joint and acetabulum. Prior to that he had been under treatment for about eight years, with various kinds of mechanical apparatus. He had become much emaciated, the affected limb was wasted, and there was a large sinus, communicating with the hip joint, and discharging tuberculous material. The advanced condition of disease entirely negatived any but a radical procedure. The limb was amputated at the hip, the acetabulum freely exposed, and all diseased tissue completely removed with the curette. During the operation, hemorrhage was effectually controlled, a small incision in the abdominal wall having been made, through which the finger of an assistant directly compressed the common iliac artery. The boy made an excellent recovery from the operation, his general condition rapidly improved, and he had remained well since. He now wore an artificial limb which was fairly satisfactory. In connection with this case Dr. McBurney emphasized the fact that a radical operation should not be too long delayed in dealing with some cases of chronic tuberculosis of the hip joint, which had been unsuccessfully treated for a long time by conservative methods. In some cases long-continued confinement in bed was undesirable, and in such radical measures might become imperative. The speaker said he had operated on several of these cases in a similar manner, and the shock accompanying the hip joint amputation was really slight. This he attributed to the small amount of blood that was lost in the course of the operation. Hemorrhage, as is well known, is the true explanation in many cases of the post-operative condition called shock.

Dr. GEORGE L. PEABODY said he had at present under observation a woman whose condition illustrated what would perhaps have happened to this boy if he had not been operated on. The patient he had in mind had been treated "conservatively" for tuberculous disease of the hip joint for years and she now showed amyloid changes in the liver, kidneys, and spleen. If the affected limb had been removed in time, her life might have been prolongd. She was now developing a tuberculous peritonitis.

Dr. ANDREW J. MCCOSH said that, in his experience the result in the case shown by Dr. McBurney was unusually gratifying. In fact, it was the only case he had seen in which a permanent recovery had taken place. He had been rather disappointed in the results of these operations. He entirely agreed with Dr. McBurney that in certain cases the operation was distinctly indicated. He had never before seen a patient after amputation at the hip joint who could walk as well with an artificial limb or who could bear its weight for the whole day without marked discomfort.

Dr. MCBURNEY, in closing, said that he had resorted to amputation in three cases of incurable tuberculosis of the hip, and that permanent recovery had followed amputation in all of them. He looked upon the operation in some cases as entirely rational, and he felt confident that the patient presented would have died within a year if he had not been radically operated on. He would not, however, recommend this radical procedure in cases where there was likelihood of a cure by other means. The result of such an operation was beneficial not only from a physical but from a mental standpoint. Some patients who have been subjected year after year to the confinement of an apparatus or to hospital treatment deteriorate not only physically but mentally.

Recurrent Jaundice: Death in Third Attack; with Autopsy.—By Dr. George L. Peabody. (See page 638.)

Dr. LEWIS A. CONNER said that some German writers had called attention to the fact that sugar was apt to be present during the earlier stages of cancer of the pancreas, but that it usually disappeared in the later stages.

Dr. PEABODY said that when he first saw this patient, which was only eleven days before she died, there was no sugar present in the urine, and none was found subsequently, although the urine was frequently examined.

A Remarkable Abdominal Aneurysm, with Specimen and Photographs.—By Dr. W. GILMAN THOMPSON. (See page 636.)

Constructive Surgery After Extensive Gunshot Wound of the Abdomen.—Dr. W. M. POLK read this paper and presented the patient. (See page 633.)

THE following clinical reports were presented at the 213th regular meeting, held January 3:

A Clinical Contribution on Acute Hemorrhagic Pancreatitis.—Dr. FRANCIS P. KINNICUTT, in a paper on this subject, reviewed the experimental work and clinical observations bearing upon the pathogenesis of the disease, and referred to the value of studies of the urine based upon the observations of Opie, Mayo Robson, and Cammidge, as an assistance in diagnosis. The clinical history of and anatomical findings in a case that recently had come under his observation were given in which the diagnosis of acute hemorrhagic pancreatitis had been made and confirmed at autopsy. Death occurred five days after the beginning of the illness from an intense toxemia, the result probably of autolytic products liberated in the gland. The macroscopic anatomical findings were a large hemorrhage occupying the entire middle third of the pancreas, with hemorrhagic infiltration of the remainder of the organ, necrosis, and a more or less uniform hemorrhagic exudate covering its surface. The fat necrosis was very extensive throughout the gland, in the mesentery, and in the fat tissue overlying the kidneys. There was absence of a peritoneal exudate and of a general peritonitis. A very thorough examination threw no light on the pathogenesis of the disease in the case described. The gall-bladder contained no gallstones; the common bile duct and the duct of Wirsung opened by separate orifices into the duodenum; they were free from calculi and patent throughout. The orifices of the ducts were not dilated; the accessory pancreatic duct was present, with the orifice at its usual duodenal site. The hemorrhagic exudate was apparently sterile. The gland showed no signs of softening, precluding the supposition of a bacterial invasion from the duodenum as the exciting cause of the disease. Dr. Kinnicutt said that in the light of the experimental work of Eppinger, Polya, Williams, and Busch, another possible source of acute pancreatitis in the human subject was suggested. Williams and Busch succeded in producing the characteristic lesions by forcing the duodenal contents into the diverticulum of Vater through the artificially dilated orifice. They suggested that the passage of gallstones might open the way for the entrance of these contents in

human cases. The theory necessitated the conception of the segmental contractions of the intestine described by Cannon. In conclusion the speaker suggested that the progressive familiarity with the symptomatology of acute pancreatitis should permit of correctness in diagnosis as frequently as in acute bowel obstruction and perforation of the stomach, with which the condition was most frequently confused. (This paper will be published in full later in the MEDICAL RECORD.)

A Case of Typhoid Spine.—Dr. LEWIS A. CONNER reported the case of a coachman, 42 years old, who was admitted to the New York Hospital on August 21, 1907. He was a man of good habits, and his previous history was unimportant. There was no history of tuberculosis, syphilis, or rheumatism. Four days prior to admission, after vague symptoms of two or three weeks' duration, he had gone to bed suffering from fever and prostration. His case proved to be one of typhoid fever, of moderate severity, with an unmistakable Widal reaction and a positive blood culture. On the twenty-third day of his disease, when the temperature had fallen to below 101°, and defervescence was apparently progressing normally, the patient developed severe shooting pains in the lumbar region, especially on motion. These persisted in a severe form for perhaps two weeks, and then gradually subsided; at no time, however, were they severe so long as he remained absolutely quiet, but the least change in position would give rise to excruciating pain which radiated around the back and abdomen. Coincident with this pain his temperature rose to 103.5° and remained high for three or four days; then it gradually fell, but continued above the normal for several weeks. A blood count, made on September 9 (the date of appearance of lumbar pain), showed 11,800 leucocytes; two days later the number had increased to 14,400, with 83 per cent. of polynuclears, three days later, 17,600, with 84 per cent. polynuclears. On September 12 pain in the spine was present only on motion, and jarring the spine elicited a sharp pain. There was no tenderness on pressure; no deformity nor prominence; no subcutaneous edema. Upon rectal examination, there was no tenderness over the sacrum. The reflexes were normal; there was no clonus; no Babinski. An *x*-ray picture, taken on October 7, showed a shadow completely filling the intervertebral space betwen the fourth and fifth lumbar vertebræ. On October 1 the pain had disappeared excepting on motion, and the patient was able to sit up. A month later he began to walk although his back was very stiff. This stiffness had persisted up to the present time, and prevented him from bending forwards, although his symptoms were gradually improving. The case was apparently one of typhoid spondylitis, with distinct bony changes in the lumbar vertebræ, as evidenced by the *x*-rays.

Two Cases of Injury to the Eye by Pieces of Steel, with Location of the Foreign Bodies by the Skiagraphic Method.—Dr. CHARLES STEDMAN BULL reported these cases. The first case was that of a man, 32 years old, who was brought to the New York Eye and Ear Infirmary on November 18, 1907, with the following history: Nine weeks prior to that date the right eye had been penetrated by a piece of steel flying from a lathe, and the sight was destroyed at once. Three attempts had been made in a hospital in Philadelphia to remove the piece of steel, but without success. When Dr. Bull saw him, the eyelids were much swollen, there was marked orbital cellulitis, and the eye protruded half an inch beyond the orbital margin and was immovable. The wound of entrance was on the temporal side, about 3 mm. from the margin of the cornea. There was no reflex from the fundus and the pupil was dilated *ad maximum*. A skiagraph was made of the eye and orbit, and the piece of steel was found to have penetrated the sclera posteriorly on the temporal side of the optic nerve, with its point imbedded in the lesser wing of the sphenoid. All attempts to remove the foreign body by the giant magnet failed. The patient was then etherized and the eyeball was enucleated in the usual manner, and the optic nerve divided far back towards the apex of the orbit. It was found impossible to remove the piece of steel with the eyeball, owing to its being imbedded in the bone, and it required considerable traction force by a pair of large forceps, worked from side to side, before the end could be disengaged from the bone. When removed, it was found to measure 1.75 mm. broad by 21 mm. long, and weighed 135.85 mg. The patient was now doing well, and had an excellent artificial eye.

The second case was that of a man 21 years old who was brought to the New York Eye and Ear Infirmary on December 8, 1907, with the following history: While hitting the end of a cold chisel with an iron hammer, a small piece of steel struck the right eye, causing severe pain and some loss of vision. When Dr. Bull saw the patient, six hours after the injury, there was a small wound in the sclera on the nasal side, about 3 to 4 mm. back of the corneal margin, just above the horizontal meridian, through which vitreous and blood protruded. There was no blood in the anterior chamber nor in the vitreous humor. The vision was 20/40. After dilatation of the pupil, the opthalmoscope showed a glistening white spot in the ciliary region corresponding to the external wound, and surrounded by pigment. A skiagraph was made of the eye and the foreign body was then located by the *x*-ray apparatus and its position plotted on the chart made for the purpose. Two different plates were made, and the piece of steel was found outside of the eye in the orbit on the nasal side, near the orbital plate of the ethmoid. Its apparent size on the chart was 1.5 mm. by 0.5 m. Its location was 15.25 mm. back of the center of the cornea, 2 mm. above the horizontal plane, and 12.5 mm. to the nasal side of the vertical plane. The foreign body must have struck the eye with sufficient force to penetrate the sclera, and then bounded back into its final position in the orbit. The eye was perfectly quiet and painless, and the wound in the sclera had healed, but the vision had fallen to 20/200.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 23, 1908.

DR. W. S. STONE IN THE CHAIR.

Fibroid Tumor of the Vagina.—Dr. A. REICH presented this specimen. The patient was 23 years old, married and consulted the doctor for dyspareunia. Examination revealed a bulging of the left labium majus. The hymen was ruptured, but the introitus was obstructed by a tumor. The growth could be felt extending almost four inches and laterally from the urethra to the rectum, taking in the left side of the vagina. Above and to the left the cervix could be reached; the uterus was small and anteflexed and not connected with the growth in any way. The removal of the tumor was quite simple, it being readily rolled out of its bed with the aid of the handle of the scalpel. The fresh specimen weighed 530 grams. Its length was 13 cm. and its longest diameter was 7.5 cm. The surface was nodular. On section the tumor had a distinct capsule and proved to be a fibroid with a few muscle cells. These tumors were seen in the white, but not in the colored race.

Cervical Polyp, Showing Evidences of Possible Ulceration or Early Malignancy.—Dr. A. BROTHERS presented this specimen. The patient was 46 years old, married, seven children, the last born eleven years ago. She had one early miscarriage ten years ago. The menses were regular, but continued over a period of ten days. In the intervals she noted at times a blood-stained, yellowish discharge which was free from odor. Ten years ago she

was curetted after a miscarriage. She had not complained of any pelvic trouble. The uterus was somewhat enlarged and a polyp, the size of the tip of the thumb, was seen protruding from the cervical os. This was removed and the uterus was curetted without anesthesia. The laboratory report of the hardened specimen was to the effect, at first, that the growth was benign. A later report, after the specimen had been examined by another pathologist, was that appearances looked suspicious and that it was impossible to differentiate between an ulcerated area of simple or malignant origin. He was advised to keep the patient under close observation, which he said he would do.

Irregular Uterine Discharge and Bleeding Seven Years After the Menopause.—Dr. A. Brothers reported the history of a woman, 48 years old, married 25 years, three children, the last seventeen years ago, no miscarriages. She passed the change of life seven years ago. For several months she noticed a vaginal discharge without odor and three weeks ago a little blood. She felt that she was losing weight. The vagina was relaxed, the cervix atrophied and flush with the vaginal roof. The os had a somewhat eroded appearance, evidently the result of a discharge from the uterine interior. A diagnosis of senile endometritis was made. He advised probatory section of the cervix and curettage to be followed by atmocausis. After dilating the small cervix the sound was passed into the uterus to a depth of two and a half inches. The vaginal fornix about the cervix looked loose and injected. The curette brought away very little mucosa. A portion of the cervix was exsected from each side of the cervix, extending into its canal, and the little wounds were sutured to check oozing. Atmocausis for three minutes was done with the Dührrsen apparatus, the outer shield being passed only beyond the external os, as the canal was too narrow to permit of its deeper introduction. The laboratory report of the microscopical examination of the mucous shreds from the uterine interior and of the sections from the cervix was negative. The patient would, however, have to be watched for a long period of time.

Endothelioma Discovered in a Uterine Polyp.—Dr. A. Brothers reported the history of a patient, 48 years old, who was referred to him for the removal of a fibroid polyp which protruded from the uterine canal and which was responsible for excessive hemorrhages. She was very anemic, and he did not know whether this was due to the hemorrhages or to cachexia. The cervix was slit anteriorly and the pedicle of the tumor, which was the size of a plum, was followed well up to the fundus, where it was snipped off and the uterus was curetted. The cervical canal was then sutured. The pathologist pronounced the tumor to be a distinct endothelioma. The patient refused to allow the removal of the uterus.

Adenocarcinoma of the Uterus Determined by the Examination of a Necrotic Uterine Polyp; Abdominal Hysterectomy.—Dr. A. Brothers reported the case of a woman, 45 years old, who had been having uterine hemorrhages. A necrotic polyp about the size of a plum was felt just within the external os and was removed without anesthesia, the uterus being curetted at the same time. The pathologist reported it to be adenocarcinoma. Later he removed the uterus by the abdominal route. The broad ligaments and glands were free from invasion. The patient made a rapid recovery with a prognosis fairly favorable against the probability of recurrence.

The Management of Febrile Conditions After Abortion or Labor.—Dr. A. Brothers gave an abstract of this paper, which he read at the December meeting (see page 167).

Dr. J. Clifton Edgar said that the keynote of Dr. Brothers' paper had to do with the differences in mortality and morbidity in institutional work and in private practice. He quoted figures which were accepted the world over. Mortality in institution work did not exist practically, being about 1 in 1,100. We had no accurate statistics to offer in private practice. None were published. We did not know what the mortality in puerperal sepsis was in this city, but it certainly was high, in fact too high. Many cases of septicemia in private practice were reported as cases of pneumonia, empyema, and various other conditions which masked the real cause of death. The prevention of septicemia in private practice had to do with the painstaking and conscientious attention to details. The whole subject of labor should be looked upon as one would a surgical procedure. There was a prevailing opinion among physicians, the laity, and nurses, that childbirth was a physiological process and that in a general way it would take care of itself. It would be much better if they looked upon it as a pathological process. From a study of 635 cases of immature labor there were 242 abortions in institution work and no mortality. Of 175 cases of premature labor there was one death from placenta previa. Among their cases of premature labor they had but four deaths, and one only from sepsis, making a mortality of 0.6 per cent. in tenement practice. It was generally believed that septicemia in private practice was not common. The classification of Dr. Brothers he thought was a wise one. He thought more attention should be paid to the endometrium because in a large proportion of the cases the endometrium was the first involved. It was the endometrium which gave rise to the predominant symptoms in the majority of the cases. The question of great importance arose, How much and how little to do with regard to interference. Of the 242 abortions, 211 were curetted and actively, 3 were relieved of decidua digitally, and 28 were treated expectantly. He thought they should be less aggressive as pregnancy advanced. During the last few years the inclination was to do as little as possible in the uterus, and he condemned the use of the curette. He found much benefit was derived from the use of the ice-bag; it favored involution, shut off the vessels, and inhibited bacterial invasion. Ergot acted along the same lines. He also favored alcohol injections and used 50 per cent. or even higher percentages, only when benefit resulted. The silver salts he had used extensively. He was speaking only of endometritis cases and he was sure that it was best to let the uterus alone, after making sure by digital means that it was empty.

Dr. Hermann J. Boldt asked Dr. Brothers if the gentleman who reported such a large number of abdominal sections in diffuse puerperal peritonitis, with a recovery of 60 per cent., stated in what class of cases and in what period of peritonitis the operation was done.

Dr. A. Brothers replied that the statistics concerned cases of puerperal peritonitis at different stages.

Dr. Hermann J. Boldt said that the question of streptococcic infection seemed to be one that confronted them and, so far as his personal experience was concerned, it seemed to be a serious matter. He was satisfied that, in certain forms of puerperal sepsis there was no method of treatment that was going to avail at the present time. What might come to them in the future from the use of seras he did not know, but so far as active intervention in puerperal fever or a bacteriemia might be of aid he did not know how they were going to benefit or save patients. There was another class of patients in whom the bacterial invasion was not so intense, where the amount or number of streptococci thrown into the circulation was smaller and the infection remained localized in the uterus, and subsequently became diffused and caused peritonitis. He believed in that class of patients some might be saved if they resorted to early surgical intervention. The question arose often whether the patients would not get well without operation. On the other hand, by radical operation, in cases where the peritonitis was of the asthenic form, where the patients lived three or four weeks and subsequently died, if operated upon early enough

such patients, in many cases, might have been saved. When there was a thrombosis of the pelvic vessels there was no other form of treatment which would save the patients. When he found patients ill for a few days following the puerperium and not getting better, with no products of conception in the uterus, with symptoms of septic infection continuing, under these circumstances he did not hesitate to operate. He believed the method of treatment of diffuse peritionitis by operation, flushing out the abdominal cavity with large quantities of solutions, was not going to benefit the patient. If they were left alone, with thorough drainage from below and in the sitting position, at an angle of about forty-five degrees, as suggested by Fowler, they would do better. The traumatism produced in manipulation, destroying the epithelial covering, caused a rapid invasion of the system by the organisms. In the more chronic forms in many cases early intervention would save a certain number. If the Board of Health would adopt the rule observed abroad of compelling the general practitioner and midwife to report every case in which there was the existence of septic infection, the mortality might be lessened.

Dr. Charles Jewett said that the valuable paper of Dr. Brothers was a timely one, and the oftener such teachings were repeated the better for the general practitioner. The puerperal septic mortality in general practice remained about as it was in preaseptic days. This was due chiefly, no doubt, to the fact that many obstetricians lacked surgical training; they took few or no precautions against infectious exposures and their aseptic technique was inadequate if carried out at all. Yet infection might sometimes occur independently of the obstetrician, as by the patient's own fingers or by other exposures about the time of labor. The curette in abortion was often useful for prevention if used when the uterine cavity was aseptic. In the presence of sepsis it was responsible for a large proportion of the deaths. Of five cases of puerperal infection seen within little more than two weeks, three had been curetted. Two of the curetted patients had died and the third was in a critical condition. The non-curetted patients were recovering. For treatment in the average case he relied mainly on supporting measures, plenty of water and air. Intrauterine alcohol or formalin irrigations or packs he thought of doubtful value. If the infection was limited to the uterine cavity by small cell infiltration, these measures were not needed; if the infection had passed into the deeper structures they did not reach it. While he had formerly made use of repeated douching, for the foregoing reasons he had abandoned it. Hysterectomy he had done in a few instances with little satisfaction. Successful cases were every now and then reported, but it was very difficult to define the indications. It could be of little avail except when they could be sure that the infection was confined to the uterus, and that was usually impossible. The ligation of the ovarian veins was a rational measure in infection of the veins in the broad ligament. A number of recoveries had been reported, but the operation must be done early. Most frequently the general condition of the patient was such as to discourage a major operation. He was still using the vaccine treatment in the hope of better results than he had thus far obtained. So far it had appeared to be of value in the milder and localized infections. In a case now under the opsonin treatment the woman was losing ground and was likely to die. Owing to the time required for the preparation of the vaccine from blood cultures, Prof. Van Cott, under whose direction the vaccine measures had been carried out in his service was now using stock preparations. In supposed streptococcic cases an emulsion representing nine strains of that organism had been used, pending the identification of the infecting organisms.

Dr. H. N. Vineberg said that the practice of obstetrics among the poor people was of interest to him, and to his mind there was no improvement in mortality or morbidity there. They should adopt the methods that had been adopted in Europe; that was, to have thoroughly trained midwives and have them under proper regulations. The doctors got so small a fee for waiting eight, ten, or more hours; in the practice among the poor one was expected to wait even longer than among the better class of patients. Dr. Vineberg agreed with what Dr. Brothers had said in regard to the cases of spontaneous miscarriage or abortion unattended with fever; when he came across such cases he did not hesitate to treat them as if there was criminal intent. That was borne out by the subsequent facts. They saw a large number of cases of spontaneous miscarriages without temperature, even in the dirtiest surroundings. He believed that the great trouble in private practice was that these cases were not recognized early enough; this caused the great mortality. The patients went on for some time before the true condition was recognized. No doubt in institutions the morbidity was not nearly as high as in private practice; these cases were treated at once according to the conditions presented. In Leopold's practice in Dresden he said he was surprised at the morbidity that existed. There was a class of patients not mentioned, where the women ran temperatures of 102° and 103°, and apparently in fairly good condition and without anything found on examination of the pelvis and without the uterus being enlarged. In many of these cases there might be a slight thickening of the pelvic veins. Such cases should be left alone. Fresh air was of great value in such cases. With regard to hysterectomy there were few cases in private practice in which he felt this operation was justified.

Dr. A. Brothers closed the discussion. He believed that too much blame was placed upon midwives. He was not opposed to midwives, but in this country they had not the proper regulation of them that they had in Europe. After all it should be remembered that people who live in glass houses should not throw stones, and they as physicians should not hammer the midwife. They should first make sure that their own work was up to date. When it was necessary to perform a hysterectomy in these cases he did not know.

Dr. George L. Brodhead said that too much stress could not be laid upon the importance of asepsis in obstetrics, for it was appalling to see how much of this work in the tenements was carried out. The carelessness and neglect shown was nothing less than criminal. Among the last 3,600 cases at the Post Graduate, the service being very largely outdoor, only three deaths from sepsis had occurred, showing that obstetrics, when properly done, would give a very low death rate. When confronted with a case of septic infection one should first be sure that the uterus was empty; for exploration and the removal of secundines or blood clot the fingers were the best instruments. If the uterine cavity was too long for the examining finger, one must of necessity use the curette, but it should be remembered that the curette was a dangerous instrument and should be used with the greatest care.

Dr. James N. West said that in seventeen years' practice in diseases of women he had had a fair amount of experience in obstetrics, such as would come to any young man in practice. He had had but two cases of puerperal sepsis, and both were very bad cases. In one the symptoms came on the sixth day, in the other on the eighth. Both had been infected by dirty midwives, and they both got well. The uterus was washed and swabbed with pure carbolic acid; he also used peroxide of hydrogen as a wash, following it with a 2 per cent. solution of carbolic acid. The usual supporting measures were used as well.

Dr. J. Clifton Edgar said that he limited the use of alcohol injections to those cases of endometritis with sapremic symptoms. At the Manhattan Maternity an alco-

holic injection was used after the uterus was emptied and it was repeated once unless the symptoms were better by the first injection. It was repeated once or twice only. It depended entirely upon the effect resulting from washing out the uterus.

Uterine Cysts.—Dr. Ulysses Kahn read this paper. Cases of cysts of the uterus were rare and described as curious. There were only two orders of cystic formation in the uterus. One was frequent and appeared like a complication or degeneration of primitive tumors, like sarcoma or fibroma. These were the fibrocystic tumors in which the cyst appeared as a secondary element. The second order was where the cyst appeared as one isolated and which might appear a unique phenomenon without any other lesion. He divided them into five classes. (1) Mucous or follicular cysts. The mucous cysts of the fundus were rarely met with. They did not exist before menstruation, and after its suppression the glands became atrophied and might then form small cysts. The mucous cysts were small, sessile, sometimes provided with a pedicle, and on the mucous membrane. They might number ten, twenty, or even more. The diagnosis was difficult because they did not appear to bother the patient much. The prognosis was good. (2) Hydatid cysts. These were divided into primary and secondary. These cysts might be attached to any part of the uterine cavity and might be termed interstitial, subperitoneal or submucous. They might be as large as a fetal head or an orange. They were of slow growth and it was only because of the size of the growth that the surgeon was consulted. If situated at the cervix it might be incised and drained after dilatation. If seen during labor it should be incised. If it was large and subperitoneal hysterectomy might be indicated. (3) Embryonic cysts. These cysts were always near the uterine cornua and on a level with the fundus. They lay in the midst of muscular tissue, or just under the peritoneum. They were generally small. Their shape was irregular, round, or elongated. The walls were thin. Their contents were serous or serosanguinolent. They always existed with other lesions of the genital organs. The internal wall was covered with cylindrical epithelium. On the external wall the cyst mingled intimately with the uterine parenchyma. The real cause for these cysts was the presence in the uterine parenchyma of epithelial deposits, and, for that reason, were always dependent upon a tubular inflammation. The diagnosis was difficult. The treatment was radical. (4) Serous cysts. (5) Hematic cysts. These were rare. They were of two kinds, one existing as a complication of angioma, the other was a transformation of preexisting cysts. The cyst manifested itself by the development of a tumor which might become absorbed, or give rise to repeated intracystic hemorrhages, and ending by rupture and death. The diagnosis was impossible. These cysts might contain blood, lymph, mucous tissue, or products of sarcomatous degeneration.

Dr. James N. West said the condition was an extremely rare one, and he had never recognized a cyst of the kind referred to by the reader of the paper.

Dr. H. N. Vineberg said he recently came across a cyst of the uterus. The patient had been operated upon three times, first for appendicitis, after which a hernia developed. This hernia was operated on and this was followed by suppuration. The woman left the hospital with a good-sized hernia and came to him. She had this hernial protrusion. On the left side he found a cystic mass the size of a fetal head. He looked upon it as an intraligamentous cyst. He could not tell where the cyst began and the uterus ended, or *vice versa*. He cut the uterus across and shelled the mass out. It was a cyst of the uterus attached near the left horn. There was no cleavage and he did not find any ovarian tissue. He hoped to be able to report further upon it later. Dr. Vineberg reported another case to illustrate the value of sending specimens to the laboratory. A young woman who had never menstruated, 25 years of age, had a cervix which had the appearances of malignancy. Under an anesthetic an examination of it did not impress him as to its malignancy about the marked erosion, but as an endocervicitis. He incised it and found it to be tuberculous. In dilating the cervix he found a large quantity of sebaceous material from a small cyst situated in the interior, about on a level with the internal os. It was the size of a walnut. He enucleated it, but unfortunately had not as yet sent it to the pathologist. Clinically it looked like a sebaceous or a dermoid cyst.

Philadelphia Pediatric Society.

At a stated meeting held March 10, Drs. C. F. Judson and W. N. Bradley exhibited "A Case of Sporadic Cretinism." The patient was a diminutive child, 33 months old, tardy in development, backward in intelligence, with belated dentition, coarse hair and skin, fatty masses above one clavicle and undemonstrable thyroid gland. Notable improvement followed upon administration of small doses of thyroid gland. Dr. James K. Young exhibited "A Case of Tuberculous Dactylitis." The patient was an undersized Italian boy, seven years old, who presented tuberculous spondylitis with psoas abscesses and spindle-shaped swellings of several fingers. Dr. Young also presented a report of "A Case of Streptococcic Spondylitis." The [illegible]ent was a girl who presented swelling about one ankle and an abscess at the opposite elbow-joint, in addition to inflammatory enlargement of the thumb of the left hand. From all of the lesions fluid was evacuated in which only streptococci were found. This was believed to be the first case of the kind placed on record. Drs. C. F. Judson and H. L. Carncross reported "A Case of Polyencephalitis Superior," and they exhibited the patient, a young girl, with almost perfect recovery. Dr. E. Burvill-Holmes read a paper entitled "Lumbar Puncture." He pointed out the ease and the simplicity with which lumbar puncture can be performed, and the valuable service it is capable of rendering both in diagnosis and in treatment. Dr. C. H. Muschlitz read a paper entitled "Congenital Unilateral Hypertrophy, with Report of a Case." The patient was a child four months old that presented enlargement of the upper and lower extremities on the left side, and which on *x*-ray examination was found to be due largely if not wholly to increase in the subcutaneous and muscular structures, the bones being little if at all involved. Drs. B. F. Royer and J. D. Wilson reported "A Case of Incomplete Heterotaxy with Unusual Malformation of the Heart." The patient was a child admitted to the Municipal Hospital for scarlet fever, but presenting in addition cyanosis of the surface, clubbing of the fingerends, increased area of dullness in the left hypochondrium, diminished area of dullness in the right hypochondrium, and a loud cardiac murmur. During convalescence varicella occurred as a complication and death took place on the twenty-fourth day. Post-mortem examination disclosed complete transposition of the abdominal viscera, namely liver, spleen, stomach, intestines, pancreas, kidneys, blood-vessels, and also transposition of the lungs, the thoracic vessels and the esophagus. There were five spleens. The heart, however, presented most extraordinary conditions. It was made up largely of one capacious ventricle from which both aorta and pulmonary artery took origin. In addition there was a small ventricle into which the veins entered and which communicated by means of a deficiency in the septum with the larger ventricle. The oval foramen was patulous and there was a defect in the auricular septum. The ductus arteriosus was wanting. The aorta passed backward and to the right and downward, without forming the normal arch. There was no innominate artery, the carotids and subclavians arising as independent branches.

New Instruments.

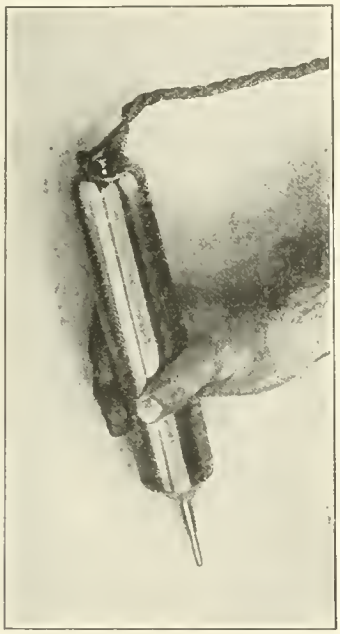
A NEW MOTOR FOR BONE SURGERY.

By W. SOHIER BRYANT, A.M., M.D.,

NEW YORK.

THE motor is of 3-10 horse power; 3 phase; 10 volts; 15,000 revolutions per minute; 185 cycles; 2 poles. Its weight is 7 pounds 5 ounces; diameter, 2⅛ inches; length of barrel, 9½ inches. The motor can be used as a drill, as a bur to enlarge a bone cavity, as a fraise to cut an osteoplastic flap, and, lastly, as a trephine.

The above description shows that this motor is in many respects a great advance on any other motor now in use. The aim in constructing it has been to make a powerful instrument, and one which is at the same time small enough to be easily manipulated. By the use of well-known electrical principles a 3-10 horse-power motor has been built, with a weight of only seven pounds, while the ordinary



Motor held in the hand, ready for use.

motor of equal power weighs about eight times as much.

The great energy and speed, 15,000 revolutions per minute, are requisite for an effective instrument, since the saving of time is often a factor of great importance. The extreme velocity is again of advantage, not only because it saves time, but also because, in an instrument which works with such rapidity, we can use a fraise with only one cutting edge. This tool has no chance to clog. The fraise does not heat, as all the heat generated is taken up by the chips. Heretofore, in other motors, the necessity of shafting or gearing has been a great drawback. Because of its small size and weight, this motor can readily be held in the hand, and thus solves the problem by doing away with either shafting or gearing. An important surgical point is that this instrument, together with its wire connections, can be sterilized.

The illustration shows the motor as held in the hand ready for use. The motor was designed and constructed for me by the International Instrument Company of Cambridge.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 11, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	570	211
Diphtheria	368	65
Measles	1877	48
Scarlet Fever	985	54
Smallpox	—	—
Varicella	166	—
Typhoid Fever	23	4
Whooping Cough	12	1
Cerebrospinal Meningitis	14	7
Malarial Fever	—	—
Totals	4015	390

French Families.—The number of French families, that is to say, households with or without children, is estimated at 11,315,000. Of this total 1,804,720 families have no children, 2,966,171 have one child, 2,661,978 have two children, 1,643,425 have three, 987,392 have four, 566,768 have five, 327,241 have six, 182,998 have seven, 94,729 have eight, 44,728 have nine, 20,639 have ten, 8,305 have eleven, 3,508 have twelve, 1,437 have thirteen, 554 have fourteen, 249 have fifteen, 79 have sixteen, 34 have seventeen, and finally 45 families have eighteen.

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending April 10, 1908:

		CASES.	DEATHS
SMALLPOX—UNITED STATES			
California, Los Angeles	Mar. 14–21	9	..
San Bernardino County	Mar. 19–20	6	..
San Francisco	Mar. 19–20	18	..
District of Columbia, Washington	Mar. 14–28	23	..
Florida, Jacksonville	Mar. 21–28	1	..
Illinois, Rockford	Mar. 21–28	1	..
Springfield	Mar. 19–26	4	..
Indiana, Elkhart	Mar. 21–28	1	..
Evansville	Apr. 1	1	..
Indianapolis	Mar. 22–29	4	1
Iowa, Ottumwa	Mar. 21–28	2	..
Sioux City	Mar. 1–31	16	..
Kansas, Kansas City	Mar. 21–28	18	..
Louisiana, New Orleans	Mar. 21–28	10	2
Michigan, Detroit	Mar. 21–28	2	..
Grand Rapids	Mar. 21–28	4	..
Kalamazoo	Mar. 21–28	2	..
Minnesota, Winona	Mar. 21–28	2	..
Missouri, Kansas City	Mar. 14–28	16	..
St. Joseph	Mar. 14–21	30	..
St. Louis	Mar. 21–28	2	..
Montana, State	Feb. 1–29	58	..
Nebraska, Nebraska City	Mar. 21–28	4	..
Ohio, Holloway	Feb. 22–Mar. 19	15	..
Toledo	Mar. 14–21	2	..
Texas, San Antonio	Mar. 21–28	14	..
Washington, Spokane	Mar. 15–21	15	..
Tacoma	Mar. 14–21	1	..
Wisconsin, Milwaukee	Mar. 21–28	2	..
Racine	Mar. 21–28	5	..
West Virginia, Charleston	Mar. 1–31	2	..
SMALLPOX—FOREIGN.			
Brazil, Para	Feb. 29–Mar. 7	1	1
Canada, Toronto	Mar. 14–21	7	..
China, Amoy (Kulangsu)	Jan. 25–Feb. 15	..	Present
Foochow	Feb 22–29	..	"
Shanghai	Feb. 9–16	4	7
Ecuador, Guayaquil	Feb. 29–Mar. 14	8	..
France, Paris	Mar. 7–14	5	..
India, Bombay	Feb. 26–Mar. 3	..	50
Calcutta	Feb. 8–15	..	8
Italy, Catania	Mar. 5–12	..	2
Java, Batavia	Feb. 8–15	3	..
Mexico, Aguas Calientes	Mar. 8–22	2	..
Portugal, Lisbon	Mar. 7–14	1	..
Spain, Debia	Feb. 29–Mar. 14	10	..
Valencia	Mar. 8–15	27	..
Turkey, Bagdad	Feb. 1–15	89	20
YELLOW FEVER.			
Barbadoes, Bridgetown, vicinity	Mar. 7–14	1	1
Brazil, Para	Feb. 29–Mar. 7	8	7
Ecuador, Guayaquil	Feb. 29–Mar. 14	..	11
CHOLERA.			
India, Bombay	Feb. 6–Mar. 3	1	..
Calcutta	Feb. 8–15	129	..
Madras	Feb. 22–28	9	..
Rangoon	Feb. 15–22	1	..
PLAGUE.			
Brazil, Para	Feb. 29–Mar. 7	1	..
India, Bombay	Feb. 26–Mar. 3	185	..
Calcutta	Feb. 8–15	13	..
Rangoon	Feb. 15–22	27	..

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Original Articles.

THE PHYSIOLOGICAL MECHANISM OF VASOCONSTRICTION AND VASO-DILATATION.*

By GEORGE B. WALLACE, M.D.,

NEW YORK.

WERE the arteries and veins of the body a system of rigid tubes the pressure and amount of the blood flowing through them would be dependent entirely upon the activity of the heart. A change in the pressure or blood flow in one part of the system would be accompanied by a corresponding change in every other part. Thus if a certain group of muscles in active contraction and relaxation were supplied with a needed increase in blood supply, every other organ would receive a similar increase, whether needed or not. Obviously this would imply an unnecessary waste of energy on the part of the heart.

That this condition does not exist, that an increase or decrease in blood supply to one organ or set of organs can be so offset by a change in the distribution to other organs that no particular variation in the work of the heart, or in the general blood pressure is entailed, is due to the fact that the vessel walls contain circular muscular fibers, exercising in themselves a certain tonus, and largely controlled in their contractions and relaxations by vasomotor nerves.

These nerves, the vasoconstrictors and vasodilators, control the caliber not only of the arteries but of the capillaries[1] and veins[2] as well. Their chief effects, however, are on the arterial walls, and particularly on the walls of the smaller arteries, the arterioles. On stimulation of the vasoconstrictor nerves the lumen of these is narrowed, a greater resistance to the flow of blood and a rise in pressure in the arteries ensues, the capillary and venous pressures fall, while the tissues supplied by the constricted arteries receive a diminished supply of blood and oxygen. On stimulation of the vasodilator nerves the opposite effects are obtained. Since the dilatation of a vessel could never be accomplished by muscular contraction, it follows that the vasodilator nerves which induce such dilatation must, like the cardiac vagus, be classed as purely inhibitory nerves, which lessen the tonus or contractibility of the circular muscle.

The anatomical arrangement of the vasomotor nerves and especially of their centers is somewhat complex.[3] The vasoconstrictor fibers have their centers chiefly in the medulla. From there they pass more or less directly down the cord and emerge with anterior roots from the lowest cervical or first dorsal to the second or third lumbar segments as preganglionic sympathetic fibers. These end in the ganglion cells of the sympathetic plexuses, from which, as post-ganglionic fibers, they are distributed throughout the body. The fibers which have this origin and distribution not only possess the power of effecting changes in the caliber of the vessels but in addition they maintain, by means of continuous stimuli passing over them, the tonus as well.

In addition to the vasoconstrictor centers in the medulla there is evidence of the existence of other centers, situated in the cord, especially in that region between the first dorsal and lower lumbar segments. These would seem to have less influence than the medullary centers in effecting changes in the caliber of the vessels but as much in maintaining their tonus.

A certain degree of tonus is afforded also by the peripheral structures. The sympathetic ganglion cells probably play some part in this, but the chief effect comes from either the vascular muscle itself or from the peculiar endings of the nerves in it. These are not endings in the sense of the endings of the motor nerves in striated muscle, that is they are not direct continuations of the nerve fibers, but appear to be more or less independent structures. Physiologically they are neither muscle nor nerve, but a connecting link between these two. For this reason they are referred to as the "neuro-muscular junctions."

That such "neuro-muscular junctions" exist seems established by experiments of Dixon.[4] If the post-ganglionic fiber of a constrictor nerve is sectioned, in the course of some days the part peripheral to the section degenerates completely and stimulation at any part of its course is without effect. If instead of inducing this degeneration, a certain drug, apocodein, is given, again stimulation of the nerve is without effect. In the case where the nerve has degenerated, adrenalin will cause the usual marked constriction of the vessel. After apocodein, however, adrenalin has no effect on its caliber, although the action of barium, which stimulates muscle directly, is unimpaired. There must exist then some structure which adrenalin stimulates and apocodein paralyzes, which reacts differently than the muscle, and is not affected by complete degeneration of the nerve.

I may insert here the results of certain experimental work which possess a very great biological interest as well as a direct bearing on vasoconstrictor action. It has been shown by Elliott[5] that adrenalin on whatever tissue it acts always produces an effect identical to that caused by stimulation of the sympathetic nerve supplying such tissue. Elliott[6] observed that in animals in which the adrenal glands were excised, symptoms appeared which were referable to a hindrance of the activities of those tissues innervated by the sympathetic nerves. These nerves lose their tone and may even fail to respond to direct electrical stimulation. A progressive fall of blood pressure and weakness of the heart beat are among the symptoms. At the last stages, although the nerves of skeletal muscle

*Paper read before the New York Academy of Medicine, March 19, 1908.

are quite efficient, the sympathetic nerves are affected to such a degree that nicotine, a drug which through stimulation of the sympathetic ganglia causes in normal animals a striking rise of blood pressure, is now unable to cause any rise at all. Quite independent of this, Dreyer[7] has shown that stimulation of the sympathetic fibers going to the adrenal gland brings about a very perceptible increase in the internal secretion of this gland, or at least in that constituent of the secretion which raises blood pressure. If these experiments are correct a very interesting relationship is brought to light. The vasoconstrictor sympathetic nerves require for their proper function the presence of an adrenal secretion. The presence and amount of this secretion is dependent in part at least on impulses coming to the gland through the sympathetic system.

There is no very definite knowledge concerning centers for the vasodilator nerves. It is generally believed that these are located chiefly in the medulla, although reflex centers seem to be present throughout the spinal cord. The dilator nerves leave the central nervous system as preganglionic fibers, in part with the cerebral nerves, in part with the posterior spinal nerves. They pass to the periphery usually in company with the constrictor fibers, although some are separate from these.

Different vascular areas contain different supplies of vasomotor nerves, and the general law has been put forth that the degree of contractility of vessel walls from impulses passing over the sympathetic is in proportion to their nerve supply.

That part which is most plentifully supplied with vasomotor nerves is the splanchnic area, comprising those vessels going to the spleen, liver and kidney, and especially to the intestinal tract. Owing to the immense area of arterioles and capillaries it contains, this region has most to do in effecting changes in the general blood pressure and blood distribution.

Whether the vessels of the brain, lungs, and heart contain vasomotor nerves is still a disputed question. It is certain, however, that such nerves if present are without much control over the vessels. This statement would seem to apply more to the constrictors than to the dilators. The existence of vasoconstrictor fibers in the cerebrum seems established experimentally, since a narrowing of the cerebral vessels, to be explained only by nerve stimulation, can be brought about.[8] In general, however, the amount of blood circulating through the brain is dependent upon the amount contained elsewhere, especially in the splanchnic area, that is, it is a result of not active but passive changes in the caliber of the cerebral vessels.[9] Thus constriction of the splanchnics with a lessened blood flow through them results in a dilatation of the cerebral vessels with a greater flow through the brain, dilatation of the splanchnics results in a lessened cerebral blood supply. Hence the distant splanchnics may in a way be considered as the vasomotor nerves of the brain, as far as the blood supply to this organ is concerned.

The recent experiments of Brodie and Dixon[10] may be taken as proof that vasoconstrictor nerves are not present in the pulmonary vessels. They have shown that adrenalin has the power of causing a constriction of all vessels known to be supplied with vasoconstrictor nerves. A constriction is entirely absent, however, in the pulmonary circulation, and in fact some dilatation may be induced by the drug. Nor does electrical stimulation of any of the nerves going to the pulmonary vessels cause a narrowing of them. These results have been questioned by Plumier,[11] who, using somewhat similar methods, comes to the belief that vasoconstrictor nerves are present in the pulmonary vessels.

Although the coronary vessels appear according to some authors to contain vasomotor nerves, Schäfer[12] states that such is not the case and that they are entirely absent here.

Thus whether the brain, lungs, and heart are supplied with vasomotor nerves must be considered an open question, but this in itself makes certain the fact that these vessels have at most a very scanty nerve supply, not at all comparable to vessels elsewhere.

The important service which the vasomotor system renders is to maintain a definite tonus of the vascular walls, thus keeping the blood pressure at an optimal level, and to so regulate the caliber of the vessels in different regions that each organ receives the amount of blood essential to the performance of its function.

A rise or fall in general blood pressure is usually the result of a constriction or dilatation of the splanchnic area. As a consequence of a rise in general pressure the vessels of the brain, and probably of the lungs and heart as well, undergo a passive dilatation with a resulting increase in blood flow through them. As a consequence of a fall in general pressure from splanchnic dilatation the reverse is true. With the exception of the splanchnic area, and even including parts of this, any organ may receive an increase in blood through a dilatation of its vessels with no particular rise in general pressure. This implies naturally a compensatory change in the opposite direction in other vascular areas. Such a regulation in blood distribution as this is seen especially in organs in active function, contracting muscle, secreting gland, etc. In fact, a local increase in blood supply by means of vasodilatation is the usual physiological accompaniment to an increase in function.

The final knowledge of the mechanism of such a regulation has not yet been afforded. May[13] has shown that a dilatation of the pancreatic vessels occurs when the organ is in a state of active function from the injection of secretin, although the secretion is not dependent entirely on the increase in the blood flowing through the gland. The vascular dilatation here has not the same cause as the increase in secretion, that is, it is not due to the chemical substance secretin, but according to May is to be ascribed to the formation of unknown metabolites, which, owing to their concentration in the gland, act on the vessels here and nowhere else. A somewhat similar relationship between limited vascular dilatation and increase in function has been shown in connection with the submaxillary gland,[14] while the renal vessels are dilated by urea, although this substance tends to raise the general pressure.

In the case of working muscle a dilatation of the vessels in the muscle occurs and CO_2 has been considered as a cause for this.[15] In the light of recent experiments this action seems doubtful. CO_2 has a very distinct effect on the vasomotor centers however. When brought to these by the blood it acts as a stimulant, and constriction of the splanchnics results. Whenever an organ is in a state of activity, CO_2 appears in the blood in increased amount, and it seems most probable that it is by its stimulant effects on the vasomotor and cardiac centers, that the dilatation of the vessels of the functioning organ is offset and the level of the blood pressure kept constant or raised.

A further regulatory mechanism is seen in the

vascular reflexes. These may be subdivided into one set, confined entirely to the vascular system, and a second set in which the impulses originate in other organs.

In the first set are to be found those reflexes which arise in the heart. By stimulation of pericardial nerves, of extracardiac fibers of the vagus, or of other superficial cardiac nerves, a rise of blood pressure may be obtained which is due not to changes in heart action, but to vascular constriction, especially of the splanchnics. Of what physiological importance such reflexes are is as yet unknown.

It is commonly stated that the chief afferent path over which cardiovascular reflexes travel is the depressor nerve. As a matter of fact, however, this nerve arises not in the heart, but in the beginning aorta.[16] Stimulation of it results in a splanchnic dilatation and corresponding fall in pressure, and such stimulation can come from an overfilled aorta. With a normal aortic pressure present, however, the depressor nerve has no marked regulatory influence. Thus on sectioning it the rise in general pressure is only slight. Again if the splanchnics are strongly constricted by stimulation of the vasomotor center, for instance by asphyxia, the section of the depressor results in no very marked further rise in pressure.[17] It seems probable that while it exercises a certain controlling power on blood pressure, this is rather slight, and especially so when the high pressure is due to an increased irritability or stimulation of the vasoconstrictor center.

The importance as a regulatory mechanism of other vascular reflexes seems less open to question. Thus Delezenne[18] has shown that under various influences which produce a definite rise of blood pressure through splanchnic constriction an active dilatation of the vessels of a limb takes place at the same time which is prevented if the ischiatic and crural nerves are severed. The dilatation then must be brought about by a vascular reflex. This has also been demonstrated by Gottlieb and Magnus[19] in their work on the digitalis group. Digitalin and strophanthin if injected into intact animals cause a constriction of the splanchnics and a dilatation of peripheral vessels such as those of the hind limb. If the splanchnics are all tied off the injection of these drugs causes not a dilatation but a constriction of the vessels of the hind leg. If an artificial circulation is established in the leg so that it is connected to the rest of the body only by means of nerves, the injection of either of the drugs again causes a constriction of the splanchnics and a dilatation of the leg vessels. Hence the dilatation must be an active one from a reflex starting in the splanchnics. The reflex dilatation in such a case takes in the vessels of the brain and skin and very probably of the lungs and heart as well.

Such a reflex as this is of great importance as a protective mechanism, since a rise in general pressure from splanchnic narrowing may be partly or wholly offset by the dilatation of vessels elsewhere; and it seems probable that the failure of many drugs to produce a rise in general blood pressure when given to normal animals or persons may be thus explained. So for example the subcutaneous injection of strychnine in dosage of 1-20 of a grain or of caffeine in dosage of 2 grains in a normal individual may be followed by little if any rise in blood pressure as measured from the brachial artery.

In the second set of vascular reflexes, originating outside the vascular system, are to be found those arising in the brain. Howell and Austin[20] have shown that direct stimulation of many motor areas in the cerebral cortex and of the dura as well may be followed by a very definite vasomotor response, which may result in either a rise or fall in general blood pressure. Emotional or psychic reflexes also are very common and it is a usual experience that the first blood pressure readings in a nervous individual are much higher than subsequent ones. Whether the psychic reflex produces a rise or fall in general pressure is dependent on its character and intensity. Undoubtedly in all cases the result is due largely to changes in the caliber of the splanchnics, although the heart itself is usually affected in a corresponding direction. In general the effects of cerebral reflexes are of but short duration.

The stimulation of many sensory nerves results in a rise of general pressure. Among those especially investigated are the ischiatic, brachial, and trigeminus. The rise here is again due to splanchnic constriction and again is generally accompanied by a dilatation of the vessels of the periphery, which is an active dilatation in that the peripheral dilators are stimulated synchronously with the splanchnic constrictors. In these cases the removal of the cerebral hemispheres is without effect in preventing the reflex.

The exact purpose of psychic or sensory reflexes is not clear, especially when the wide extent of the response is considered. It seems probable, however, that the mechanism has for its object the sending of more blood to the part in which the reflex starts and that the splanchnic constriction is an aid to this in that it induces a greater general pressure and so still further increases the blood flow through the dilated vessels.

A more easily explained reflex is that which follows the application of heat or cold to the skin.[21] Cold has the effect of causing a constriction of all the skin vessels although the cold itself may be applied to a limited area of the skin. Heat causes the reverse effect. Thus if a rabbit, with the exception of its head, is placed in cold water, the vessels of the ear constrict powerfully. If warm water is substituted the ear vessels dilate. Subjecting only part of the animal, the extremities, for instance, to these changes in temperature induces similar effect in distant skin vessels. The distant effects do not occur if the upper part of the spinal cord is cut, so the phenomenon is of a reflex nature.

Such a reflex as this undoubtedly has for its object the regulation of the body temperature. That the splanchnics as a rule follow inversely the changes in the skin vessels, that is, dilate when these contract from external cold, contract when these dilate from heat, is probable but not proven. It has been shown, however, that the tracheal vessels dilate quite perceptibly when the skin vessels contract from cold applications.

It is quite probable, too, that certain internal vascular regions, such as that of the kidney, may be especially affected by skin reflexes. On this subject, however, our exact knowledge is scanty.

The explanation of counterirritation assumes also a rather sharply defined vascular reflex. As Head[22] has made evident, there is a somewhat definite sensory relationship between deep lying organs and certain skin areas. Thus irritation of an internal organ is accompanied by hpyeresthesia of a fairly well localized skin area. That counterirritants applied to such an area affect the blood supply to the related internal organ by reflex action is extremely likely.

The various regulatory mechanisms thus briefly outlined are eminently physiological ones, that is,

they correlate one part of the vascular system to other parts in such a manner that the normal or physiological condition of the entire organism is maintained. In various abnormal states, however, the proper balance may be disturbed, the regulatory mechanism thrown out of gear, so to speak.

Such a disturbance is seen frequently in various nervous disorders. So for example, in nervous or neurasthenic individuals, the response to psychic or emotional reflexes may be greatly intensified. There occurs an increased irradiation of impulses from the more irritable brain cells, and so multiple impulses pass to the vasomotor centers. In this way a greater effect on these is produced and greater vascular responses elicited. That this is ultimately injurious to the organism is shown by the common occurrence of cardiac hypertrophy in some of these cases. Fainting attacks are usually to be explained by abnormal psychic impulses which cause a great splanchnic dilatation and resulting cerebral anemia. Such effects on the circulation as these differ from the normal only in their greater intensity.

In other nervous disorders the abnormal effect may be more localized. Thus a very marked spasmodic vascular constriction may be limited to one particular part of the body, a hand for example. Or from clinical histories we may assume that the circulation of some one internal organ, such as the kidney, has been profoundly altered. In such cases it would seem that the effect is not due merely to an intensification of the response to a psychic or emotional impulse but that the response has been deflected from its usual path and has been concentrated on some one vascular region. Localized vascular dilatations such as are seen in cases of angioneurotic edema may also be due to similarly abnormal reflexes.

In some other cases of regulatory disturbances the abnormality is to be looked for in the vasomotor centers. Thus in the set of symptoms classed as shock it is believed by some that the vasomotor center is in a state of marked inhibition; by others that it is in a state of exhaustion or at least great depression. The valuable work of Porter[23] tends to throw doubt on each of these hypotheses, since in shock induced experimentally he finds that stimulation of various sensory nerves results in a typical vasomotor response, in fact the percentage rise of blood pressure from such stimulation may be greater than seen in a normal animal.

By reducing the content of CO_2 in the arterial blood and so lessening the tension of this gas in the venous blood and in the tissues, Henderson[24] has produced a condition in animals which he states is apparently identical to surgical shock. There occurs a pronounced fall in blood pressure, an increase in the heart rate which may go to the point of cardiac tetanus, unconsciousness, and partial or complete loss of reflexes. In the last stages he finds in contradiction to Porter, that a reflex rise in blood pressure does not follow stimulation of a sensory nerve. When the acapnia, or CO_2 diminution, is brought about very rapidly primary cardiac failure may result; if the acapnia is more gradual, failure of vascular tonus occurs. As a result of his experimental work Henderson advances the hypothesis that acapnia is the cause of surgical shock.

In the experimental work on shock, the authors seem somewhat to lose sight of the very probable fact that just as the primary causes of the symptoms classed under this head may be most varied, so the common results of these causes may be due to quite different abnormalities of function. And it would seem unjustifiable to draw sweeping conclusions from experiments which deal only with what might be called special types of shock. However this may be, and whether one believes in the explanation of inhibition or of exhaustion of the vasomotor centers, in the interpretation Porter places on his results, or in the hypothesis of Henderson, the intimate connection between the dangerous fall in blood pressure and an abnormal state of function of the vasomotor centers stands out clearly.

These few instances of a disturbance of the regulatory vascular mechanism are cited merely as examples. It is self-evident that a better understanding of the abnormal conditions existing means a more intelligent line of treatment, and it is equally apparent that this better understanding must rest upon a sound knowledge of the physiological mechanism.

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THERAPEUTICS OF VASOCONSTRICTION AND VASODILATATION.*

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THE part of the subject that has been assigned to me is so wide, and can be approached from so many standpoints, that I gladly avail myself of the liberty given me by the arranger of the program to treat it from the standpoint of abnormally high blood-pressure.

From the therapeutic point of view it is necessary to have a clear conception of the condition of the entire vascular system in pathological high and low pressure. The actual degree of blood-pressure depends upon the heart, while the maintenance of that pressure depends upon the peripheral resistance. Normally the vascular system protects itself against sudden changes in pressure by the coordination that exists between different parts of the system. As the maintenance of the blood-pressure chiefly concerns us this evening, it will be necessary to consider the conditions which affect this. The following factors have been considered as having a more or less definite influence:

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A. The amount of blood contained within the vascular system. The regulatory vascular mechanism is such that wide variations in the amount of circulating fluid can occur without any particular change in pressure.

B. Resistance in the capillaries has been considered a factor of high or low pressure, and Broadbent and others have insisted that the viscosity of the blood has an important bearing; that any increase in viscosity means an increase in resistance to capillary flow. This, however, is not borne out by experiments. In many cases of increased viscosity the blood-pressure is indeed higher, but the explanation given of increased capillary obstruction is not the only one that can be brought forward to explain the high tension. That the blood contains certain substances that act upon the muscle tissue in the arteries and arterioles is the more reasonable. When the amount of fluid in the body is increased and is contained in the cellular and the perivascular tissues, then the edema may produce a definite obstructive effect upon the capillaries through pressure.

C. Vascular elasticity. The elasticity of the blood-vessels is a more important factor in influencing the velocity of the blood and conserving the energy of the ventricular systole than in effecting arterial tension. The changes in elasticity imply changes in the heart work and the velocity of the blood flow.

D. The tonicity of the muscle tissues in the small arteries and arterioles is the chief factor in maintaining blood-pressure. Therapeutically we should consider the muscle tissue contained in the cardiovascular system as the true parenchyma of that system, and in every case of abnormal blood-pressure with a change in arterial tonicity we should look for the cause of the change.

Conditions that cause hypertonicity in the arterial system may be due to increased irritability of the vasomotor system or of the arterial muscle, both of which conditions may be dependent upon primary toxic or primary nervous influences. The causes of increased irritability may be poisons acting upon the neuromuscular system of the circulation, which may be extrinsic, as lead, alcohol, tobacco; or endogenous, as bacterial toxins formed in the body; retained excrementory products; certain proteolytic digestive products absorbed from the alimentary canal; increased normal or abnormal secretions influencing metabolism, such as from the thyroid, or acting upon the sympathetic system, as from the adrenals; overwork, which may have a primary regional effect according to the character of the work. Probably the most important and common of these are lead, tobacco, alcohol, overeating, and a mode of life that produces the gouty condition and insufficiency of the kidney.

It is still a matter of dispute how these substances cause high tension. The older conception was that by their presence in the blood they exerted a direct action upon the muscles of the blood-vessels or on the vasomotor and sympathetic nervous system; but later, with a greater knowledge of the influence of internal secretions, both on metabolism and the cardiovascular system, there has been a tendency to put their action farther back and to consider that these substances increase the normal pressor substances in the blood, such as have their origin in the adrenal system, which system includes not only the cells of the medullary portion of the adrenals, but the chromophile cells found elsewhere in contact with the sympathetic nervous system, as Zuckerkandl's parasympathetic bodies, the intercarotid gland, Luschka's coccygeal gland, and some collections of cells in the pituitary bodies. The suprarenal glands themselves form only a part of the so-called hypertensive glandular system.

Although the manner of their action cannot be definitely explained, we know positively that these substances produce first an intermittent and later a persistent high arterial tension which causes a definite sequence of events in the entire cardiovascular system.

Regardless of cause, the changes induced by high arterial tension can be divided approximately into three stages. The first stage is characterized by persistent high tension due to hypertonicity of the muscular coats of the arteries and arterioles. This stage has been called that of presclerosis by Huchard, angiosclerosis by v. Basch, chronic arterial hypertension by Cook.

The second stage is that of progressive hypertrophy of the muscular tissue of the cardiovascular system associated with degenerative changes in the intima and fibrosis of the external coat of the arteries.

The third stage is that of diminished muscular control due to progressive fibrosis which causes increased obstruction in the arteries and arterioles of certain areas and a tendency to cardiac exhaustion and insufficiency.

The treatment must take into consideration not only the stage, but also the cause. In the first stage the increased blood-pressure due to the general hypertonicity of the arteries may at first be intermittent, but soon becomes persistent and calls for more cardiac power, which is met by cardiac hypertrophy. The increased ventricular power affects in turn the arterial system, increasing the systolic pressure, and hypertrophy of the muscle tissue in the arteries follows, so that a vicious circle is developed. From the standpoint of treatment it is necessary to recognize the fact that the hypertrophy is not limited to the heart, but extends to the entire arterial system. The so-called idiopathic cardiac hypertrophy belongs to this stage.

The first stage is the curable one and the most important part of the treatment is to find the cause and remove it if possible, or at least bring the blood-vessels under normal physiological vasomotor control. Patients at this stage frequently complain of symptoms referable to the circulatory system. These symptoms are very variable, but generally include those of cardiac overaction. On examination nothing very definite is found, except possibly a slight cardiac hypertrophy. If these patients are made to exercise while under examination it will frequently be found that the cardiac rate and force is abnormally increased, and that there is a very decided and persistent rise in blood-pressure, indicating an irritability of the vasomotor control. The development of an irritable and slightly hypertrophied heart in a young person indulging in ordinary athletic sports indicates that the arterial system is abnormally irritable with a tendency to spasm. In examining for the cause of such an irritability it is necessary to take into account all the details of daily life, food, the use of tobacco, exercise, and all those things that are likely to react on the arterial system. Increased vasomotor irritability may be hereditary. When the patient gives a family history of cardiovascular or renal disease, prophylactic measures are just as important as when there is a hereditary weakness that predisposes to tuberculosis.

Tobacco is especially apt to induce arterial spasm in susceptible persons. All those who have had experience with athletes have noticed this fact.

Tobacco interferes with their wind. If examined while under exercise they show a higher arterial tension, and suffer from attacks of dyspnea, palpitation, and precordial distress. Many persons who are accustomed to the use of tobacco find that if they change the brand to one that is stronger these symptoms are easily induced. In advanced sclerosis tobacco is sufficient to induce anginal attacks in some persons, while it causes in others acute vertigo so that the patient suddenly falls.

Alcohol also should be absolutely prohibited in all cases showing a tendency to arterial spasm.

The diet should be simple and wholesome, and while it is not necessary for the patient to become a vegetarian, vegetables should form a large portion of the diet and meat should be taken only in sufficient quantities for proper nutrition. The medical treatment of the first stage is largely directed toward increasing the activities of the emunctories. Many writers have called attention to the fact that mercury in its different forms has a marked effect on the arterial tension and that this effect is obtained quite independent of the cathartic action.

Mental and nervous excitement is an important factor in causing the arterial spasm and hastening the occurrence of the second and third stages. The physiological action of chloral on the vasomotor center and spinal reflexes explains its action in cases where emotional or mental excitement, or exaggerated reflexes, cause arterial spasm. It also has a direct action on the walls of the blood-vessels, as is shown by the dilatation of the cutaneous vessels under its use in persons with normal blood-pressure. It is rarely, at this stage, necessary to act upon the blood-vessels by the use of the more active vasodilators.

In the second stage all the factors that were present during the first stage are much more active in causing disturbances of the cardiovascular system, and there is a progressive obstruction from the arterial capillary fibrosis. As long as cardiac hypertrophy is able to compensate for the obstruction the patient may not be conscious of any change in his general health, except that on exertion cardiac action is increased and he feels the thumping of the heart against the thorax, and later there is a sense of constriction or tightness in the chest.

At this stage it is necessary to determine to what extent the obstruction to the circulation is due to the sclerotic changes in the vessels and how much is due to spasm of the muscular coats. It must be kept in mind that arterial sclerosis does not affect the entire arterial tract uniformly, but that in certain vascular areas the fibrotic changes advance more rapidly. In order to maintain a general high blood-pressure, which is necessary to carry on an efficient circulation in the fibrotic areas, the obstruction in these portions of the vascular area is met by general hypertension, which is made possible, according to Savill, only by muscular hypertrophy in the arterial coats. In the treatment of high tension this fact is lost sight of. High blood-pressure is, in many cases, a conservative process, and the indications are to control it rather than to try to reduce it to the normal level.

The danger lies on the one hand in uncompensated control, and on the other hand in overcompensated control. In the use of vasodilators it must be remembered that their effects are entirely limited to those portions of the arterial tract where the muscle tissue is still capable of exerting control, and that they have absolutely no action upon the obstruction caused by the fibrotic changes in the vessels. "Whatever true structural obstruction may be present cannot be removed; but whatever narrowing is due to hypertonus may be removed." The problem presented in each case is to what extent is it possible or safe to act upon the muscle tissue in the arteries.

When the blood-pressure is due to an overaction of the blood-vessels, before giving the general vasodilators it is necessary to determine whether or not the overaction of the muscular tissue is dependent upon some irritation that is acting upon a definite vascular area, and to remove this if possible.

High arterial tension may be due to the abnormal action of some of the normal reflexes. One of the most important of these is the gastrointestinal reflex. Some change in the arterial tension during digestion is physiological and varies with the individual, the nature of the food, condition of the digestive apparatus and vasomotor system. Normally the taking of food causes a change in the arterial distribution which is sufficient to insure the necessary blood supply to the digestive organs. Dilatation in the splanchnic area is compensated for by constriction in other vascular areas. These circulatory changes may be sufficient to cause the patient to be somewhat drowsy after a meal, or to act upon the peripheral circulation so that the patient feels chilly when exposed to lower temperatures.

Russell has called attention to a vascular reflex having its origin in the digestive organs, and has shown that this reflex is accentuated by the character of the material introduced into the digestive system, and that the continued overaction of this reflex, which acts primarily upon the splanchnic area, produces high arterial tension and hypertrophy and ultimately sclerosis of the muscle tissue in the walls of these vessels. When progressive sclerosis occurs in one vascular area there is associated with it a tendency to hypertonic contraction in the hypertrophied muscle tissue of other portions of the circulation. These facts explain the liability to the occurrence of anginal attacks after a meal, especially breakfast, as the activity of the vasomotor system is much greater in the morning than in the afternoon.

Habitual excess of proteid foods may produce hypersensitiveness of the vasomotor system. When hypersensitiveness is present slight reflexes from abdominal organs can cause sudden arterial spasm. All gastric and intestinal disturbances should be corrected. The diet should be sufficiently nutritive, but not bulky. For this reason strict vegetarian diet is contraindicated. There must be no overloading of the stomach with either solids or liquids.

The relation of the kidney to high blood-pressure is a very important one, and renal insufficiency caused by excess or error in diet is a frequent cause of presclerosis.

The fact that disease of the kidney is almost invariably associated with high arterial tension has caused kidney lesion to be considered practically the main cause of high tension and secondary arterial sclerosis. Arterial sclerosis is frequently, but not necessarily, associated with kidney disease, and chronic renal disease has been extended too far as a cause of arterial sclerosis. Its relation to arterial sclerosis may be (1) that the generalized morbid condition in the arteries, characterized by high blood-pressure, and various circulatory and nutritive effects are dependent upon other toxic conditions than those due to the kidney. The vascular change is a general one and the renal vessels take part in it. (2) Primary renal disease may induce cardiovascular changes and arterial thickening.

There is need of separating these two kidney conditions both etiologically, pathologically, and therapeutically. Why primary kidney lesions are so constantly associated with high blood-pressure and changes in the cardiovascular system has generally been explained by the retention of substances that should ordinarily be thrown off by the kidney.

Therapeutically, I have always considered that there was another explanation of it, namely, that in primary kidney disease there was interference or obstruction in the kidney circulation which demanded a higher arterial tension to afford the requisite blood supply for the proper functioning of the kidney. As the circulation of the kidney is part of the splanchnic system the high pressure, needed to maintain a sufficient kidney circulation, can only be obtained by changes in the general splanchnic circulation, and as a result the normal splanchnic control over blood-pressure is disturbed. By the use of such diuretics as theobromine, which dilates the renal vessels especially, we may bring more blood to the kidney and so remove the necessity for this general higher pressure. All are agreed that these substances lower excessive arterial tension when they increase the kidney function, but there has been no very definite explanation of how they could influence the splanchnic area.

When high blood tension is associated with kidney disease the degree of blood-pressure as such is considered too exclusively, and the fact is lost sight of that there is need of a higher blood-pressure to carry on an efficient circulation in the diseased kidney. It has been very aptly put that "it would be better for a man not to have a sclerotic kidney, but if he has a sclerotic kidney, it is well for him that he has a high blood-pressure." This high blood-pressure, while necessary for the kidney, carries with it dangers elsewhere, and the problem is to keep the pressure at a point which is sufficient for kidney circulation and safe as far as the general vascular system is concerned.

In the later stages of arterial sclerosis when edema occurs, associated as it nearly always is with some change in urinary secretion, the tendency has been to direct our efforts entirely to increasing the urinary flow, although in many cases, with the exception of a slight change in the amount of urine, the evidences of the kidney changes are rather indefinite. I desire especially to warn against the use of immense quantities of water given for its diuretic effect. The circulation in these cases is already overtaxed and there is an excess of fluid in the body. The giving of large quantities of water only adds to the blood mass and increases the work of the heart. There should be marked fluid restriction, free elimination by the bowels and skin so as to bring the fluid content of the body within the power of the heart and the vessels.

Excessive blood-pressure does not itself constitute an absolute indication for treatment and the active vasodilators should be used only to meet emergencies as stenocardia, angina pectoris, and the cerebral disturbances. The vasodilators of the nitrite group, as nitrite of amyl and nitroglycerin, ordinarily have only a temporary effect, and when sustained high pressure is associated with disturbances that cause anxiety, they should be given cautiously and the pulse watched. No sudden or extreme action from these drugs is desirable. They should only be used to meet emergencies.

The effect of the vasomotor dilators is not entirely gauged by the fall of pressure, but by the patient's subjective feelings and the pulse rate. Because these dilators in many cases do not materially lower the blood pressure, many have claimed that they are absolutely useless. In cases of extreme sclerosis, where the obstruction is due to the fibrotic changes rather than the hypertension in the muscles of the arteries, these drugs have a very limited effect upon the blood-pressure; nevertheless, many of the symptoms from which the patient complains are relieved by their use. This is due to the readjustment of the circulation, which is made possible by the drugs acting upon the vascular areas where the muscle tissue in the blood-vessels still exerts control. Vasodilators can only reduce blood-pressure permanently when the heart is failing. If under the use of these vasodilators there is a permanent fall of pressure, a quickened pulse rate and no improvement in the patient's well-being, then it is an indication that there is a weak heart and that the high tension necessary to carry on efficient circulation in the important vascular areas is lacking. This is especially true in the last stage of Bright's disease with cardiac dilatation and dropsy. The fact that the case was primarily one of high tension shows that this tension was necessary for the kidney function.

I am thoroughly convinced that the present inordinate use of vasodilators to control arterial tension is not altogether free from danger, and that there is a secondary effect from their use, which shows itself in an increased tendency for the hypertrophied muscle tissues in the vessels to be thrown into spasm under slight reflex irritation. My experience in the treatment of cardiovascular diseases dates back to a time before the vasodilators were used as freely as at present. While patients suffered from anginal attacks then as now, the attacks in the early stages of the disease were not as marked as at the present time. In a certain percentage of cases the use of nitroglycerin causes a temporary rise in arterial tension immediately upon its administration. This is followed by a very great relaxation of the vessels, but when the effect wears off the irritability of the vasomotor control is markedly increased.

Control of high blood-pressure by cardiac sedation is not justifiable except in cases where cardiac hypertrophy is excessive and cardiac overaction occurs under nervous excitement or physical exertion.

We have frequently to decide the question whether altitude is contraindicated in persons with high blood-pressure. Observation shows that the first effect of altitude is to raise arterial tension even in normal persons, but after a few days' residence the pressure falls and later may be lower than before. This has been explained by the effect of the rarified air upon respiration and surface circulation.

As persistent high blood pressure is dependent upon disturbance in the splanchnic area which exerts the normal physiological control over the circulation, one of the most important methods of treatment is the use of those means which influence vascular dilatation in the skin area, as baths, counterirritation, and high frequency currents; and in the muscles, as massage and restricted exercise. One must at the outstart determine how great the disturbance in the splanchnic area is, *i.e.* to what extent the part it plays in the normal regulatory mechanism is lost. The principle of such treatment consists in causing a dilatation of peripheral vessels, and so a compensation for lost splanchnic control. In a word, it is the educating of the peripheral vessels to control the circulation. Unless

these desired effects are obtained, such treatment may be decidedly harmful. This fact is frequently lost sight of and baths, massage, or restricted exercises are advised, without any definite knowledge of the patient's reactive powers, or observation of the patient during and after the use of these remedial measures.

In prescribing baths it must be remembered that the blood-pressure can be either raised or lowered according to the kind of baths used. In high blood-pressure the object desired is dilation of the superficial vessels and slowing of the heart, which is the reverse of that aimed at in low blood-pressure, viz., contraction of the peripheral capillaries and so-called "tonic" effect.

Cold baths of plain water raise the arterial tension. If the patient reacts quickly this rise will be of short duration. In cases with high tension, especially if there is beginning myocardial insufficiency, the reaction does not readily occur. On the other hand, in patients who have always been accustomed to take cold baths, who have educated their peripheral circulation, reaction quickly occurs. It is dangerous to begin with the baths at the temperature ordinarily advised, 90° to 92° F., in patients unaccustomed to cold baths. The temperature should be at 99° to 101° F., and at subsequent baths the temperature may be lowered, but only when the patient reacts quickly and the initial rise is followed by a decided fall in pressure.

In patients who suffer from anginal attacks when exposed to cold air it is very necessary to educate the peripheral circulation by a graded course of baths.

Water that contains saline material, as salt or calcium chloride, or sulphur water, causes a quicker reaction through its effect on the cutaneous vessels, and can be used colder than plain water. The fall of pressure is more marked and lasts longer.

If to the effect of cold pressure is added in the form of spray or strong needle douches to the entire body, the blood-pressure is raised and persists for some time (tonic effect).

Hot baths reduce the blood-pressure to an extent roughly proportionate to temperature. Hot air or Turkish baths, although raising the pulse rate, reduce the pressure still more than plain hot baths. Moist hot air or Russia baths lower the pressure. The effect of Turkish and Russian baths is modified if cold douche or needle bath is used afterward. The pressure is raised again according to the strength of the douche and the coolness of the water. The alternate hot and cold douche (Scotch douche) raises the blood pressure when the temperature varies rapidly.

The saline baths and effervescing saline baths (Nauheim baths), even when used at a lower temperature than the plain water bath, lower the pressure more and have a cumulative effect, so that after a course of baths the pressure is permanently lowered in suitable cases.

It cannot be too strongly emphasized that the bath treatment, whatever form used, must be adapted to the individual patient, all the details, as temperature, duration, amount of saline, and degree of effervescence, must be determined, and after the bath the coudition of the patient should be observed. The good effects of the treatment depend on the ability of the blood-vessels to respond and the control of the vasomotor system over the circulation. When high blood-pressure is due to general fibrosis but little can be accomplished. The same is true when there is marked myocardial weakness.

Massage can raise or lower blood-pressure according to the nature of the movements and whether the abdomen is included or not in the treatment. Effleurage (which includes all stroking movements), tapotement (which includes all percussion movements, as slapping, tapping, beating, clapping, chapping, or hacking), and vibration raise the blood-pressure, while pétrissage (which includes all pressure movements, as kneading, rolling, squeezing of the muscle tissues), after a very slight and short initial rise, reduces blood-pressure if applied only to the extremities and trunk. If the abdomen is included, then there is a rise in pressure.

If a vasotonic effect and increase in blood-pressure is desired, the lighter motions, as stroking, percussion, and vibration of the extremities, and kneading, ending with light percussion of the abdomen, is used. If the object is to reduce blood-pressure, the slow, intermittent rolling or kneading of the muscles of the extremities, back, and trunk should be employed, but the abdomen should not be manipulated at all. The treatment should be given in a warm room, so as not to cause contraction of cutaneous vessels.

Passive or resistant exercise gently performed causes a slight initial rise, followed by a fall in blood-pressure during the continuance of the exercise, and a still farther subsequent fall which persists for a varying time. The movements cause a dilation of the blood-vessels in the muscles similar to that produced by massage. If the movements are too energetic or the patient does not breathe quietly during the exercise there is a decided rise in the blood-pressure. Considerable experience is needed to give the exercises properly, and the movements must be adapted to the patient.

The power of the iodides to relieve some of the symptoms caused by high blood-pressure has long been recognized. Balfour, years ago, called attention to the alleviation of pain in aneurysm of the aorta under their use, and showed that it was not due to the effect on the supposed syphilitic change in the artery. The effect was formerly supposed to be due to a lowering of blood-pressure, but since the introduction of the sphymograph it has been shown that the relief is obtained before there is any reduction, which occurs only in certain cases and after long use. Romberg believes that iodides act by reducing the viscosity of the blood and so lessen the work done by the vascular system. While there is some reduction in the viscosity of the blood, it is not sufficient to account for the effect, and when the viscosity is reduced by other agents even more than it is by the iodide of potassium, there is no amelioration of symptoms or fall of pressure. Recent investigations into the relation of iodine to the functioning of the thyroid gland suggest that it may influence thyroid secretion and so act on the vascular system. This is in line with the action of small doses of thyroid extract on blood-pressure. While thyroid extract does have an effect on high blood-pressure, it is not a medicine that can be entrusted to the patient, as the dose must frequently be changed, and, with any symptoms of hyperthyroidism, stopped. It is much safer to use the iodide of potassium. Rarely more than fifteen grains of the iodide of potassium a day in divided doses is needed, and it should be continued in well marked cases for two or three years, with an intermission of ten days to two weeks every two or three months. Usually it is given in too large doses and for too short a time. If combined with sodium bicarbonate, gastric irritation is avoid-

ed. It should not produce symptoms of iodism. In the late stage of the cardiovascular or renal disease with edema of the lungs or general edema, it should not be used.

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THE TREATMENT OF ENDOMETRITIS BY IRRIGATION AND DRAINAGE.*

By AUGUSTIN H. GOELET, M.D.,

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Clinically endometritis may be classified as (1) catarrhal; (2) septic; and (3) senile. The catarrhal type has two stages: subacute and chronic. The septic variety has also two stages; acute and chronic. But senile endometritis is essentially a chronic condition and has therefore only one stage.

Gonorrheal endometritis, though belonging to the type designated "septic," should be placed in a class by itself.

Catarrhal endometritis, though denied by some authorities, undoubtedly occurs independently of any primary infection, being caused by repeated and prolonged congestion. As evidence of the truth of this statement a condition that may be designated catarrhal endometritis is found in virgins where there has been no possible chance of infection. Infection may occur subsequently, but it is secondary to the original condition. In the catarrhal type of endometritis the chronic stage develops from a long continued subacute process.

Septic endometritis is either acute or chronic. It is questionable if it develops as a chronic condition without any previous acute stage as stated by some authorities. The process of development may be gradual, especially in endometritis of gonorrheal origin spreading from a mild infection of the cervix, but there is nothing to prove the nonexistence of an acute stage at some period of its development.

Gonorrheal endometritis, or endometritis resulting from invasion of the gonococci should obviously be considered apart from other forms of septic endometritis. Its consequences are more serious and the treatment must be more vigorous and more persistent, not only to establish a cure, if that is ever possible, but also to thwart the occurrence of disastrous sequelæ, too well recognized to require more than passing mention in this connection.

Senile endometritis is essentially a chronic condition, the result of atrophic changes following the menopause. It may or may not be a distinct inflammatory process. That is unimportant. Its treatment, to be effective, involves the same principle as the other types of endometritis, viz., drainage.

The fundamental principle in the treatment of endometritis, in whatever form encountered, is or should be drainage, not of the cavity alone, but drainage of the submucous glands as well. In conjunction with drainage, cleanliness is likewise essential. This should comprise removal of accumulated secretion and débris from the cavity of the uterus, and agglutinated, viscid secretion from the surface of the mucous membrane of the cervix by copious irrigation, repeated at least daily. This is accomplished by means of a special double current or return-flow irrigator, made sufficiently small to permit introduction through the canal without previous forcible dilatation such as is required for curettage. Sufficient dilatation for introducing this small irrigator is secured, when necessary, by means of conical electrode dilators, introduced through the canal while connected with the negative pole of the galvanic current. A moderate current of 10 M. will suffice and this does not irritate or cauterize. Thus negative electrolysis is utilized to free the canal for irrigation and subsequent drainage. As a rule this irrigator may be introduced without the preliminary dilatation, or it may be converted into an electrode by insulating it with a piece of rubber tubing slipped over it, there being an attachment for connecting it with the wire from the battery. In this manner its introduction is facilitated. Throughout the irrigation the current should be continued in force in the same moderate strength.

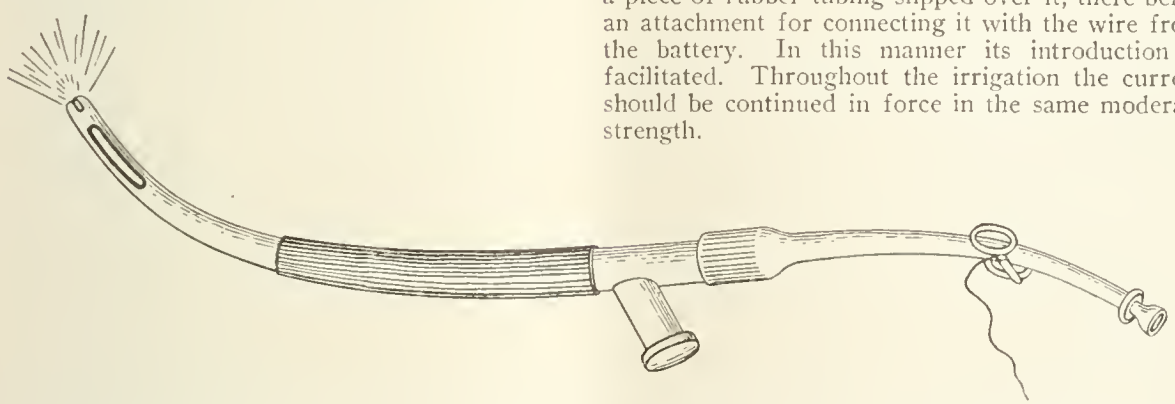

Fig. 1.—The author's clinical uterine irrigator; showing connection for current and rubber tube slipped over it for insulation.

Negative electrolysis thus employed not only establishes and maintains free drainage from the cavity by rendering the canal of the cervix patulous, but also serves to drain the submucous glands by freeing the orifices of the ducts of these glands opening upon the surface and stimulating the glands to throw off pent-up secretion. This is what I have elsewhere designated "drainage of the glands."

This is by no means a theoretical proposition, but a method of treatment for these conditions that has had many years of abundant clinical test, and in my hands it has yielded results that are most gratifying.

The solution used for irrigation will vary with the individual condition under treatment. It may be simple sterile water, normal salt solution, permanganate of potassium (1 to 3,000 or 5,000), peroxide of hydrogen (1 to 4), lysol (a dram to 2 qts.), which facilitates removal of the viscid secretion, or iodine in the strength of one dram of the tincture to three or four pints of water. When iodine solution or other astringent or antiseptic solutions are used in the uterus care must be observed to let all of the solution escape before the irrigator is withdrawn or contraction of the cervix may occur causing retention of the solution and provoking severe pain. This is the most effective method of cleansing the cavity and making applica-

*Read by invitation at session of the Tri-State Medical Association of the Carolinas and Virginia, at Charlotte, N. C., February 18 and 19, 1908.

tions thereto. The thoroughness of the application and subsequent drainage is assured.

Method of Dealing with Individual Types of Endometritis.—Subacute endometritis will subside upon removal of the cause of the general pelvic hyperemia and in conjunction therewith the use of depleting tampons in the vagina. For this purpose iodine and glycerine in the proportion of 1 to 32 or a dram of the tincture to four ounces of glycerine is to be preferred.

In the acute stage of endometritis the canal is usually patulous, the uterine wall, including the cervix, being soft and yielding. Drainage is therefore, as a rule, sufficiently provided for by nature's process and dilatation is not required. Irrigation is, however, essential, especially in the gonorrheal type. In this stage prolonged irrigation with very hot solution of a mild non-irritating character will be most effective. These irrigations should be repeated daily and absolute quiet, preferably in bed when possible, should be enjoined. When its origin is gonorrheal infection irrigation with a mild solution of permanganate of potash (1 to 5,000) or iodine (one-half dram of the tincture to 2 quarts) is permissible. Attention to the bowels which should be kept loose with salines and regulation of the diet is very essential. Pain may be allayed either with a hypodermic of ½ grain phosphate of codeine or a rectal suppository of aqueous extract of opium ½ grain.

In the chronic stage the mucous membrane is thickened from infiltration and there is more or less induration, especially in the cervix and about the internal os. Consequently the caliber of the canal is diminished and often so much occluded, that drainage from the cavity is seriously interferred with or positively prevented. In this condition, when curettage is not required, negative electrolysis to free the canal for drainage with irrigation as described above will prove effective. When displacements are encountered they should be corrected in the course of the treatment, first by means of carefully adjusted tampons and later a properly fitting pessary. The iodine and glycerine tampons will prove a valuable aid, both by reason of the depletion they induce and the support they afford the uterus.

In gonorrheal endometritis cleansing of the cavity will be more effectual if it is first washed out with a solution of peroxide of hydrogen (1 to 4) through the return flow irrigator, the solution of permanganate or iodine being used subsequently. When the infection is confined to the cervix swabbing out the canal up to the internal os with peroxide solution (1 to 2) and subsequently similar applications of nitrate of silver solution is the best method of treatment.

The indiscriminate application of strong, irritating solutions and caustics to the endometrium cannot be too strongly condemned.

Utility of the Curette in Endometritis.—Curettage is sometimes required in the treatment of endometritis for expediting its cure. It should not, however, be employed in the acute stage. Likewise it should not be employed with the mistaken idea that it will cure the condition unaided. There is no doubt that this operation has been much abused and that its mode of action has been misunderstood. Curettage is to be regarded only as an initial step in the treatment and never as a curative measure alone. Subsequent drainage and cleansing of the cavity is quite essential for a cure. The dull or semi-sharp instrument only should be used in the cavity, the sharp curette being sometimes required, however, for the tougher tissue at the internal os and in the cervical canal. The purpose of the curette is to remove areas of mucous membrane projecting above the surface that may be blocking the ducts of the glands opening upon the surface, and by the pressure exerted expressing their contents. Subsequent irrigation is necessary to maintain drainage of these glands.

I would not be misunderstood as decrying this operation. Under proper limitation when indicated it is most effective and is without equal. But I do most emphatically denounce its too frequent abuse and misapplication.

In the treatment of senile endometritis irrigation is seldom required and then only in the beginning of treatment to cleanse the cavity when there is a large amount of retained mucopurulent discharge. As a rule, if the canal of the cervix is made patulous by the application of negative electrolysis through the dilating electrodes the resulting drainage will establish a cure At the outset the very smallest dilating electrodes only can be introduced because the structure of the cervix is indurated and frequently the canal is completely occluded by cicatricial tissue that has replaced the mucous membrane in the canal. After a few applications have been made the dilatation accomplished will permit the introduction of a larger size. Never more than 10 M. of current should be used as cauterization is undesirable. The applications should be made every second day in the beginning and later less frequently but they should be continued as long as there is any evidence of discharge from the cervix.

In conclusion I desire to quote here extracts from a paper presented by me at the Section on Diseases of Women at the Fiftieth Annual Session of the American Medical Association, held at Columbus, Ohio, June 6 to 9, 1899, to show that my views upon this subject have not been materially altered by a more extended experience.

"As an actual fact endometritis is not so common as is generally supposed, hyperemia of the endometrium being often mistaken for it. . . . Another condition often mistaken for endometritis is the so-called cervical catarrh. The diseased process is, as a rule, confined to the canal of the cervix and does not extend beyond the internal os, unless the infection, usually of a passive type, is conveyed to the cavity above by the introduction of instruments for diagnosis or treatment, or for operation, such as dilatation and curettage. The condition is usually an infection of the glands of the cervical mucosa, and manifests itself by a discharge, sometimes inoffensive in amount and insignificant in appearance, yet in it may be found the staphylococci, streptococci, or gonococci, either alone or together. They appear in small numbers in the ordinary discharge, but when the surface is irritated the discharge is increased and their number is greatly multiplied. This means that these bacteria inhabit the glandular structure and few escape to the surface under ordinary conditions, the orifices of many of these glands being obstructed, but under unusual stimulation the pent-up secretion is thrown off in greater quantity and with it myriads of these bacteria which otherwise would not find their way to the surface.

"*In such a condition the cavity of the uterus should not be invaded even for the purpose of diagnosis until all evidence of germ growth, as revealed by the microscope, has been effaced.* The penalty of violation of this rule is risk of infection of the endometrium, which previously may have been exempt. Obviously the most rational manner of

dealing with such infection, which is not confined to the surface of the mucous membrane, but has invaded the granular structure beneath, is to stimulate the glands to throw off the pent-up secretion and to irrigate the surface frequently with a non-astringent, nonirritating solution to remove the secretion and prevent migration. This process of 'drainage of the glands,' if persistently maintained, will cause the bacteria to be thrown off too rapidly for effective propagation in the glands, hence their growth is checked and they become eventually exhausted.

"The same holds true of inflammation of the mucous membrane of the cavity above the internal os. The glandular structure is involved and no form of application to the surface can accomplish a cure unless its effect is to establish and promote drainage of these glands. If it defeats drainage, it must aggravate the condition. Applications that coagulate the secretion on the surface block up the orifices of the glands. Hence astringents and caustics defeat drainage and are therefore contraindicated.

"Curettage is of service both in the canal of the cervix and within the cavity of the uterus, but it should not be employed indiscriminately. To accomplish the most good it should be employed within proper limitations, and caustics should not be applied afterward, since they produce necrosis which may result in atrophy of the mucous membrane or agglutination of the sides of the cavity. . . . The object of curettage is not to destroy the mucous membrane but to remove superfluous tissue that may be blocking the orifices of the glands and preventing drainage. Probably much of the benefit that accrues from curettage comes from stimulation and compression of the glands from passage of the curette over the surface of the mucosa. This forcible expulsion of the secretion would as much as anything remove the obstruction of the gland ducts.

"Since it is not in itself curative in these conditions curettage should be regarded only as a preliminary step in the treatment. Evacuation and drainage of the glands made possible thereby must be maintained and frequent irrigation through the return flow irrigator must be employed until no vestige of the disease remains. This is the only positive way of effecting a complete cure."

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SCIATICA.*

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It is the history of medical progress that with increasing knowledge has come a better understanding of disease. And with the better understanding of a disease better methods, as a rule, have closely followed for its control.

The condition which is described and which we know as sciatica suggests itself for profitable study along these lines, especially in view of the fact that it is recognized as being of frequent occurrence, of great severity, and showing a tendency to become chronic. Moreover, from the time it was first described the skill of the profession has been baffled to conquer it.

Sciatica is described in our text books as being, as a rule, a neuritis either of the sciatic nerve or of its cords of origin; or, in some instances, as a functional neurosis or neuralgia. This, however, does not seem to be an accurate description, as the whole truth, particularly with reference to the important factor operating in its production, does not appear, which factor if recognized on the part of the profession is not appreciated with respect to the means at our command for its control. This factor operates perhaps in at least seventy-five per cent., it may be more nearly correct to put it as high as ninety per cent., of the cases. Sciatica, therefore, as a neuritis, is to be recognized as a secondary affection largely dependent upon this operating cause.

The favorite seat of this affection is the sciatic notch. The patient will refer his pain to this point. Frequently there will be pain in the back of the thigh, at about the lower third. As the affection progresses and the structure of the nerve becomes involved pain may be almost anywhere in the leg. A brief reference to the relationship of the structures which exist at the sciatic notch will present a perfect picture for the study of what takes place in the production of this disease. It will be seen that the sciatic nerve, as it leaves the pelvis and enters the thigh, passes through the notch together with its accompanying vessels, resting anteriorly close upon the bone of the pelvis. Posteriorly, lying immediately over it and resting close upon the nerve, is seen the pyriformis muscle.

Given now the usual history of rheumatism or of gout, exposure after heavy muscular exertion, or a severe wetting, and pain referred to the sciatic notch, what is likely as having taken place? It is a reasonable presumption that the muscular structure has become the seat of a local irritation rather than any nerve structure which happens to be present, as is the nature of such irritating influences when the body is being subjected to them.

The pyriformis muscle, therefore, having become the seat of an irritation, and as contraction follows as a result of irritation to muscular structure, it must necessarily impinge upon the sciatic nerve. And if, as is also usually the case, a congestion and swelling of the muscle accompany the irritation, it will not only impinge upon the nerve, but will bear down upon it against the bone of the pelvis and hold it tightly as in the grip of a constricting band, it being impossible for the nerve to escape, the amount of pain and disability being in direct proportion to the degree of compression.

I have seen striking evidence of the action of the pyriformis muscle upon the sciatic nerve as the result of a strain following the lifting of a heavy stone; this located itself in the sciatic notch, producing the intense pain and disability of a typical sciatica. It does not necessarily follow that the pyriformis muscle is always, primarily, the seat of irritation, as it may be readily conceived that the muscular structures adjacent and intimately associated with it may be in a state of irritation and the process conveyed to it by extension.

The occasional shooting pains down the leg of which our patients sometimes complain, particularly in the male subject, are probably due to momentary spasmodic contractions of the pyriformis muscle upon the sciatic nerve.

I have been particularly impressed in the study of my cases that true sciatica in woman is probably exceptionally rare. It does not seem that women who are subject to hard work and exposure appear for this reason to be more especially prone to the disease than those more favored in life. I have no doubt that woman is more exempt from this affliction because of her anatomical structure, the bones of the pelvis being lighter and more expanded, affording more room for the escape of the sciatic

*Read at a meeting of the York County (Pa.) Medical Society, March 5, 1908.

nerve from compression so far as the pyriformis muscle is concerned.

Other observations which may be noted are that the left side is more often the seat of the affection, no doubt owing to a slight difference in the anatomical structure of the two sides; that men who do not live lives of exposure do not seem to be afforded special protection on this account; and that there seems to be an hereditary predisposition in some to begin to suffer from the disease some time during middle life.

In the study of the development of a neuritis of the sciatic nerve, while the predisposing or exciting cause is to be found, as a rule, in the action of the pyriformis muscle upon the nerve, it is to be considered only as the initial stage in an attack of sciatica, as no involvement of the structure of the nerve, as yet, has taken place. It is only after a continued and persistent pressure that the nerve itself becomes affected, with loss of function and of nutrition, which, if not arrested, will threaten the integrity of the nerve, as well as the usefulness of the leg.

The pain which so often occurs early in the back of the thigh is also an important feature in the development of a neuritis. It usually locates itself at or just above the division of the nerve into its two important branches, which generally takes place at about the lower third of the thigh. The pain at first is but an expression of an interference in the function of the nerve which is being inhibited by undue pressure at the notch, but it is also indicative of the great strain to which the nerve is being subjected at this point by reason of the great activity here of the nervous mechanism in the transmission of the nerve impulses to their proper destination.

The integrity of the nerve structure becomes threatened, therefore, at two distinct points, and as a result two lesions in the nerve may be developing almost simultaneously. In the advanced stages, especially in the most pronounced manifestation of the disease, the extent of the involvement of the nerve and its branches is, perhaps, impossible to determine.

In the diagnosis, care is of course required lest a painful sciatic nerve is but the reflection of disease of the spinal cord or of the hip joint; or of a loaded rectum, hemorrhoids, pressure due to sitting on the edge of a chair or stool, flat-foot, or the pressure of badly fitting shoes.

The constitutional conditions, as syphilis, alcoholism, diabetes mellitus, malaria, and toxic effects in general, are to be mentioned more as contributing influences in the production of an irritation of the pyriformis muscle than of the sciatic nerve.

Sciatica being the exception in woman, pain in the course of the sciatic nerve should always direct the attention first to the intrapelvic region, as the nerve within the pelvis, the sacral plexus, may be compressed by a tumor, ovarian or uterine, or a malposition of the uterus may be the source of irritation. This pressure symptom is often seen during the course of pregnancy, and to a greater degree in the process of parturition.

It is now some eight or nine years ago that Osler, with a case of sciatica before us, made the statement to this society that "the best treatment of sciatica is six months"—an apt summary, undoubtedly, of the inefficiency of the usual measures employed, as well as a significant statement of our utter helplessness in the face of a torture which this disease has imposed upon its luckless victims.

But somewhere in the great domain of the science of medicine progress is continually going on from which blessings issue unto a suffering humanity. Having arrived at our present state of knowledge in the recognition of an offending and sinister muscle menacing the welfare of the sciatic nerve, and capable of inflicting a distressing malady, the means for its control are also found to be at hand.

Now I have a proper regard for the spirit of skepticism, as well as the indifference, unreasonable though it may appear to be, which obtains on the part of many when the subject of physical therapy is presented. It is, therefore, no wish of mine to do too much violence to these feelings. At the same time it is incumbent upon me to present the facts which my experience has shown them to be. A clinical experience extending over four years in the use of physical agents has afforded me an opportunity of acquiring more or less familiarity with their value in various conditions. What may be expected of them in this affection?

In order to show what was accomplished in a subsequent attack in the patient to whom I have just referred the following history may be presented. Two years ago this patient was seized with a second attack, after being threatened for about one week, in the same way as in the development of his first attack. On the following day, with great difficulty, by the aid of two canes and the assistance of his son, he was brought to my office for treatment. The result of the treatment was that so much relief and comfort was secured that he was enabled to walk about without any assistance, either on the part of his son or from his canes, and he so left my office, and after three days he was fully restored to the normal condition, and has remained perfectly well since.

I may likewise also again refer to the case as the result of a strain. This patient, too, had great difficulty in getting to my office on account of pain and disability. Immediately after treatment he was able to return to his work, and three treatments, in as many days, were sufficient to restore him to the normal.

This has been a fairly constant and uniform experience of mine in the control of the initial stage of an attack of sciatica. In the advanced stages, before too much damage has been done to the substance of the nerve and its branches, I have been able to accomplish surprising results in from ten to twenty treatments. And this being but the experience of others in the use of physical measures the conclusion is inevitable that in these newer methods, as compared with the older, we now have something better than "six months" in the treatment of sciatica.

Physical agents present a variety of methods for meeting the indication. In my hands, I obtain my best results in a combination of them. The methods employed in the two cases which I have cited were mechanical vibration, the static wave current, and high frequency sparks, in the order named.

What are the principles involved to meet the indication, the latter being, obviously, to liberate the nerve from its compression as early and as speedily as may be possible, before unnecessary or too great damage is done to its structure?

A brief summary of at least some of the principles as they are embodied in the various agents will prove, perhaps, not amiss.

Mechanical Vibration.—This agent teaches many interesting things in abnormal conditions of the body, and in this affection is valuable for the appreciation of the part the pyriformis muscle plays in its production, and affords efficient means for its control. Vibration reveals in a surprising manner the degree

of contraction which may occur in this muscle and also how extremely rebellious it may become in resisting the effort made to overcome it.

In such cases only thorough vibration will accomplish anything. At first the muscle will be found hard and unyielding and very soon it becomes evident that it is resisting the attack which is being made upon it, and in this state of apparent defiance it will hump up, so much so that in spite of the heavy pressure that is being exerted upon it you will feel the instrument with your hand being perceptibly lifted up, the resistance yielding only after a relentless attack, when the instrument will begin to sink, at times almost dropping suddenly to a surprising depth into the hip joint. Vibration should be continued at this point and evenly sustained until complete relaxation or inhibition of the muscle is secured, which will usually be manifested by the absence of pain.

Attention should now be directed to the spine and vibratory stimulation applied from below upwards, ascending as far as tender points reveal themselves.

In the use of so valuable an agent the method of application which I have described is permissible only in the early stages. In more advanced stages the procedure must be one of care and caution, as it is possible to do harm by irritating an already inflamed nerve structure.

Radiant Energy.—The application of heat in painful conditions of the body holds a time-honored place, and the hot water bottle has become a household necessity. Superheated dry air and the high candlepower incandescent lamp present heat in an intensified form, possessing anodyne properties to a remarkable degree.

The indication here calls for heat being directed to a deep-seated structure, and as the skin is a poor conductor of heat we must take advantage of physical laws in order that the resistance of the skin may be overcome. We, therefore, make use of radiant energy.

The agent which best meets the requirements is a high power lamp, such as the leucodescent, with which all of you are familiar. This lamp is admirably adapted for this purpose, as it gives the combined radiant energy of both heat and light, the latter of which is especially of value in conveying heat to a great depth, as rays of intensified light are readily transmitted and in their passage through the structures are being converted into heat by reason of the resistance which is met in the tissues.

The vasodilators being easily provoked into favoring a state of dilatation of the blood-vessels, as is seen in the flushing of the skin on even slight application of heat, we may look for something of the same nature taking place in deep-seated structures when heat is directed to them.

The action of heat then upon an engorged and stagnant muscle is both that of a stimulation of the circulation and a dilatation of the blood-vessels, and by determining a greater blood supply or flow, a flushing of these tissues takes place, permitting of the removal or washing away of irritating substances.

The action of a high power lamp of this character is applicable to any local inflammatory process or exudate which may exist anywhere in or about the course of the sciatic nerve, as its action favors and promotes the absorption of exudations. In other words, a better circulation tends to improve local nutrition, which, in turn, stimulates the processes of repair.

Static Electricity.—Probably the most potent and far reaching in effect in meeting the indication is static electricity. It may help some towards leading to a better comprehension of Franklinic electricity to call attention to the fact that it is capable of producing distinct and powerful mechanical effects upon tissues brought into immediate contact with it. For this purpose it is employed in the form of what has become known as the wave current, and sparks.

The wave current may be described, as it is to be adapted to the present indication, as a rhythmical mechanical movement of great penetrating power, each contraction being succeeded by a momentary period of rest or of relaxation, the whole movement occurring with a definite frequency. This current put in opposition to the passive contraction, or stasis, which is holding the pyriformis muscle captive, lays hold upon it with great power, and taking it up in its grasp a process of expression is set at work towards expelling and emptying the muscle of its foreign contents, of the infiltration fluids together with the products of irritation.

In order to make the attack still more effectual and complete in forcing the muscle into a state of relaxation the wave current should now be followed up with powerful static sparks; or high frequency sparks may be used as given from an inducto-resonator. Besides its ability to disperse local congestion and inflammation, the wave current has a notable systemic influence, setting up in the tissues of the body a gentle molecular vibratory action, stimulating the secretions and assisting in the elimination of toxic conditions. The patient subjected to this treatment will himself realize that a powerful force is being applied locally which is taking hold of the tissues reaching into the very depth of the hip joint, at the same time experiencing an appreciable effect of a genial warmth and glow of the body, oftentimes amounting to a perceptible perspiration, and, withal, imparting a feeling of well being.

The truth of all these facts, as well as the great amount of relief and comfort secured, become all the more impressive if the patient undergoing treatment should happen to be a physician himself who is suffering all the tortures of this disease. Some time since one of our estimable practitioners distressingly afflicted with this disease came to me for treatment in a state of desperation, after being helplessly confined to his bed for a period of three weeks, the result proving most gratifying to my patient and to myself.

The profession ought to know more about these mechanical effects. The unequaled results which they produce, for instance, upon the prostate gland, and upon the uterus in spasmodic or congestive dysmenorrhea, will prove a revelation; as will also the equally brilliant results in congestion of the liver, kidneys, and spleen; or, again, in an inflamed rheumatic joint, and allied conditions.

An increasing knowledge and an acquaintance with these effects will correct the very erroneous and mischievous position which many standing high in the profession are occupying with respect to this agent; and I do not doubt that the time is near at hand when the general subject of physical therapy must receive the investigation and just recognition which it merits.

Galvanism.—Although the newer modalities have largely supplanted the old galvanic and faradic currents, these have by no means become obsolete. Each modality seems to be able at one time or another to contribute something to the necessary stimulus of the reparative forces.

The wonderfully soothing and grateful flow of the continuous current as represented by galvanism has a distinctive feature in the treatment of the nerve

itself, and its judicious use in connection with the other modalities is an invaluable aid in the management of the chronic stages.

Roentgen Ray.—The *x*-ray is also to be mentioned as it is of value in stimulating the absorption of chronic indurations or scar tissue which may be causing pressure upon the nerve.

It is conceded that already the most important function of the medical profession is the prevention of disease rather than its cure, which function promises to mark the most remarkable era in the history of medical science.

In sciatica, as a neuritis, is presented the interesting proposition that it is capable of prevention as the means at our command are even now very sure of its control.

INTRAMURAL TRANSPLANTATION OF THE ROUND LIGAMENTS VERSUS ALEXANDER'S OPERATION OR VENTRO-SUSPENSIO-FIXATION OF THE UTERUS FOR RETROVERSIO-FLEXION.

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Although displacements of the uterus and among them backward displacements are mentioned frequently in the writings of Hippocrates, Galen, Ætius, and other ancient writers, the true position and normal range of movability of this organ is of recent discovery. Even at the present time differences of opinion exist as to whether or not backward displacement of the fundus is of pathological consequence. Theilhauber, E. Schroeder, Pfannenstiel, Salin, Waite, and others claiming that the symptoms are due to the complications.

While I cannot go into a discussion of this question, I have well-grounded reasons for still holding to opinions previously expressed that retrodisplacements are deserving of treatment. To those, however, who consider uncomplicated retrodisplacements of no consequence, Alexander's operation is disposed of at once, for it is only in those cases that it is permissible.

Much has been written also upon the supports of the uterus. Many of our text books abound with phrases referring to "intraabdominal pressure" and "atmospheric pressure" as forces which maintain the normal position of the uterus. Repeatedly we read that if the fundus of the uterus is posterior to a vertical line drawn from the cervix intraabdominal pressure exerts itself upon the anterior wall of the uterus, crowding it backward. Nothing could be further from the truth. Intraabdominal pressure in itself exerts force equally in all directions. In the upper part of the abdomen we have intraabdominal pressure minus gravity, and in the lower part of the abdomen we have intraabdominal pressure plus gravity, hence the greater tendency to hernias through openings in the walls of the lower abdomen. Rectocele, cystocele, uterine prolapse and retrodisplacement are to a greater or less extent hernias through the pelvic floor. The uterus like all other intraabdominal organs is held in position by ligaments. These are suited to the weight of the uterus. They are not constructed to furnish the lower wall of the abdominal cavity and stand intraabdominal pressure plus gravity; this force is carried by the pelvic floor. If the pelvic floor is rendered useless this force falls upon the uterine ligaments and they sooner or later prove inadequate to the work thrown upon them. The uterus lying in the pelvis with the long axis of the body directed antero-posteriorly, parallel to the horizon, with the long axis of the cervix continuing backward and downward, is held in this position by means of its ligaments, the broad ligaments carrying a large portion of its weight, the sacrouterine ligaments holding the cervix upward and backward, and the round ligaments running outward, forward and upward, acting as guy ropes to direct the fundus forward. With each respiration, cough or jar the uterus moves according to the force exerted. Prolapse and retroversion are closely associated and are caused by anything which increases the weight of the uterus, or anything which decreases the carrying power of its supports, or anything which exerts force or makes traction in the wrong direction. Many cases of retrodisplacement may be corrected by proper treatment instituted within a short time after confinement or after a traumatism which acted as the etiological factor. But although the non-operative treatment should receive greater attention than the surgical gynecologist has been inclined to give it, yet the complications which bear the relation to the displacement of cause or effect or are coincident with it, or the long continuance of an uncomplicated retrodisplacement oftentimes makes operative measures necessary. The literature abounds with articles upon this subject and operations and technique are described to the confusion of the student. To undertake a detailed description of these operations is plainly not within the scope of this paper. I wish to deal more with the underlying principles of operative work.

The operations which have been most in the limelight have been (1) External shortening of the round ligaments, usually known as Alexander's operation or modifications thereof. (2) Ventro-suspensio-fixation with a false ligament. (3) Internal round ligament work. Other methods have had their exploitation, among which may be mentioned vaginal suspension, vaginal fixation, vaginal shortening of the round ligaments, but they require no serious consideration. Operations have had their rise and have maintained their foothold, as they followed certain essential principles, and they have had their decline as they failed to embrace other essential principles. An operation to hold its own at the present time 1. Must be safe; 2. Must be easy of execution; 3. Must allow of intraabdominal verification of the diagnosis when this is uncertain; 4. Must allow of correction of complications through the best possible opening when they exist; 5. Must create no false ligaments; 6. Must create no abnormal arrangement of natural ligaments; 7. Must use the best part of ligaments and throw out of use the poorest part of ligaments; 8. Must stand what Goldspohn has called the double test of pregnancy, that is, the operation must not interfere with pregnancy or complicate delivery, and the pregnancy must not interfere with the future success of the operation. An operation which meets these requirements will live, an operation which fails to meet them will die when pitted against an operation which meets them to a greater extent.

Vaginal operations, other than vaginal shortening of the sacrouterine ligaments, have practically all the above points against them and the latter operation has so many points against it that it has gained little ground. The Alexander operation was pro-

posed at a time when intraabdominal operating was dangerous, and therefore its strong feature, not opening the abdomen, commended it. It used the best part of the ligaments. But it was not simple, it was technical. Abdominal surgery at this time was in her swaddling clothes, fathered by a few men who were giants in the profession; they could master the technique by familiarity upon the cadaver. The operation was widely tested and then a reaction against it, for it had been used in cases where it was contraindicated. It makes no provision for inspection of the abdomen in the doubtful cases or the correction of complications when they exist. The greatest friends of the operation admit its narrow range of usefulness. Dunning shows that only 7.01 per cent. of cases are uncomplicated. Goldspohn, who has been a close student of round ligament surgery, insists upon the necessity of intraabdominal inspection and correction of complications in all cases of retrodisplacement. His bi-inguinal celiotomy for this purpose had a place in gynecological surgery when pitted against the unsurgical ventrosuspensio fixation, but it gave us at the best only limited opportunities for inspection and correction of complications. In the light of the above requirements the Alexander and the Goldspohn-Alexander operations must die or live a very narrow and lonely existence. During the last decade of the nineteenth century, ventro-suspensio-fixation, championed by such able men as Olshausen and Kelly, came into its own; in fact, its popularity was so great that it became a curse. It had to its credit the advantage of being simple and allowing inspection of the pelvic organs and correction of complications. Abdominal surgery had grown to be a giant octopus with arms outstretched to woo would-be surgeons in their swaddling clothes. The simplicity appealed to them. Difficult technique could not be learned upon the cadaver; there were not cadavers enough. The novice could open the abdomen and stitch the uterus to the abdominal wall even though he lacked skill at pelvic diagnosis or the ability to insert a pessary. Surgery that did not open the abdomen was tame and uninteresting. Every maverick of a uterus that could not give an account of its slightest wandering was branded with the curse of an extra ligament or two. But although the incision for this operation gave the best opening for doing work, and although it made an easy operation for the tired surgeon, it ignored most of the above-named essentials for a good operation. Theoretically, then, its passing was to be expected and, in this instance, the expected happened. In the obstetrical and gynecological section of the Boston meeting of the American Medical Association, the subject came up for discussion and not one voice was raised in favor of ventro-suspension or fixation. Among the leaders in this line of work then ventro-suspensio-fixation is dead. In asking an occasional operator what he does with retrodisplacement, I have received the answer "I do the thing that I know how to do, ventrosuspension," and so the sins of the "fathers" in surgery will be visited upon their children until the third and fourth generation. Why should it not be used? It creates false ligaments which neither grow during pregnancy nor involute thereafter. There is no certainty as to the size of the resulting ligament, and therefore no reliability as to results. Transperitoneal ligaments are created, which may entangle bowels and omentum. The permanency of the operation depends upon the formation of a strong ligament that will not stretch extensively, yet these are the things which render it dangerous if pregnancy takes place. F. Martin collected with Dorland's 179 cases, 425 cases of pregnancy following ventral fixations and suspensions. Of these 425 cases 96 cases were complicated during gestation, and 116 were complicated during labor. Nine versions were necessary, fifteen forceps deliveries, three placental retentions, three postpartem hemorrhages, twenty-four abortions (four of which were produced), eight cesarean sections, one ruptured uterus, one inversion of uterus with death of mother, nine fetal deaths besides the abortions, seven maternal deaths. Ingalls, formerly an advocate of ventrosuspension, has changed his views as a result of his observations, in three cases of dystocia in which two patients suffered rupture of the uterus and one case required version in which death of the child resulted. Hurdon reports two cases in which it became necessary to open the abdomen and sever a ventrofixation ligament because of backward and upward displacement of the cervix. Lynch in a careful study of cesarean section and dystocia following ventrofixation and suspension reports two cases of dystocia and collects 21 cesarean sections. He also mentions having observed reports of 10 cases of rupture of the uterus. Of the two cases which he reports one had cesarean section with delivery of twins, the mother dying on the sixth day. In the other case version and extraction was practised with difficulty and nine weeks later celectomy was performed to obliterate the adhesions which caused persistent pain. I have operated upon one case not pregnant for the relief of troublesome pulling of the uterus upon the abdominal wall. I also lost Mrs. M. at second delivery after a ventrosuspension, from a severe postpartum hemorrhage, controlled, but returning several hours after confinement. A marked postpartum hemorrhage followed the first delivery after the ventrosuspension, but from this the patient made a good recovery. If further evidence is needed to convince the skeptic of the inadvisability of performing ventrofixation operations it is not wanting in literature as shown by Noble, Halban, Lynch, Dorland, Goldspohn, and many others.

Some of the difficulties encountered are: Retraction of scar, severe pain in abdomen, abortion and premature labor, posterior ascent of cervix, tumor mass caused by thickening of anterior uterine wall, excessive thinning of posterior wall, hyperemesis, prolongation of pregnancy, inertia, dystocia, malpresentation, rupture of scars, rupture of uterus, retained placentæ, post-partum hemorrhages, etc. In the non-pregnant relapses from inefficient adhesion, pain from too firm adhesions, obstruction of bowels, entangling of omentum tubes and ovaries around the ligament. Suspension has been praised while fixation has been condemned, but Kelly, Hurdon, Lynch, and many others emphasize the fact that intended suspension sometimes results in a fixation. The Alexander operation has points of great advantage in those cases in which it is indicated but they are few. The ventral suspension allows of correction of complications but causes other complications that are dangerous. To avoid these dangers in complicated cases many have devised means for using the round ligaments when opening the abdomen. These may properly be divided into two classes, those which employ the inner, strong part of the ligament, and those which employ the outer, weak part of the ligament. The latter do not meet the requirements for a reliable operation and place a confidence in this part of the ligament not warranted by its size and strength. The former operations may again be divided into those which reach the ligament through extensive and tedious dissec-

ton from the abdominal incision and those which reach the ligament in the abdomen where it is easily picked up.

Edebohls, Polk, and others have operated through a median incision to correct complications and then have made the inguinal incisions to shorten the ligaments. This and the operations of Noble, Barth, Sandberg and Pinkham illustrate the length to which operators will go to use the round ligament. When one is through with the intraabdominal work he is just beginning a very tedious operation. Their technicalities discourage their use. The operations which employ the round ligament and secure them within the abdomen had their beginning with Olshausen sewing the round ligament, close to the uterus to the abdominal wall. Others carried the suture in the round ligament a little further out. Carl Beck, of New York, freed the round ligament from its natural course, and sewed it into the abdominal incision, making round ligament ventrosuspension. Ferguson made a poorer opening for doing work, but a better operation for supporting the uterus in his planting the cut ends of the round ligament into the abdominal incisions, one inch lateral to the median line. Gilliam made a decided improvement upon this when he made a median incision and brought loops of the round ligaments through a puncture opening to the right and left of the median line. This was still ventrosuspension and furnished two transperitoneal ligaments which might entangle bowel, omentum, tubes, or ovaries, and three small openings from the abdominal cavity into the uterovesical space, through which a bowel might become herniated. In view of the many evils arising from direct uteroventral suspension the above objections were urged strongly against this operation. Ferguson proposed obliterating the two side openings with purse-string sutures. Simpson proposed to obviate this by running the ligament forward over the bladder, but under the peritoneum to the abdominal wall. We were looking for something that could be done through a median incision and yet use the best part of the round ligament so placed as to create no complications. It occurred to me that by going through the median line to do work in the abdomen and pick up the ligaments, I could then carry them through the internal ring and fasten them at some point without tedious dissection, as was done by Edebohls' Alexander operation following celectomy. After considering the many ways in which the ligament could be dealt with such as a puncture over the internal ring, tunneling over the aponeurosis, etc., the most feasible plan seemed to be to pass a curved ligature carrier under the aponeurosis to the internal ring and there enter the abdomen and secure the silk ligature which had been previously placed upon the round ligament two-thirds of the distance from the uterus to the internal ring. The forceps are then withdrawn and along with them the silk loop, and with this the loop of round ligament, which is sewed to the under side of the aponeurosis over the rectus muscle, and then if long enough it is sewed to the loop on the opposite side. We now have the ligament running from the uterus to the internal ring, then under the aponeurosis over the rectus muscle to or near the median line where it is sewed, then back to the internal ring, then through its normal course to the labium. It is shortened by the distance of its excursion inward and back to the internal ring. This operation which I later termed *intramural transplantation of the round ligaments,* I first performed in November, 1903. I taught it in my post-graduate and under-graduate work, but postponed its publication until I had given it a trial on numbers of cases for several months. In the spring of 1905, having had it under observation for eighteen months, I presented it in April before the Kalamazoo Academy of Medicine, in May before the Detroit Alumni Association, in June before the Chicago Medical Society, and later before other societies. My first publication, except by reference, was in *Surgery, Gynecology and Obstetrics,* November, 1905. This explanation would not be necessary were it not for a much published article by Stuart McGuire in 1906 and 1907 in which he describes an operation of very similar technique seen at a clinic and in which he was innocent of the work done by others, as shown in literature.

This operation has been combined with most other gynecological operations where the uterus is left in. In many cases a curettage, amputation of the cervix, perineorrhaphy, anterior colporrhapy, hemorrhoidectomy, celiotomy, breaking up adhesions, cöpherectomy, salpingectomy, resection of an ovary, appendectomy, and myomectomy. In one case an extrauterine gestation sac was removed with this operation following; in another case reported the four months gravid uterus was freed from adhesions, the left tube and ovary were removed, and then the intramural transplantation was done. This patient went to term, had a normal delivery, and the uterus was found in good position afterward. Three other cases are known to have been pregnant. One produced an abortion, the other two went to term. One of these became a Christian Scientist and has not since been under observation. The other had a normal delivery and the uterus remained in perfect position after childbirth. Statistics regarding pregnancy and its effects upon the operation are abundant in the Alexander operation, for I hold that the placing of the ligament is such that anything that may be said of the Alexander operation may be said of this. In the four years' experience with the operation I have known of only one case in which the uterus was not held in position. In this case adhesions were extensive, before the operation. Adhesions between the posterior surface of the uterus and the bowel seem to have taken place, pulling the uterus slightly backward. One of the sequelæ which seemed possible was an occasional hernia from disturbances at the internal ring and an occasional hematoma from trauma of blood-vessels at the ring. Neither of these accidents have been observed. In my early work I think there was a tendency to draw the ligaments too tight as an occasional case would complain of pulling for some time afterward. The operation is not so easily understood as the ventrosuspension, but it is much less technical than the operations which search for ligaments outside the abdomen.

In some cases I have made a two and one-half inch incision transversely down to the aponeurosis of the external oblique, then a median longitudinal incision to do the work in the abdomen, then the ligature carrier was pushed through the aponeurosis at the outer ends of this transverse incision, and was carried through the internal ring to pick up the control silk on the round ligament. This, while it makes a splendid operation, is only advisable when the complications are slight. The median incision through all the layers is preferable for severe complications. In addition to the round ligament work it has seemed best at times to shorten the sacrouterine ligaments. We should remember that the work of ligaments is to carry the uterus; they are

not intended to do the work of the pelvic floor, and this latter structure should be repaired if inefficient.

This operation makes the most anatomically perfect operation which has yet been proposed which does not require tedious dissection to find the ligament, and has the distinctive feature of having the ligament leave the abdomen at the proper place—the internal ring. We cannot hope in our operative work to improve upon the normal condition; no operation can anchor the ligament farther out or a less distance and be quite as right.

In conclusion I would say:

1. Alexander's operation fails because most cases of retrodisplacement are complicated.

2. An operation to be widely useful must open the abdomen for inspection and correction of complications.

3. It should be capable of being combined with the best incision for doing work.

4. It must not create false ligaments which will not evolute during pregnancy and involute thereafter.

5. There must be no abnormal arrangement of natural ligaments which allows them to run transperitoneally.

6. When the round ligaments are employed the inner, stronger portion of the ligament should be chosen.

7. An operation for retrodisplacement must often be performed after much other operating, and so should not offer any tedious technicality such as is found in the external search for the ligaments.

8. My internal inguinal shortening and transplantation of the ligaments through the abdominal wall is again submitted for comparison with external shortening of the ligaments, or ventrosuspension operations as one seeming to meet the essential requirements of an operation for retrodisplacements.

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AUTOINTOXICATION AND INDICANURIA.

By ALBERT ABRAMS, A.M., M.D.,

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This important subject has been exhaustively discussed by William H. Porter in the Medical Record,[1] but there are additional facts concerning it which demand succinct citation. The writer has endeavored to prove in his work on "Splanchnic Neurasthenia" that the essential condition present in this affection is intraabdominal venous congestion superinduced by insufficiency of the splanchnic vasomotor mechanism, and that the neurasthenic symptoms resulting therefrom may be corrected by certain abdominal physical exercises, which have for their object the relief of the intraabdominal congestion.

Among the reviews of the author's book in question, the refrain of one was that the good results achieved by treatment could only be attributed to suggestion. The latter is a portentous word and signifies much or nothing, but usually, the latter. It is, unfortunately, too often employed by the theorist as a vehicle for his oracular pronunciamentos. Among the symptoms of splanchnic neurasthenia, congestion and enlargement of the liver are invariable, and after respiratory massage of the organ, even after a single *séance* of massage, the symptoms in question evanesce. Thus, one is in possession of an objective sign that positively excludes suggestion as a contributory factor. There is another sign, however, to which I will presently direct attention. The hepatic signs to which reference has already been made are equally characteristic of intestinal autointoxication and often constitute the only symptoms of the latter affection.

Intestinal autointoxication, as we now comprehend it, may be briefly summarized as follows: During digestion, a number of poisons or enterotoxins are manufactured as a result of putrefaction of albuminoid food in the intestines. These enterotoxins attain the liver by way of the enterohepatic circulation where they are made innocuous. From the liver they pass into the general circulation and are excreted in the urine. If albuminoid putrefaction is excessive, or if the liver and kidneys (notably the former), prove inadequate in either neutralizing or excreting the poisons, autointoxication ensues. Intoxication is expressed by a motley group of symptoms which often parade under the equivocal designation, neurasthenia. Now, this conception of intestinal autointoxication is only partially correct. While the usual enterotoxins are bacterial products, there are also poisonous albumoses, *i. e.* intermediate products manufactured in the digestion of albuminous foodstuffs. It is well known that when peptones and albumoses (normal products of digestion) are injected directly into the blood, they are poisonous and even fatal in their effects. Falloise[2] has recently had an excellent opportunity of studying this subject in a patient with a fistula of the small intestine. He concludes that albuminoid-putrefaction is not the only process concerned in autointoxication, and that an aqueous extract of the contents of the small intestine is infinitely more toxic than an extract made from the contents of the large intestine. Hence, if we accept the prevailing opinion that putrefaction of the albuminous molecule is limited in the norm to the large intestine, factors other than putrefaction of the albuminous molecule must be concerned in intestinal autointoxication.

Contrary to current belief, I have found that, in those suffering from self-poisoning, diarrhea, or at any rate, looseness of the bowels prevails rather than constipation, and it appears as if this were a compensatory attempt on the part of the organism to rid itself of noxious products. Strassburger has shown that retarded bowel-action rather indicates diminished products of decomposition which normally stimulate the action of the intestines. If one were guided in the diagnosis of autointoxication by the statements of the patient, the condition would rarely be recognized. The fact is, the patients infrequently complain of symptoms of indigestion. It is only in aggravated cases that one encounters the conventional symptoms of dyspepsia. In most instances, nervous symptoms precede the local signs of indigestion.

Another supposed classical symptom of the affection is indicanuria, yet my experience shows that it is comparatively infrequent. I have shown[3] that the application of the sinusoidal current to the abdomen will promote the excretion of indican in the urine and that its presence in the urine may be demonstrated after a single *séance* lasting fifteen minutes, even though previously absent. Naturally the urine must be voided before and after the application of the current and the specimens compared after examination is made for indican. For the examination of the latter I prefer the simple test recommended by Porter.[4]

I have shown that abdominal massage properly executed will likewise augment the excretion of indican in the urine. More recently I have found that respiratory massage of the liver will also augment the excretion of indican even more pronouncedly than massage or sinusoidalization of the abdomen.

One knows that in correct abdominal breathing, the liver is rhythmically compressed between the diaphragm and the anterior abdominal wall. We are able to duplicate and accentuate physiological compression of the liver by substituting the fingers for the anterior abdominal wall, the resistance of which in ordinary breathing is but feebly expressed. The patient is placed in the recumbent posture with the thighs flexed on the abdomen. The fingers are then passed successively under the ribs in the axillary, mammary, and parasternal lines respectively and in the median line. During the time the patient takes a forced inspiration (with mouth open), pressure is executed backwards (the fingers remaining fixed) as though an effort were made to prevent the liver from descending. After this manner, the patient takes at least one hundred forced respirations. Naturally such massage must be interrupted from time to time to avoid exhaustion of the subject. The most constant point of hepatic tenderness in splanchnic neurasthenia and autointoxication is midway between the tip of the ensiform cartilage and the umbilicus. Pressure is made with the patient leaning forward at the end of a forced inspiration. Now, it will be found, that after a single *séance* of respiratory massage, the hepatic tenderness is either diminished or disappears, and indican previously absent in the urine can now be demonstrated. The diagnosis of the affections in question may be made by the results of respiratory massage.

Primarily the quantity of indican in the urine is always increased over the normal in autointoxication, but what constitutes the normal is indicated by observation of a number of patients. From day to day the excretion of indican diminishes after massage and with such diminution there is a corresponding improvement in the well-being of the individual. If, notwithstanding the foregoing, there is no abatement of the symptoms, there must be an error in the diagnosis. It is naturally assumed that the diet must be the same during the course of treatment, for one knows that the character of the diet influences indicanogenesis. Thus animal proteids demonstrate a greater tendency to putrefactive fermentation than the vegetable class. In many instances one finds an augmentation of urea in the urine after respiratory massage, and no doubt an accurate analysis will show the presence of toxins. In several instances I was able to demonstrate the presence of bilirubin in the urine after hepatic massage. One cannot ignore an insufficient splanchnic vasomotor mechanism in the treatment of autointoxication, for a disregard of the latter factor nullifies our therapeutic efforts which are often conceded to be impuissant in this condition.

Food as a factor in the treatment of autointoxication is a much abused commodity. Some one has observed that the ultimate trend of the physician was to prove that even food was poisonous and what has been suggested as a facetious prognostication, appears to have been endowed with reality, when one seriously contemplates the endeavors of dietetic revolutionists. Many dietetic vagaries are as consistent as the perfervid plea of the poet Shelley, who wanted us to become vegetarians and marry our sisters. By opposing alimentary insufficiency we possess a formidable weapon in immunizing the tissues against interminable dietetic insults. One must not forget that there is such a condition as "indigestion toxemia," due either to an excessive production of poisons or to enfeeblement of the defenses. Thus there is an hepatic as well as a gastric and intestinal dyspepsia and the liver dare not be ignored even in the treatment of an ailment so plebeian as dyspepsia.

Intestinal asepsis is, in my experience, a purely theoretic conception which is rarely realized in practice. Intestinal antisepsis is difficult if not impossible for the following reasons: (1) An antiseptic strong enough to destroy germs is equally destructive to the intestinal mucosa. (2) Germicides will destroy the innocent germs which are concerned in digestion. (3) Germicides are rapidly absorbed or are made chemically inert. Recourse is also had to purgatives but they often accentuate the symptoms of autointoxication because they concentrate the poisons already absorbed and remove the intestinal epithelium and mucus which practically act as barriers against the absorption of enterotoxins. We have discarded the swab in infectious diseases of the throat, for the reason that it mechanically injures the membrane of the throat and thus opens up new portals of infection. In this sense, the purgative is essentially an intestinal swab.

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Diseases of Doctors.—The *British Medical Journal* says that a comparison of tables compiled by statisticians in different countries gives doctors an average of 57 years at death. Setting aside affections due to exposure and infection, the practice of medicine levies a disproportionate tribute from its professors in the form of diseases of the cardiovascular and nervous systems. Angina pectoris has been called the "doctor's disease"; neurasthenia deserves to be ranked in the same category, and severer forms of neurosis are common.

Polisarcia and Fatty Heart.—Giovanni Galli considers whether there may be a hereditary element in abnormal obesity, the patient inheriting a diminished power of oxidation with an especial tendency to deposit fat in the cells. Some persons who have undergone amputations, women at the menopause, and persons with genital stimuli are liable to deposit fat in the tissues. The abuse of foods, wine, and alcohol has the same result. Such persons always have disturbances of the circulation. But fatty heart does not always accompany obesity. Fat becomes deposited in the cells of the body, and they undergo degeneration. It is also deposited in an extracellular manner. The left ventricle is most frequently affected by fatty degeneration, the tissue taking on a yellowish color. The ventricle becomes dilated and the valves insufficient. Rupture may even occur. Atheroma of the coronary arteries is not infrequent. Pain in the region of the heart is not rare, irradiating to the left arm. Treatment is mainly prophylactic, including changes in diet, such as to reduce fat with baths and graduated exercise.—*Gazzetta Medica di Roma.*

Resuscitation by Cardiac Massage.—At a recent meeting of the Leeds and West Riding Medico-Chirurgical Society, J. F. Dobson read notes of a successful case of resuscitation of a child apparently dead from chloroform syncope. The abdomen was opened and the peritoneum stripped off the diaphragm and the heart, motionless and flaccid, was massaged through the diaphragm until beating recommenced. Prof. A. S. F. Grünbaum, in discussing the case, drew attention to the length of time during which a child's heart remained excitable. He had seen in two cases at post-mortem examinations hearts removed six and ten hours after death prove excitable when placed under suitable conditions.—*The Lancet.*

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THE WORK OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

THE annual report of the Surgeon-General of the U. S. Public Health and Marine-Hospital Service, recently issued, is an interesting document and an enlightening one to those who think that the National Government, in the absence of a Department of Public Health with a cabinet officer at its head, is doing little to safeguard the health of the country. The Bureau of Public Health of the Treasury Department, adapted from the century old Marine-Hospital Service, has now been in existence nearly six years, and the work it has accomplished in that time has fully justified its creation. The work of the Bureau in relation to public health is practically unlimited. It has charge of the quarantine service over the whole of the Pacific coast, the Gulf coast with the exception of Texas, the Atlantic coast with the exception of Baltimore, New York, Boston, and a few of the minor neighboring ports, and in the Philippines. In connection with the quarantine service medical officers of the Bureau are stationed at ten of the chief fruit ports in Central and South America, at the principal ports of Japan and China, at Calcutta, and at Naples, whose duty it is to insure care in the sanitation of the vessels sailing for the United States and also to examine departing emigrants. An interesting feature of the Service, to which this report calls attention, is its detail of officers to assist other Departments of the Government and to assume sanitary control in case of emergency. Thus three surgeons have been assigned to duty with the Isthmian Canal Commission, one has served as a member of the hookworm commission in Porto Rico, Surgeon Victor G. Heiser is in charge of national quarantine in the Philippines and has also for over two years been director of health in the Islands; the plague situation in San Francisco and elsewhere on the Pacific coast is in charge of officers of the Service; the Bureau is investigating leprosy at Molokai, Hawaii, and is erecting buildings for the station there; and the sanitation of the Jamestown Exposition was also made a part of the work of the Bureau.

During the year investigations of the causes of typhoid fever have been made in Washington, in Savannah, and in Charlotte, N. C. A very important investigation, to which we have referred in a recent issue, was that of the milk supply of Washington. The report of this inquiry is one of the most important documents relating to public health ever issued by the National Government. Much of the work of this investigation was conducted in the Hygienic Laboratory of the Bureau, which is an institution of great merit. The scientific work of the Laboratory, as expressed in the bulletins issued therefrom, has been received with interest and commendation by sanitarians and investigators everywhere and compares favorably with that of the other and older institutes for scientific research throughout the world. A new building, doubling the capacity of the laboratory, will be erected this year. Another important work of the Health Service is the supervision of the manufacture of vaccines, serums, etc. Each and every lot of vaccine virus sold by permission of the Service is examined bacteriologically to determine its freedom from tetanus and other pathogenic microorganisms, and in addition, both vaccine virus and therapeutic serums are purchased from time to time in the open market in different parts of the country, and examined. Some time ago a standard was prepared in the Hygienic Laboratory for measuring the units of diphtheria antitoxin, and recently one has also been devised for measuring the strength of tetanus antitoxin. In addition to this work of supervision of antitoxic serums and vaccines, the Surgeon-General recommends that the examination from a public-health standpoint of new and nonpharmacopeial disinfectants and medical preparations be made one of the functions of the laboratory. A good deal of this work has already been done, but it is believed that much more should be done there in the future. An examination of some of these products is conducted unofficially by the Council on Pharmacy and Chemistry of the American Medical Association, but Surgeon-General Wyman holds that such work is incumbent on the Public Health Service in accordance with the law establishing the Hygienic Laboratory. Such an investigation, conducted by a Bureau of the National Government, would compel the respect of the entire profession, and its findings would be marked by an authority which those of the Council on Pharmacy and Chemistry cannot command.

The question of the creation of a new executive department of the National Government and the addition of another member of the Cabinet in the person of a Secretary of Public Health is one which is legitimately open to discussion. While admitting the weight of some of the arguments against such a measure, we nevertheless believe it would be a step in the right direction, economically as well as in the actual saving of life and health. There is perhaps a vague recognition of the economical side of sanitary work in the fact that the Public Health Service is a Bureau of the Treasury Department, but this is only one, and the less important side. An independent Secretary with his greater authority and freedom of action could accomplish much more than the mere head of a Bureau, and the existence of a separate Department would emphasize the importance of sanitary work, would give it greater dignity in the estimation of the community, and would vastly increase its utility and power for good. But Congress is against it and the President is against it, so for the present there is no hope of the establishment of such a governmental department. When, however, the time comes for this recognition of the importance of safe-

guarding the health of the people, and come it must, the department will be found already organized; the verbal changes of Bureau to Department and of Surgeon-General to Secretary will be all that is necessary to create a full-fledged and thoroughly efficient Department of Public Health.

THE LIMITATIONS OF THE NEWER TUBERCULIN REACTIONS.

The enthusiasm that has greeted the advent of the recent cutaneous and ophthalmic methods for the early diagnosis of tuberculosis has reached the stage when it must needs be tempered by the searching criticism of experience. That there has been an urgent need for a simple clinical test for the detection of incipient tuberculosis is amply evidenced by the widespread adoption of the methods of von Pirquet and Calmette. The literature, particularly of Germany and France, is teeming with reports, some favorable, and some unfavorable, upon the real practical utility of these newer diagnostic resources. The comparative value of the various reactions in children has received the attention of F. Reuschel (*Münchener medizinische Wochenschrift*, February 18, 1908). This observer has found that the original hypodermic method of Koch is not trustworthy in cases of severe phthisis and in acute miliary tuberculosis, and cites the observations of Köhler and Behr that 25 per cent. of normal individuals react with fever to the hypodermic injection of tuberculin, this febrile response being attributed to hysteria. Of far greater value than the constitutional symptoms of the subcutaneous injection of tuberculin has been found the local phenomena in the region of the needle puncture. This, the so-called "puncture reaction" ("stichreaction" of Escherich), consists of a sharply circumscribed red area of infiltration, edema, and pain surrounding the site of puncture. Reuschel has found that the puncture reaction was constant in cases of tuberculosis, and that it was present in cases that did not react with fever. He believes that the puncture reaction is particularly available for suspicious cases that are regularly "running a temperature," in which, of course, the febrile response to tuberculin would be entirely masked. On the other hand, a febrile response to tuberculin, in the absence of the puncture reaction, is not to be regarded as an indication of the presence of tuberculosis. As regards the cutaneous reaction of von Pirquet, Reuschel found that it was convenient and adapted for general use in practice: when positive, it indicated tuberculosis, but its negative occurrence after a single trial gave no decisive answer. In the latter case, the performance of the puncture reaction would clear up the difficulty. Both methods were not to rival the older method of Koch, but all three were to supplement one another. It was still to be investigated whether the local sensitization revealed by the newer methods indicated the presence of antibodies of tuberculosis, which this observer doubted, or whether it revealed the presence of antibodies to the proteid substances of the bouillon.

Prof. E. Feer (*Münchener medizinische Wochenschrift*, January 7, 1908) finds in the von Pirquet reaction a valuable aid in the diagnosis of tuberculosis in children. But the intensity of the reaction is not proportionate to the extent of the lesion, and while the positive reaction indicates the presence of tuberculosis, a negative result does not exclude this disease, for in the presence of cachexia, miliary tuberculosis, and meningitis, there is no cutaneous reaction. In children the vaccination test is considered preferable to the ophthalmous reaction, which is absolutely contraindicated in scrofulous children, on account of the frequent occurrence of severe conjunctival irritation and phlyctenulæ following the instillation of tuberculin. The value of the cutaneous reaction diminishes as age advances, for in older children and adults, apparently in perfect health, some of whom are possibly carriers of small, inactive tuberculous foci, in the majority of cases there is a positive reaction to both the cutaneous and conjunctival tests. Thus, von Pirquet has found that in individuals from 10 to 14 years of age, 55 per cent., and in adults, 90 per cent., react positively to both tests. Feer found that between the ages of 10 and 15 years, 35 per cent. react positively. Thus at this period of life, the positive reaction is of limited significance, while to the negative response a greater value must be accorded. The rule is laid down that the nearer one approaches the nursing period, the more the positive reaction is apt to indicate the presence of tuberculosis.

A careful study of the comparative values of the skin and ophthalmic reactions was made by Carlos Maunini (*Münchener medizinische Wochenschrift*, December 24, 1907). He found that both reactions occurred with great constancy in all cases of tuberculosis, excepting those that were far advanced, and that although it was quite probable that the reactions were specific, this had not yet been proved. In individuals in whom there was no reason to suspect tuberculosis, a positive cutaneous reaction occurred six times as frequently as the ophthalmic. Assuming that the reactions were specific, this contradiction was explained on the hypothesis that the ophthalmic reaction revealed an active tuberculosis, while the cutaneous reaction revealed a latent focus.

That the ophthalmic reaction is not altogether a harmless procedure is indicated by the experience of Wiens and Gunther (*Münchener medizinische Wochenschrift*, December 24, 1907). These observers found that the instillation of a 1 per cent. solution of tuberculin in a number of cases caused severe ocular disturbances, in some lasting for several months. These severe reactions occasionally occurred in patients in whom there was not the slightest evidence of tuberculosis. It is concluded that the Calmette reaction is by no means as harmless as has been thought, and is to be absolutely excluded in all cases of chronic conjunctivitis, no matter how mild.

In 17 positive cases of tuberculosis in which the diagnosis was confirmed by the presence of bacilli in the sputum, C. Kleinberger (*Münchener medizinische Wochenschrift*, December 24, 1907) found that 7 cases did not react at all, and that 2 reacted doubtfully, to the ophthalmic test. A positive reaction following a second instillation into the conjunctival sac was of no clinical value, for in 46 cases in which tuberculosis was clinically excluded, and in which

the first instillation was followed by a negative or by a mere trace of a positive reaction, a second instillation was followed by a markedly positive reaction in 36 cases, which was 78 per cent. of the entire number. This percentage was certainly too large to be explained on the basis of a latent tuberculosis. It simply indicated that the conjunctiva was sensitized by the first instillation. This observation has more recently been confirmed by M. J. Rosenau and J. F. Anderson (*Journal of the American Medical Association,* March 21, 1908), who found that in twelve normal individuals in whom the first instillation of tuberculin was negative, the second instillation after an interval of 51 days was followed by a positive result. These experiences prove that no reliance can be placed on the result following a second instillation of tuberculin.

There have been a number of investigations whose results argue against the specific nature of the ophthalmic reaction. Thos. L. Blum (*Münchener medizinische Wochenschrift,* January 14, 1908 has found a positive reaction in 31 out of 188 cases which were clinically nontuberculous, the positive reaction occurring in cases such as emphysema, chronic bronchitis, tabes dorsalis, apoplexy, sciatica, severe anemia, enteritis, pleurisy, and diabetes. Similarly, S. Cohn (*Berliner klinische Wochenschrift,* November 25, 1907) found that 8 out of 12 typhoid patients presented the specific reaction. F. Levy (*Deutsche medizinische Wochenschrift,* January 16, 1908) obtained a positive reaction in 2.5 per cent. of 235 nontuberculous patients, while P. Eisen (*Beiträge zur Klinik der Tuberculose,* Vol. VIII, No. 4) obtained a positive reaction in 31 per cent. of 17 patients with various nontuberculous affections. G. Serafini (*Giornale della R. Accaddemia di Medicina, Turin,* November, 1907) found that the ocular reaction was not conclusive in cases of tuberculous processes in the bones and joints. The reaction was positive in certain gonorrheal articular affections, as well as in several cases of senile and other nontuberculous bone affections. A. Plehn (*Deutsche medizinische Wochenschrift,* February 20, 1908) obtained a positive reaction in 2 out of 5 cases of typhoid; in 2 out of 5 patients with scarlet fever; in 6 out of 12 with articular rheumatism; in 3 out of 6 with acute bronchitis; and in 3 of enteritis. In none was there any tuberculosis.

It cannot be denied that the cutaneous tuberculin reaction is a valuable addition to our diagnostic armamentarium, furnishing strong presumptive evidence of the presence in the body of some tuberculous focus, either healed or active, but reliable only when considered in connection with other signs of the disease. The positive reaction should be interpreted in the light of the numerous recent investigations of the limitations of and the possible erroneous conclusions that might be derived from it. In addition to its diagnostic value, this reaction bids fair to throw considerable light upon the problem of immunity in tuberculosis. The ophthalmic reaction, however, is one that should be employed with extreme caution, for the procedure is by no means as harmless as was at first supposed, and many cases are now on record of corneal ulceration and other untoward results of the tuberculin instillations.

OPERATIVE TREATMENT OF HIRSCHSPRUNG'S DISEASE.

This disease, megacolon, or congenital dilatation of the colon, though easily diagnosed, is of poor prognosis, hence any method of treatment that offers a prospect of success is worthy of serious consideration. In the *Deutsche Zeitschrift für Chirurgie,* Vol. 90, Nos. 4, 5 and 6, Ito and Soyesima recently published the history of a boy suffering from this disease and discussed the treatment in detail. Their patient, fourteen years old, had suffered from nocturnal incontinence of feces since birth, the abdomen was distended, the umbilicus flat, and there was visible peristalsis. Fluid was absent, but the left half of the abdomen, from just above the umbilicus down to the true pelvis, was occupied by a doughy, slightly movable mass, with a dull tympanic note. A rectal tube inserted into the anus entered the mass which was found to consist of soft feces. As medical treatment was of no avail they decided to operate. At operation the descending colon and sigmoid were found greatly dilated, their wall was thickened, their mesentery normal, and strictures were absent. They made an anastomosis between the ileum and upper part of the rectum and then did a coliplication for a distance of twenty centimeters above the point of anastomosis, thus reducing the width of the intestine from eleven to five centimeters. After operation the boy had occasional voluntary movements but the fecal tumor returned. They operated a second time and divided the ileum just beyond the point of anastomosis thus entirely excluding the colon from the intestinal tract. The boy made an uneventful recovery and was cured.

Ito and Soyesima do not say that this disease should be treated only surgically, nor of course do they hold as some observers that it should never be treated surgically. They believe in surgical treatment when massage, electricity, diet, and colon irrigations have been of no avail. As regards the surgical procedure of choice it may be said that nearly all the possible intestinal operations have been tried. Colotomy with immediate closure or puncture of the dilated intestine gives only temporary results. Coliplication and coloplastic operations are rarely followed by any improvement, never by cure. Enteroanastomosis does not always give good results as we see in the above case. However, Ito strongly recommends enteroanastomosis with exclusion of the diseased intestine from the tract, and the result obtained in his case seems to warrant his recommendation. The only other operation which is effectual is resection of the dilated portion of the intestine; this is a radical measure and is accompanied by much greater danger and should therefore be performed only when Ito's method is impossible.

The Treatment of Diphtheria with Pyocyanase.

The gratifying results obtained by von Emmerich in the treatment of diphtheria by means of pyocyanase, a product formed in cultures of the *Bacillus pyocyaneus,* have been corroborated by several other observers, who have stated that the local application of the agent to the diseased surfaces was followed by the disappearance of the membrane,

diminution in the oral fetor, and improvement in the general condition. It is a difficult question, however, to determine the efficacy of a new remedy in a malady like diphtheria for which a satisfactory mode of treatment already exists, for in all severe cases, of course, serum must in fairness to the patient be used in addition to the pyocyanase. Schlippe (*Deutsche Medizinische Wochenschrift*, April 2, 1908) administered the latter alone in six mild cases, with good results, but in six others he was obliged to give serum also. Twenty-four other patients received both remedies from the start. Experiments *in vitro* with diphtheritic membrane showed that the pyocyanase was actually lytic for this material, but on the result of his clinical observations Schlippe is not inclined to estimate its therapeutic value very highly. It should not be used except as an adjunct to the serum treatment, but would appear to have distinct value in cases in which there is excessive membrane formation. In the severe examples of septic diphtheria it is not particularly effective and it does not cause the destruction of all the diphtheria bacilli present in the throat and nasal passages.

The Physiological Action of the Roentgen Rays.

That the Roentgen rays possess the capacity to influence cellular activities has been clearly demonstrated, though the manner in which this effect is produced is still uncertain. A number of observers have agreed with Schwarz's view that the fundamental process is a breaking down of lecithin, a theory founded on the observation that egg yolk after radiation decomposed more quickly than before. Richter and Gerhartz (*Berliner klinische Wochenschrift, March* 30, 1908) have investigated the problem by exposing adrenalin to radiation and then testing its activity as regards blood pressure elevation and sugar excretion. Both of these properties, but especially the former, were considerably reduced by the treatment, the capacity to elevate the blood-pressure on injection into animals being partly or entirely lost. Further experiments were made on various ferments, including lab ferment, yeast, pepsin, pancreatin and others, with the result that the rays appeared to be without effect on the specific properties of these substances. The authors, therefore, conclude that theories seeking to explain the action of radium or Roentgen rays through a modification of fermentative processes are based on a very insecure foundation.

News of the Week.

Antivivisection Bill.—The Davis-Lee bill designed to restrict vivisection, has been reported by the Senate Judiciary Committee, and its advocates are making strenuous efforts to secure its passage at this session of the legislature. If it should receive legislative approval and become a law the progress of medicine would be seriously hampered in this State, and it is highly desirable that a vigorous protest against it be made by all the physicians of the State. The chairman of the Committee on Legislation of the State Medical Society is Dr. Frank Van Fleet, 64 Madison avenue, New York City.

International Sleeping Sickness Conference.—The second International Sleeping Sickness Conference has terminated without being able to agree on the draft convention before it. The French and Italian plenipotentiaries declared themselves unable to accept a proposal, made at the last conference in June and then unanimously recommended, for the establishment of a central bureau in London, and they proposed that the work connected with sleeping sickness should be taken over by the hygienic bureau, which a conference held in Rome in November last as a sequel to the Paris conference of 1903 has proposed should be established in Paris. This proposal the German plenipotentiaries declined to accept, and they strongly support the British plan for the establishment of a bureau in London. The French plenipotentiaries were also unable to agree to other parts of the draft convention, and, although the majority of the powers represented supported these proposals, it was found useless to proceed further in the absence of unanimity.—*Science.*

Plague in Venezuela.—The State Department is reported as having received from the American Consul at La Guayra a despatch stating that a disease whose nature has not yet been disclosed by the health authorities but which is supposed to be plague, is causing many deaths in that city. The port has been closed to commerce by the Venezuelan Government.

Smallpox in Philadelphia.—The discovery that a negro couple from Wakefield, Va., who had come to Philadelphia on their wedding trip, were suffering from smallpox, recently led to the vaccination of some 1,500 persons living in the vicinity of the dwelling in which the visitors had been received as guests.

For Sanitation in Havana.—The Havana City Council has approved a plan for the paving of the city streets and the improvement of the sewerage system at a cost of $15,000,000.

Accidents on the Street Railways.—During the month of March forty-four persons were killed in the street traction lines of this city. During the month of February the number was eighteen.

Bequests to Hospitals.—By the will of the late Clemence L. Stevens the following institutions receive bequests: The Home for Incurables, the American Female Guardian Society and the Five Points House of Industry, $10,000 each; the New York Circulating Library for the Blind, $5,000; St. Thomas's Protestant Episcopal Church, for a free bed in St. Luke's Hospital, $5,000; the New York Home for Convalescents, $2,000; St. Luke's Home for indigent Females, $3,000; the Home for Old Men and Aged Cripples, $1,000; the Society for the Relief of the Destitute Blind, $2,000; Manhattan Eye and Ear Infirmary, $1,000; St. Luke's Hospital, $2,000; Home of Rest for Consumptives, $2,000; Presbyterian Hospital, $2,000; Peabody Home for Aged Women, $2,000. Under the will of the late Samuel Scholle, bequests of $1,000 each are made to the Mount Sinai Hospital, the Hebrew Benevolent and Orphan Society, the Montefiore Home for Chronic Invalids, and the Home for Aged and Infirm Hebrews. The Northeastern Dispensary is left $250.

Large Bequest to St. Luke's Hospital.—By the will of the late William Wheeler Smith the major part of his estate, estimated as amounting to between $2,000,000 and $3,000,000, is to go to St. Luke's Hospital on the death of the testator's widow, and during her lifetime a considerable portion of the income from this amount is to be paid to the hospital. Mr. Smith was an architect, and the College of Physicians and Surgeons, the Sloane Maternity Hospital, and the Collegiate Dutch Church are among the buildings he designed.

Bequests to Philadelphia Institutions.—By the will of the late Mrs. Jane B. Shain, a former Philadelphian, who died recently at Atlantic City, the sum of $1,000 is bequeathed to the Atlantic City Hospital, $1,000 to the Mercer Memorial Home for Women, and $1,000 to the Children's Seashore House.

State Hospital Transferred.—Bills have been prepared for the transfer of the State Hospital for the Insane at Flatbush to the Creedmoor rifle range ground at Flushing, L. I., which has been abandoned for military purposes. The present Long Island State Hospital at Flatbush is overcrowded and at Creedmoor more ample accommodations can be provided.

Chaille Memorial and Jubilee.—On May 19, 1908, the alumni of the Medical Department of Tulane University propose giving a Stanford E. Chaille Jubilee to celebrate the anniversary of the fiftieth year of teaching service of the Dean of the Medical Department, Dr. Chaille, who is about to retire at the end of the current year. It is the intention to establish a memorial fund for the endowment of a chair of physiology or hygiene to be named after Dr. Chaille. The funds derived are to be invested in a dormitory for medical students and the revenue employed for the support of the chair. The chairman of the committee organized for the purpose is Dr. A. L. Metz and the secretary and treasurer is Dr. Isadore Dyer, both of New Orleans. Checks should be made payable to the Chaille Memorial Fund, P. O. Box 778, New Orleans, La.

Seaman Prize.—The time limit for the receipt of essays in competition for the prize of $100, offered by Dr. L. L. Seaman for the best paper on "The Economic Waste Due to Occupational Diseases" has been extended to June 15. Each essay must contain not more than 5,000 words and be signed by a *nom de plume*, the real name and address being enclosed in a separate sealed envelope. Competitors should address Mr. Josiah Strong, President American Institute of Social Service, 231-241 West Thirty-ninth street, New York City.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations on May 9, 1908, for the following positions: Health Officer, Town of Brasher, St. Lawrence County; Physician, State Hospitals and Institutions, salary, $900 and maintenance. The last day for filing applications for these positions is May 2. Full information and application forms may be obtained by addressing Mr. Charles S. Fowler, Chief Examiner of the Commission, at Albany.

The Southern Medical Journal.—A new journal with this title is to be published in Nashville, Tenn., under the editorship of Dr. J. A. Witherspoon, with Dr. W. A. Bryan and Dr. J. M. King as managing editors. The editorial staff and the list of collaborators are large and comprise many of the leading southern physicians. The first number, to appear on June 5, will contain a tribute to the late Dr. Richard Douglas.

Examination Expert Arrested.—At the instance of the State Board of Regents a young man was arrested last week as the result of advertising his willingness to substitute for less gifted individuals in the State examination and secure for them medical or legal certificates for $1,000 each.

Fairfield County (Conn.) Medical Society.—At the one hundred and sixteenth annual meeting of this society held in Bridgeport last week the following officers were elected: *President*, Dr. D. C. Brown of Danbury; *Vice-President*, Dr. Samuel Pierson of Stamford; *Secretary*, Dr. F. W. Stevens of Bridgeport; *Treasurer*, Dr. J. D. Gold of Bridgeport.

New Hampshire Medical Society.—The one hundred and seventeenth annual meeting of this society will be held in Concord, May 14 and 15, 1908, under the presidency of Dr. John H. Neal of Portsmouth. The secretary is Dr. D. E. Sullivan of Concord.

McGill Medical Society.—At the annual meeting of this society held in Montreal on April 9, the election of officers resulted as follows: *Honorary President*, Dr. Blackader; *President*, Mr. Watson A. Lawrence; *Vice-President*, Mr. L. M. Lindsay; *Secretary*, Mr. W. G. Hepburn; *Assistant Secretary*, Mr. W. R. Stone; *Treasurer*, Mr. H. B. Hovey.

Nashville Academy of Medicine.—The annual banquet of this organization and the Davidson County Medical Society was held in Nashville on April 7. The following officers were elected to serve for the ensuing year: *President*, Dr. W. H. Witt; *Vice-President*, Dr. Wm. Litterer; *Secretary*, Dr. Holland E. Tigert.

Brockton (Mass.) Medical Society.—The following officers were elected at the meeting of this organization held on April 9: *President*, Dr. J. P. Shaw; *Vice-President*, Dr. W. P. Safford; *Secretary*, Dr. R. A. Elliott; *Treasurer*, Dr. E. E. Goodwin.

Association of American Teachers of the Diseases of Children.—The Association of American Teachers of the Diseases of Children will hold its annual meeting in Chicago on June 1. The membership of the organization is made up of those actively engaged in teaching pediatrics or holding positions in pediatric clinics or hospitals. All such are invited to join the Association; and all physicians and surgeons interested in children are invited to attend the meeting. Its objects are the study of the teaching and practice of pediatrics. The officers of the Association are as follows: *President*, Dr. Samuel W. Kelley; *Vice-President*, Dr. Chas. Douglas; *Secretary*, Dr. Robert A. Black of Chicago; *Treasurer*, Dr. George G. Cattermole.

Obituary Notes.—Dr. I. W. Bothwell of Wellborn, Fla., died on April 4 after an illness of two months. He was a graduate of the University of Georgia and had practised in Wellborn since 1884.

Dr. George E. Thompson of Boston died on April 12 at the age of fifty-nine years. He was born in Durham, N. H., and was graduated from Dartmouth College in the class of 1879, receiving his medical degree from Harvard medical school five years later. He had been connected with several of the Boston Hospitals.

Dr. William J. Ford of Washington, Conn., died on April 1 after a brief illness. He was born in Washington, and received his medical degree from the College of Physicians and Surgeons of this city. He held several public offices, and at one time represented Washington in the General Assembly.

Dr. J. Alexander Wade of Danbury, Conn., died on April 11 after a long illness at the age of forty-nine years. He was born in Ulster County, N. Y., and was graduated from Bellevue Hospital Medical College about fifteen years ago, since which time he had practised in Danbury.

Dr. Ralph Wilder of Medfield, Mass., died sud-

denly on April 17 at the age of thirty years. He was a native of Winchendon and was a graduate of the Dartmouth College Medical School.

Dr. Dewitt Crumb of South Otselic, Chenango County, N. Y., died last week at an advanced age. He was a Civil War veteran.

Dr. John Wilson Robie of this city died on April 15 at the age of seventy-one years. He was a graduate of the College of Physicians and Surgeons.

Dr. James King Crook of this city died after a short illness on April 16 at the age of forty-nine years. He was a graduate of the New York University Medical School, and had been connected with a number of hospitals and dispensaries.

Dr. William M. Coke of Portland, Ore., died on April 1 at the age of eighty-two years. He was born in Canton, O., and was graduated from Jefferson Medical College in 1850. He served as surgeon through the Civil War, and settled in Portland in 1889.

Dr. Geo. C. Richards of Glastonbury, Conn., died on April 10 at the age of eighty-seven years at the home of his son, Dr. H. G. Richards. He had practised in Danbury for over thirty years and about six years ago retired to Glastonbury.

Dr. Charles H. Hubbard of Essex, Conn., died on April 12 at the age of seventy-one years. He was born in Bloomfield and had practised in Essex for forty-eight years.

Dr. Mary A. O. Hunt of Manchester, N. H., died on March 25 at the age of eighty-eight years. She was born at Gilmanton and after graduating from the New England Female Medical in 1863 began to practise in Manchester.

Dr. Catherine M. Kennedy of Springfield, Mass., died on April 10 at the age of sixty-four years. She was born in Ireland and was graduated from the Woman's Medical School of the University of Pennsylvania in 1873. Since that time she had practised in Springfield.

Dr. S. H. Clisbe of Coldwater, Mich., died on April 7 at the age of sixty-five years. He was born in Quincy, Branch County, and was graduated from the University of Michigan in 1868. He had practised in Coldwater over thirty-five years. At one time he was president of the Tri-State Medical Association of Michigan, Ohio and Indiana.

Dr. D. B. Allen of Wichita, Kan., died on March 30 in Kansas City at the age of seventy-two years. He was born in Oberlin, O., and had practised in Wichita since 1869. He was the first mayor of the city, had served in the legislature, and held other public positions.

THE HARVEY SOCIETY LECTURE.

The ninth of the present series of lectures given under the auspices of the Harvey Society was delivered on Saturday evening, April 18, by Professor A. E. Taylor, of the University of California, the subject being "The Rôle of Reversed Ferment Reactions in Metabolism."

After a few introductory remarks, the speaker said that three main points should be considered: 1, What was the status of the reversion theory; 2, What were the specific facts showing that the theory holds; and 3, What still obscure facts in physiology were readily brought in line with the theory. Before discussing the first point, Professor Taylor described what was meant by enzyme action, and said that there still appeared to be considerable misunderstanding concerning this subject. He pointed out that the actions in question could be grouped under three heads: namely, anhydrations and hydrolyses, reductions and oxidations, and reconstructions. So far as the last-mentioned was concerned, there could be reconstructions with alterations of the molecular mass, and without such alterations. It was important to remember, the speaker said, that in enzyme actions there was no energy relation involved. Enzymes merely accelerated the velocity of already existing reactions. Some misguided writers had said that enzymes violated the law of the conservation of energy, and that was pure nonsense. It was impossible for enzymes to originate a chemical reaction. All modern chemistry was based on the conception of a reversion of chemical reactions. Nernst had expressed the view that all chemical reactions were reversible, and this was probably true. It had been said that colloidal reactions were not reversible, but really so little was yet known about colloids that this might be disregarded. Certainly the experimental data concerning colloid reactions were very conflicting. The speaker believed that colloidal reactions were probably made up of purely chemical reactions plus capillarity.

Professor Taylor then discussed the laboratory synthesis of various groups of substances and took up first the sugars. The synthesis of a monosaccharid had not yet been accomplished, and the difficulties were considerable. Nernst had calculated that a pressure of thirty atmospheres would be necessary to synthetize lactic acid. The synthesis of the fats, on the other hand, was quite readily accomplished, and several instances were given. Synthesis of the proteins was difficult. Emil Fischer had pointed out how important it was to have all the various factors involved properly adjusted. The least oversight was fatal to success.

The speaker then took up the synthesis of proteins in the living organism, and showed how the original oxygen and nitrogen were combined to form nitrous and nitric oxide. There was an equilibrium between these two oxides. In this connection, he spoke especially of the important biological rôle played by bacteria in building up these nitrogenous compounds. The next step in the synthesis was the formation of amides and ammonia, and after this the addition of fatty acids produced amidoacids. Many of the lower forms of life could carry out this process entirely, but the higher forms needed to be supplied with the fatty acids. The next step after the addition of the fatty acids was the introduction of sulphur and the benzol ring. In this way there were produced thioamido acids and benzol amido acids, and these could then be built up into protein. The animal organism was unable to supply the sulphur and the benzol ring; these had to be synthetized in the vegetable kingdom. The speaker pointed out that lower plants could complete the entire cycle of the synthesis as just outlined; in man only a small part was carried out. He also stated that all of the reactions mentioned above were reversible in the organism in which they occurred.

In the portal vein of an animal we find ordinary protein, not special protein such as was ingested. Where did this come from? The only explanation was the assumption of a condensation of cleavage products, that is to say, a synthesis due to reversed ferment action in the intestinal wall. In this condensation there was an intramolecular rearrangement of the amido groups. In fact the specialized proteins should be regarded as substances in which the amido groups were peculiarly arranged, or in

which there might be certain special amido groups or even none at all. The last was the case with gelatin, and this fact explained why gelatin could not be made to sustain life.

Professor Taylor passed on to the metabolism of carbohydrates, and discussed the rôle of reversed reactions. A great deal of the work in this special field had been done by Walter Loeb. In the synthesis of carbohydrates there were formed from the carbon dioxide and water, formic acid and formaldehyde. By introducing an amido group and amido acids, the former was built up into protein; and it could readily be seen how the formic acid could also be built up into fats by the addition of fatty acids and glycerine. In synthetizing the various carbohydrates it was difficult to know whether the process was always one step at a time, whether it was from one sugar to the next higher. It was probably not the case. The speaker discussed the formation of sugars in various plants, at various periods of their development, and showed how cane sugar originated from a synthesis of dextro and lævo glucose. In the animal body the only sugar found in the blood was dextro glucose. It mattered not what the sugar ingested had been. Hence there had been some rearrangement of the molecule in the body. It was probable that the animal body always first converted the ingested sugars into glucose and so burned them. There was some evidence to show that the glucose was really utilized through a stage of ethyl alcohol. The speaker demonstrated a scheme showing how glucose might be broken down in this way.

Professor Taylor then took up the metabolism of fats. The body fat of an animal varied according to the source of the fat. When it had been synthetized from carbohydrate and other food ingested, it was found that the body fat was specific to the animal species in which it was formed. But when the body fat was derived from ingested fat, it was similar to the fat of the diet. The combustion of fat in the body was not well understood. It was improbable that fat was burned in plants. In plants, the entire series of reactions was reversible; in animals only a small part was so.

Purin metabolism was next discussed. Fully developed animals were apparently unable to utilize the purin group compounds. Curiously, this was not true for growing embryos. The speaker said he knew of but one instance of a reversion of reaction in purin group compounds in animal life, and that was in the case of some fish eggs. But even here the amount of such substances utilized was not large.

In discussing the mechanism by which reversion of reaction is accomplished the speaker said that this was still very obscure. The ferment had nothing to do with the direction of the reaction. All it could do was to accelerate the reaction, and this occurred entirely irrespective of the direction which the reaction chanced to have at that particular moment. In chemical reactions outside the body, thermic and photochemical influences could cause a reversion of the reaction, but these did not enter into consideration in animal metabolism. He would have to admit that he was entirely at a loss for an explanation. In ordinary chemical reactions the quantity of the catalyzer was of no consequence, but in the animal body this had been found not to be true. But even these differences in the quantity of a ferment at a given time could not explain reversion.

In closing, the speaker alluded to the unfortunate influence, in his opinion, which Ehrlich's views of multiple, specific antibodies had had on the development of this subject. It had been assumed that every ferment action had its own special ferment, and the idea was not grasped that ferments could accomplish various different actions, and in both directions.

At the close of the lecture, Dr. Flexner moved the thanks of the Harvey Society to Dr. Taylor for his résumé of physical chemistry as applied to biological problems. The next and last lecture of this series will be delivered on May 9, by Professor E. A. Schäfer, of the University of Edinburgh, who will speak on "Artificial Respiration in Man."

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

UNITED KINGDOM HOSPITALS' CONFERENCE—FRACTURES OF LONG BONES—ENTOZOA—FILARIA—OBITUARY.

LONDON, April 3, 1908.

YESTERDAY the third United Kingdom Hospitals' Conference concluded its deliberations. It was opened on Wednesday and has been attended by representatives of many hospitals, both of the medical staffs and subscribers. On the first day the abuse of hospitals and payments by patients were the chief questions discussed. Mr. Gosnell, of the City Lying-In Hospital, holding that hospitals did not exist solely for the working classes, said that men who bore no obvious signs of poverty were often deserving of the benefits of charity because their obligations exceeded their means. He proposed a resolution to the effect that such persons should be deemed eligible if, owing to that disproportion between means and obligations, they could not pay for medical assistance. Mr. Dodson, of the Brighton Women's Hospital, seconded the resolution, but, after discussion, it was lost. Mr. Johnson (Leicester Infirmary) thereupon moved that "it is desirable to supply gratuitous hospital relief to those who are provided for by the Workmen's Compensation Act." He said the compensation could not exceed £1 per week, and he thought it would not be right to make them pay. Dr. Fowler of Bournemouth proposed to add to this resolution, "whom the Hospital Board shall consider unable to pay," and with this addition the motion was adopted.

As to payment by patients, the Hon. Sydney Holland (London Hospital) moved that when they can do so, patients "ought to be asked to pay for the food, medicines and bandages supplied." He said it was economically unsound to give everything to everybody. Last year, without any pressure, 157,000 persons contributed £2,000 to the coffers of the London Hospital. Charitable work should be restricted to those too poor to provide for themselves. Many breadwinners, such as policemen, postmen and clerks, received their usual wages during illness, but gave nothing to hospitals. When the workman understood the matter he would be willing to contribute. Mr. W. Carnt (Manchester Infirmary) said in his institution the inmates paid from 2 shillings and 6 pence to 7 shillings and 6 pence a week, and so added £1,100 to £1,200 a year to the funds. The Rev. W. Blissard thought the proposal would tend to increase the range of applicants and so injure the medical profession, and Mr. Capes said the result would be a great increase of cheap dispensaries around the hospitals. The proposal was pronounced wrong in principle by others, including Dr. Davey, president B. M. A., who preferred the German system, and Dr. Beverley, who thought Mr. Holland was trying to begin at the wrong end. Dr. Heron held that the proper people for hospital treatment were the necessitous poor. He knew of persons, mostly clerks, earning from £250 to £800 a year who went to hospitals. Mr. Holland, in reply, said the necessitous poor were provided for in the poor law infirmaries, and it was struggling men on a small income who most needed charity in illness. On a show of hands the motion was carried.

Lieutenant-Colonel Montefiore proposed a resolution in favor of appointing trained almoners, on which Sir B. Fuller (Royal Hants Infirmary) remarked that such a step would be of little use until they had settled what classes should benefit from hospital treatment. Mr.

Jewson (Norwich Hospital) said the employment of almoners had greatly mitigated the abuse of the out-patient department there. This motion was carried, and Mr. Harben (treasurer of St. Mary's Hospital) proposed that abuse of out-patient departments can be most effectually prevented by cooperation with provident dispensaries and local practitioners. He quoted statistics showing that in London the abuse had increased out of all proportion to the increase of pauperism. Close cooperation with provident dispensaries for preferential treatment of patients recommended by them was urgently needed. The resolution was carried, and the conference adjourned.

On resuming work yesterday a resolution was carried in favor of taking definite steps to ascertain the ability of every patient of a cottage hospital to pay for his maintenance.

The committee was then instructed to consider how the uniform system of accounts recommended by the King's Fund could be applied in provincial hospitals and to make recommendations to the next conference. the organization of the county guilds for the support of hospitals was the next subject. On this most interesting information was given by Mr. Kinsey and Lord Ampthill of the Bedford County Hospital Guild. Not that this work is altogether novel, but it is a plan of coordinating existing efforts so as to prevent overlapping and to secure an equal distribution over the whole area of all philanthropic work, a concentration of control and decentralization of management, giving smaller organizations the additional strength of their united efforts.

The Bedford guild was formed to secure in every town and village in the country a representative of the hospital, who would be constantly urging its claims on his or her neighbors and gather in a large number of small subscriptions, and these representatives, having local knowledge, would take care that abuses did not occur.

Dr. Fox, of the Plymouth Eye Infirmary, then suggested that the King's attention might be called to the provincial hospitals, and his sanction sought for establishing a King's Fund on their behalf.

The next question was the notification of tuberculosis. This the Rev. W. Blissard (Canterbury Hospital) strongly urged, with a view to the isolation of such patients in publicly provided hospitals. He recognized that the expense of such provision would be enormous.

Dr. Henry Davy, president of the B. M. A., moved an amendment in favor of asking the government to appoint a royal commission to recommend the best way of dealing with tuberculosis. He thought there might be a difficulty in getting a commission, considering Dr. Bulstrode's recent report (of which I gave you some account). But notification alone, he said, would be of no use, and there was needed some uniform system of treatment to be adopted by all the sanitary authorities of the kingdom. A body of influential men, medical and lay, could best consider the question, and they could only be brought together by a royal commission. This amendment was seconded by Dr. G. A. Heron (City Hospital for Chest Diseases), accepted by Dr. Blissard and unanimously carried.

A paper was read by Dr. Ford Anderson in favor of medical men nominating representatives to committees of hospitals in their localities, and he suggested that the British Medical Association should organize such nominations, a project which excited no little opposition and was lost by a great majority.

Dr. Griffith (Leeds) submitted a motion to provide temporary accommodation in hospitals for certain cases which could not be certified as lunatics, but over which it was most desirable to keep control for a time for the purpose of observation. This was carried and the conference came to an end with the appointment of a new committee and the usual votes of thanks.

Radiography in relation to the diagnosis of fractures and other injuries has taken a large place in the estimation of the public in consequence of proceedings in the law courts. In the profession, too, the assistance of the *x*-rays has been fully appreciated. So much so, in fact, that many seem inclined to underrate the value of other methods. Yet it must be admitted that an accurate radiogram is by no means easy to secure. Moreover, the most careful observer may not always correctly interpret the appearances. A recent discussion at the Medical Society of London gave rise to considerable differences of opinion among our leading surgeons as to the "diagnosis and treatment of fractures of the long bones," and, incidentally, as to the points mentioned above.

It was opened by Mr. A. Pearce Gould, than whom no one is more capable of directing surgical opinion. He said the classical signs of fracture, suddenly produced deformity, localized pain, and tenderness, and oftentimes mobility, with crepitus, were sufficient to lead to the recognition of the majority of fractures, and he added that the introduction of *x*-rays and other means ought not to lessen the thoroughness of the older methods of investigation. Anesthesia he found of great use. The *x*-rays could sometimes demonstrate a fracture when other means had failed, or only given rise to strong suspicion. So it might be possible in some cases to take the position that recognition of the fracture was not of great importance in regard to prognosis, for instance, fractures of the carpal bones, incomplete fissures of the scapula or long bones, and simple fissured fractures of the vault of the skull. Then serious displacement might be concealed by swelling, and other circumstances might obscure the skiagram, such as a very indistinct line of fracture and want of care in taking it might so distort the shadow as to give the appearance of a displacement. The normal epiphysial junctions might easily be mistaken for fractures. As to treatment, he advised anesthetics to assist reduction, immediate whenever possible, and held that splints must never be used to help this last, only to maintain the fragments in the correct position. The chief debatable point was the necessity for exact and perfect adjustment of fragments. Could restoration of function be expected unless replacement was so exact as to cause no interruption in the mechanical adaptation of the bone to its purpose? Experience has shown that even considerable alterations in the shape of a bone might under some circumstances not be very harmful. Examples: Fracture of the clavicle and Colles' fracture. In the weight-bearing bones of the lower limbs serious deformity was attended with functional imperfection. As to operative treatment of simple fractures, he said the operations were not very easy, were rather more risky than most modern surgical operations; in some cases the mechanical difficulties were very great, and the use of screws, wires, staples, and plates—though of undoubted value—was attended with disadvantage, for they added to the local injury and lessened the rapidity of repair. When employed, the procedure should be of the simplest, provided it was efficient. A wire ligature round the fragments would often hold them in place; if so, it should be preferred to anything introduced into the bone. Massage was often useful, and active movements better than passive. In fractures near or even into joints, patient, gentle manipulations and use of the part would do good when violent or rough handling did harm. There was evidence of a power of compensation for deformity, as some patients who were at first lame after a time lost their lameness. It would be of value to discover how far this compensation for deformity could go.

At the meeting of the Society of Tropical Medicine and Hygiene, Mr. A. E. Shipley read a paper on the relation of entozoa to the mucous lining of the alimentary canal, in which he traced the various entozoal infections of the lower animals and man and showed the consequences that might occur from the presence of the parasites. He described the parasites that infest the intestines of grouse, of fowls, and of the horse, and reviewed our knowledge of the entozoa in man. He suggested that possibly appendicitis might be caused by *Trichocephalus trichiurus*. This suggestion received no support; indeed, it was repudiated by all the subsequent speakers. Dr. Daniels cited against it the fact that though the natives of the tropics were much infested by that parasite they very rarely suffered from appendicitis. On this, however, Sir Havelock Charles remarked that he found appendicitis was not uncommon in Lower Bengal. Sir Patrick Manson said statistics fully supported the general belief that there was no definite connection between the parasite and the disease.

A paper was then read by Dr. W. T. Prout on the rôle of filaria in the production of disease. The adult *Filaria loa* was a worm, the habitat of which was the connective tissue, and when it came near the surface in a part where the tissues were thin and lax it became visible. The embryonic form seemed to be a microfilaria, which showed a degree of diurnal periodicity. He thought recorded cases justified him in associating *Filaria loa* with calabar swellings, but he attributed the local phenomena to the irritation of the adult worm forcing its way through the connective tissue near the surface. *Filaria nocturna* was associated with a long list of diseases connected with inflammation and obstruction of some part of the lymphatic system. But he did not think the invariable connection of *Filaria nocturna* with

elephantiasis had been fully proved, for the production of the disease experimentally and recognition of the parasite afterwards had not been shown. He described a case where obstruction in a main trunk set up elephantiasis, but was inclined to hold that most cases were of peripheral origin, due to a lymphangitis caused by the introduction of a specific microorganism, resulting in the gradual narrowing and obstruction of the peripheral lymph vessels. He suggested that during elephantoid fever an attempt should be made to examine the serum, and he anticipated that some skilled observer would demonstrate some specific organism. Discussion of this paper was deferred to another meeting.

Dr. James Bell, C.B., F.R.S., late Principal of the Laboratory of the Inland Revenue Department and Consulting Chemist to the Indian Government, etc., died on Tuesday after a short illness, in his eighty-fourth year. He received the D.Sc. of Dublin, 1886, was President of the Institute of Chemistry, 1888 to 1891, and in 1889 was made a C.B. He made many important researches on food, which are embodied in his work on "The Chemistry of Foods," which is the handbook at the Kensington Museum, and has been translated into German. Many other contributions to chemical science were also made by him. He retired in 1894.

OUR CANADIAN LETTER.

(From Our Own Correspondent.)

THE HOSPITALS OF ONTARIO—ASSOCIATION FOR PREVENTION OF TUBERCULOSIS—TORONTO ACADEMY OF MEDICINE—DOMINION BUREAU OF HEALTH—MEDICAL EVIDENCE IN A CANADIAN COURT—COMING MEETINGS OF MEDICAL ASSOCIATIONS.

TORONTO, March 31, 1908.

THE annual report of the Inspectors of Hospitals for Ontario has just been issued and is full of interesting information. There are sixty-five public hospitals which received aid from the government, to the amount of $145,900. The total expenditure for the support and maintenance of the hospitals of Ontario for the past year was $1,415,140. The number of patients admitted during the year was 45,551. The provincial government grant is paid to hospitals during the first ten years of their existence at the rate of 20 cents per day for each patient. After a hospital has been in existence for ten years the grant is paid only for patients for whose maintenance $4.90 per week or less is contributed. In all cases the limit of hospital residence is 120 days, and if patients remain in the hospital longer than that period the rate is reduced to 7 cents per day. Each hospital in Ontario is regularly visited by the inspector, and all rules and regulations adopted by local boards for the government of these institutions have to be submitted and approved of by the government before they become operative. In this way the whole hospital system of the Province of Ontario is under government control and regulation. After each visit of inspection a report is presented to the government and a copy of the report sent to the hospital visited. This inspection report covers all matters relating to the conduct of the institution and describes the conditions found prevailing. It is now a well-recognized fact that a well-conducted hospital confers incalculable benefit on the community in which it exists. The remarkable progress that has been made in Ontario during recent years in establishing public hospitals has developed an appreciation of the material advantage that such an institution is to the city or town in which it is located. It is only a few years since, to secure proper hospital accommodation, a long railway journey was necessary. Soon every county in Ontario will have its own hospital, properly equipped for the care and treatment of medical and surgical cases. To-day the equipment of many of the smaller hospitals is superior to that found in some of the old-established institutions in the larger cities. The effect in every county where a public hospital has been established is seen not only in affording proper care for the sick, but also in fostering and developing an appreciation of scientific advantages to the medical profession that ultimately are of the greatest benefit to the whole community. The Province of Ontario has evidently come to realize that from the standpoint of value to the country, hospitals rank first in the list of deserving philanthropies. The system of government inspection has certainly not only raised the standard of the hospitals, but has stimulated a great public interest, as shown in largely increased contributions and bequests.

The Canadian Association for the Prevention of Consumption and Other Forms of Tuberculosis met in annual session at Ottawa last week. Representatives were present from every province, from the Atlantic to the Pacific. The reports presented indicated that in every province an organized effort is being made to educate the public in regard to the nature of the disease and the means that may readily be adopted to prevent its spread. For example, it was reported that in the city of Montreal the Health Committee has taken over the duty of disinfecting the houses in which tuberculosis patients have died. The inspector of the local society in Montreal has, during the past two months, made 814 visits, and distributed 5,000 paper cuspidors and 7,000 pamphlets. Two hundred and thirty new cases were reported during the past quarter to the Montreal society. Provision is made for distributing milk, eggs, and other food and also to carry out an organized system of district nursing. From the Province of Ontario the reports presented indicated that a system of notification is about to be enforced by law, so that the provincial Board of Health will be notified by the local boards of every case of tuberculosis. Plans are now being carried out to furnish every householder with plain, easily understood directions for preventing the spread of the disease. In addition, the government of Ontario has provided an elaborate exhibit, which will be taken to every city and large town in the province, and old and young be given demonstrations that cannot fail to prove of the greatest benefit, and all for the purpose of teaching people how to live in order to eradicate tuberculosis. All the provinces of Canada are taking a lively interest in the question, and a large Canadian delegation will, no doubt, be sent to the International Congress on Tuberculosis at Washington in September.

The Academy of Medicine at Toronto is now well organized, and already a good deal has been done to justify its existence and prove its success. There are four sections, meeting regularly, the last one to be formed being one in State Medicines. The constitution and bylaws providing for the formation of the new section having been complied with, a meeting for organization was held and officers elected. There is an excellent field for such a section. The water problem in Toronto, the milk supply, the smoke nuisance, the vaccination question, the cleaning and ventilation of railway carriages, and the medical inspection of schools are likely to be carefully and profitably discussed by this new and live section of the academy.

A deputation of medical men, many of whom are Members of Parliament, waited upon Sir Wilfrid Laurier this week and urged that legislation should be introduced in the House of Commons during the present session to constitute a Dominion Bureau of Health for Canada. The Canadian Medical Association has repeatedly asked for such legislation. While all acknowledge that the provincial Boards of Health are each doing excellent work, it is generally recognized that there is a wider field for usefulness for a central board, without any danger of encroaching on ground already occupied. For example, a Dominion Health Bureau might protect the public against impure and adulterated food by extending its operations to the work of the Inland Revenue Department. The value of the educational work that might be done through a Dominion Bureau publishing information for the people in regard to prevention can scarcely be estimated. The deputation which waited on the Premier this week pointed out to him that 8,000 people die in Canada each year from tuberculosis. These died at an average age of 22 years. The value of each life to the community would be $8,800, and for 8,000 lives the sum would be $70,400,000. To this large amount must be added the value of the vast number of lives which are every year lost by deaths from diseases of a preventable character. The indications seem at present very favorable for the establishment of a Dominion Bureau of Health at an early date.

An instance of the manner in which Canadian justice is dispensed is commented on by the press this week. A man charged with the murder of his wife under the most revolting circumstances, was arraigned for trial at London Assizes, before his Lordship, Mr. Justice Riddell. When called upon to plead, counsel for the prisoner insisted that, on account of insanity, the prisoner was incapable of pleading. Three experts in insanity had previously made careful examinations on behalf of the Crown. These witnesses were called and testified that the prisoner was a dement, and on that account could not appreciate the position he was in when called upon to plead. In less than forty minutes from the commencement of the trial the verdict was returned by the jury that the prisoner was insane and, therefore,

incapable of conducting a defense or instructing his counsel. A defense of insanity is not very frequently resorted to in Canadian courts, but when the Crown has to meet such a defense, every facility is provided for a thorough and careful examination to be made. Everything is done to prevent a parade of conflicting medical testimony in open court, and medical men generally discourage the ventilation of different opinions in a court of law. The present method of having consultations before the trial and insisting on a conclusion being reached is fair, just, and seemly.

The meetings of the Ontario Medical Association at Hamilton, May 26-28, and the Canadian Medical Association at Ottawa, June 23-26, promise to be largely attended. For the provincial meeting at Hamilton an unusual effort is being made, and the attendance is likely to be one of the largest in the history of the association. The meetings are generally held at Toronto, but for this year a change was made in order that the medical men of Hamilton might have an opportunity of bestowing the hospitalities which have always made the Toronto meetings so pleasingly attractive. The meeting places of the Canadian Medical Association are changed each year. This year at the capital there will, no doubt, be a large attendance, and an interesting program is being prepared. Canada is also to be favored this year with the American Hospital Association, which is to meet at Toronto during the last week in September.

LODGE PRACTICE.

To the Editor of the Medical Record:

Sir: The paper by Dr. J. Weiss on the society and lodge practice in the east side of New York City, has brought back to my mind some reminiscences of attempts on my part to derive my livelihood by practising my profession in that district. Although my experiences in this direction date back only a few years, still I have nearly forgotten all about them. It is a well-known fact in psychology that pain is more easily forgotten than pleasure. I am under the impression that Dr. Weiss has not said everything that can and should be said about the contract practice in vogue in that part of the city, and I believe that a few additions to his paper may prove interesting to many of your readers to whom the east side of New York is an unknown region.

Superficial observation would lead one to believe that the lodge practice cannot be remunerative to the physician. No actuary would approve of such a contract as is generally made between the physician and the lodge. It practically provides that, in consideration of the services rendered to the members of the society by the physician, the treasurer of the lodge will pay to the latter one dollar per annum for each unmarried member, and three dollars—often only two dollars—per annum for each married member who consents to place his name on the doctor's list. Inasmuch as the enrollment on the doctor's list is not obligatory for every member, it usually turns out that very few of the single members, or childless couples, enroll. Most of those the doctor finds on his list have several children who rather too often need medical attendance. It thus appears that the doctor is always at a disadvantage from a financial standpoint.

Curious as it may appear at first sight, still it is a fact that many physicians whose chief support is derived from lodge practice have incomes which compare favorably with the income of a successful practitioner in a well-to-do neighborhood. Moreover, I know several lodge doctors who make annually about six times as much as the average privat docent in Germany or Austria, and yet do not work much harder than he. How is that done? Very simple. Twenty societies averaging fifty members on the doctor's list gives an assured income of about $2,500 annually; three hundred confinement cases annually, averaging twelve dollars each, $3,600; then injections of antitoxin, which, while not overdone, still very often employed in that neighborhood, will bring to such a physician another $500; while curettements of the uterus, which are very much in vogue among the women in that neighborhood (a woman who has not been "scraped," as they call it, is as rare down there as one without a gold-filled tooth), will bring another $500; then legitimate treatment of miscarriages, which are by no means as rare as among those who are better initiated in the mysteries of "race suicide," bring another $500. To all this must be added incomes from minor surgical cases, and from the treatment of venereal (called there "immoral") diseases, and also from consultations with "professors," which have to be paid for extra, and also "private" patients, which are often recommended by the grateful lodge patients, bring no mean sum. It is no surprise, then, that there are several lodge doctors each of whom has an income of over $10,000 annually.

The vast majority of lodge doctors are not so fortunate, and are struggling very hard to pay the high, almost extortionate rents which are exacted for "parlor floors" in that neighborhood. The essentials which assure success to the lodge doctor are about the same as those of the general practitioner in fashionable neighborhoods, plus an enormous amount of altruism, self-negation, and extraordinary confidence in your fellow man. A lodge doctor, when a patient asks him this question, "Doctor, am I really dangerously ill, so that I must consult a real doctor?" must not feel offended. On the contrary, he must in trivial cases suggest a consultation with a "professor" and receive a two-dollar fee for meeting the famous professor at the bedside. I doubt whether this alone is responsible for the large number of calls consultants have in the east side. I believe that the extraordinary anxiety of the people is also responsible for it, to a large extent. The lodge doctor, knowing the weakness of human nature, must suggest antitoxin as a prophylactic in most cases presenting some suspicious signs of diphtheria, not because this is paid for extra, but because, if it turns out a bad case, he is not blamed. "I have done my best," he can say. But I have known many successful lodge doctors in the east side who injected antitoxin, curetted women, called consultations, etc., only when reasonably indicated. It all depends on the personal equation, just as with practitioners in any other district. But when his self-negation is so intense that he can tell a mother whose sick child is asleep when he calls, that it is a pity to wake the poor child, and that he will return within a few hours, he is assured of an enormous success. But, on the other hand, many are not so altruistic. It is said about some who are very busy and cannot spare the time, and the limbs, to climb up five or six flights of stairs, that they, like the letter carrier, call from the bottom of the stairs for their patient, and when he or she appears at the top floor, the doctor asks to be shown the tongue, and promptly writes a prescription, leaving it for the patient to come down, pick it up, and follow directions.

Of course, with such a complex problem as the lodge practice presents, the profession cannot deal offhand. The remedies suggested by Dr. Weiss are hardly tenable. It is doubtful whether the successful lodge doctors will agree to share their practice with their less successful colleagues. It appears to me that education of both the laity and the lodge doctors as regards the evil of this kind of contract practice may bring better results. It must be borne in mind that the future of the lodge doctor is by no means bright. It is true that for several years, as long as youthful vigor is one of his attributes, he makes money. It is also true that, having a minimum standard of life, he also saves money. But, unless he invests his savings in some remunerative ventures, he can never work long enough to accumulate sufficient funds to keep him from starvation in his old age. Once a lodge doctor, always a lodge doctor. Patients who are used to getting his services for from one to three dollars a year will, as a rule, not consent to pay him a fee for each visit. As a matter of fact, as soon as a practitioner of this kind gives up his contract practice he is practically left without a clientele. On the other hand, there are many successful practitioners in the east side who never had lodges and societies, and they get good fees for their services. The lodge doctor never reaps the benefits which are the concomitant of age and experience of the medical man. If this is brought home to the younger members of the profession, I have no doubt that they will refrain from making contracts with lodges. If, in addition, the same young men will make it their business to explain to the members of the lodges that they are by no means the gainers in the transaction, the number of people who enroll on the doctor's lists will decline. It must be shown to the "brethren" of the lodges that a large proportion of members have no confidence in their lodge doctor, and one of the results is that consultations have to be called rather too often, and the "professor" paid a fee of ten to twenty-five dollars. An ordinary case of acute disease costs thus from ten to twenty-five dollars; not less, often more, than it should cost if they had the liberty to choose a physi-

cian in whom they have full confidence, and not the one in whom the "politicians" of the organization have, for a consideration, confidence. Inasmuch as the majority of the physicians in the east side are members of lodges and benefit societies, they have ample opportunities to carry on such an agitation, which will undoubtedly bring salutary results to both the patients and physicians. The project suggested by Dr. Weiss, cannot and will not bring any relief. It is rather full of paternalism and the trade union spirit. Medical men need no keeper; they can take care of themselves. It is, however, their sacred duty to educate the laity in regard to all medical matters. A campaign of education such as I have just suggested will at least ameliorate, if not completely cure the lodge evil.

MAURICE FISCHBERG, M.D.

23 EAST EIGHTY-EIGHTH STREET.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 9, 1908.

Infantile Pyloric Stenosis.—J. L. Morse and F. T. Murphy present a detailed report of a case of this condition occurring in a male child first seen at the seventh week after birth. A successful gastroenterostomy was done and the child lived to be eight months old. During this time his weight increased from six pounds ten ounces up to nineteen pounds. He took only breast-milk and did not vomit. In fact, he developed in every way as a healthy baby should. After a rather indefinite illness of nine days he died from what the autopsy showed to be idiopathic peritonitis. Details are given of the operation and postoperative treatment; also full autopsy records. The microscopical findings in the pylorus were surprising because of the absence of degenerative changes in the smooth muscle, either in the form of atrophy or in connective tissue overgrowth. The closed state of the pylorus was proved by the mechanical tests applied and by the rigidity and thickness of the walls, which are in striking contrast to the usual post-mortem condition of the pylorus in infants. The authors regard the case as of especial interest because it shows that in some instances at least the stenosis is not due to spasm, that medical treatment cannot be of any avail, and that the only hope for relief and life lies in surgical intervention. It also proves that an infant can live and thrive for many months, although all the food passes through the gastroenterostomy opening and none through the pylorus. It suggests that the condition of organic infantile pyloric stenosis is a permanent one, that there is no tendency toward a restoration of normal conditions, and that there is little hope of the pylorus ever resuming its functions. It is not safe to draw conclusions from these suggestions, however, as it is possible that with the lapse of time and the growth of the parts, changes may occur which will result in the restoration of normal conditions and function. These points can be decided only by the actual observation of the anatomical conditions in patients dying at longer intervals after successful operations.

Congenital Stenosis of the Pylorus.—C. W. Townsend reports one case, that of a male child seen some sixteen days after birth with symptoms suggesting pyloric obstruction. The child's apparently good condition made it seem probable that some food was digested, and passed through the intestinal canal, but careful observation showed that as much was vomited as was received, and at no time was there any evidence of food material in the stools. Results of abdominal examination were negative, and operation was postponed till the twentieth day of life. A gastroenterostomy was then done, the pylorus having been found firm and enlarged, and the entire bowel collapsed. The child bore the operation well and rallied somewhat, but the vomiting continued, and it died on the third day. Autopsy confirmed the diagnosis.

New York Medical Journal, April 11, 1908.

Cammidge Reaction in Pancreatic Diabetes.—Report of a case is given by G. A. Friedman, who has found four previous cases recorded in literature. In his own case the author was able to make a diagnosis of carcinoma of the head of the pancreas, and this was verified by the results of autopsy six weeks later. He has obtained the reaction in some other instances likely to be also affections of the pancreas, but proof could not be obtained either by autopsy or operation. A bibliography is given of the literature of the last four years.

Poisoning with Tansy.—E. J. Stout's patient was a married woman of twenty years who had taken two drams of oil of tansy to bring on menstruation, although there were no evidences of pregnancy. Half an hour after taking the drug she fell to the floor, and was found with pulse of 160, respiration 40, dilated pupils, clammy skin, more or less muscular rigidity, semistuporous, and unable to answer questions intelligently. Apomorphine was given by needle, and the tansy odor was detected in the vomitus. Under liberal stimulation and in the course of an hour the woman rallied, and was soon out of danger. For several days, however, she had stiffness and soreness in the muscles of the jaws and legs. The author refers to several similar cases on record. The powers of tansy as an abortifacient seem to be somewhat overrated. In some instances it proved fatal, but autopsy revealed the ovum undisturbed in the uterus.

Comparative Therapeutical Value of the Compounds of Iron.—R. E. Van Gieson's views are expressed in the following propositions: A careful study of iron metabolism shows that the official preparations of iron so long useful in the past will increase hemoglobin. The ferrous carbonate; the soluble oxide with sugar; the double salts with the vegetable acids; the solution of the perchloride given in combination and largely diluted with milk, are the forms most likely to produce good results. Directly conflicting views as to the value of the modern proprietary preparations exist among competent observers. In all iron medication the question of defective metabolism is important. Cases must be individualized and preparatory treatment is essential. Rest in bed, massage, milk diet, unfermented grape juice, and static electricity are valuable adjuvants preparatory to or during the administration of the iron compounds.

Surgical Treatment of Appendicitis.—J. E. Cannaday details his technical procedure in these cases which he divides into chronic, acute, and pus cases. In the first and second class of cases he believes in the unqualified removal of the appendix, first, last, and always. In the third class of cases he simply incises and drains, removing the appendix, provided the condition of the patient warrants the interference, and provided that the appendix can be secured without breaking down the wall of adhesions that has been formed between the abscess cavity and the general peritoneal cavity. On general principles he does not drain unless drainage is absolutely necessary. He believes that at times it is better to drain through a stab wound so that the operation wound may be closed in the usual manner by layer sutures. Finally, he declares that all patients with appendicitis should be operated upon irrespective of the stage of the trouble. When the case is one of general peritonitis or extensive local peritonitis a small incision should be made and a cigarette drain inserted, no more, no less. Irrigation, sponging, and mopping out, breaking up adhesions, etc., in such a case, would be murderous. Postural drainage is undoubtedly of some value in these cases. He greatly favors having the patient lie on the side in which the drain has been placed for a few hours at least immediately after the insertion of the drain. The administration of normal saline enemata to the patient who is weak or exhausted gives valuable support.

Journal of the American Medical Association, April 11, 1908.

Ocular Rotation in Paresis.—Using the term "paresis" as applied only to the ocular musculature, and distinguishing it from heterophoria, by which term he understands a functional disability due to anatomical rather than pathological conditions, F. Valk discusses the anatomical conditions of rotation and the diagnosis of paresis, and summarizes his article substantially as follows: All tests for paresis must be made with the look in complete infinity and with complete acuity of vision. We must have a standard of version for comparison of any deficiency of rotation. The straight muscles are capable of moving the eyes in any part of the field of vision and from one part to another; the obliques take no part in the rotation of the eyes in the field of vision; in other words they do not elevate or depress the visual line. A distinct line must be drawn between paresis and heterophoria, as shown by the diplopia; in the first by the diplopia with the look in infinity, and in the second by the possible diplopia with reduced vision. In the consideration and diagnosis of paresis we may exclude the condition of crossed or homonymous images and also the tipping except in a pathological condition of the obliques. The individual muscles of the eye are not endowed with two distinct functions, as they have but one nerve supply, except possibly in the action of convergence and inward rotation due to two distinct nerve centers. The points of action of the straight muscles of the eye are the insertions and sheaths of the tendons as they are placed in the orbit just behind the globe.

Interstitial Keratitis.—H. H. Martin, from answers

to letters of inquiry sent by him to thirty representative ophthalmologists in different parts of the country, finds that local measures are not considered as of great value in the treatment of interstitial keratitis, and also that the great majority of his correspondents coincided with him in the opinion that iodides given internally are useless, if not positively harmful, during the inflammatory stage. A majority indicated a preference for the inunction method in the administration of mercury. The answers to the question as to the average duration of the inflammatory stage could be divided into two classes, those who assume that interstitial keratitis is always due to congenital syphilis and treat it accordingly, and those who recognize other possible causes and therefore do not rely on specific treatment alone. It is significant, Martin remarks, that the former, as a rule, gave the average duration of the inflammatory stage in weeks, while the latter gave it in months. He thinks that the majority will agree with him that the treatment resolves itself into the treatment of congenital syphilis, with appropriate measures for relief of the most prominent local symptoms, the combating of complications arising from involvement of the uveal tract and for the more rapid and complete clearing up of corneal opacities. The most obstinate cases, he is convinced, will yield to the scientific use of mercury, together with the most careful attention to diet and hygiene. What is required, Martin holds, is the maintenance of a condition of mercurial saturation, and this can best be obtained by the use of inunctions of blue ointment which do not derange the digestion and are not painful like the hypodermic administration of the drug. He gives the inunctions on alternate days, beginning with ten grains and gradually increasing the dose up to thirty grains for children and sixty grains for adults, always endeavoring to keep the patient on the verge of ptyalism, till the progressive stage has been permanently arrested; then an intermission of ten or fifteen days is ordered. When the mercury is resumed it is with half the former initial dose and is carried up to half the former maximum. If by this time there are no signs of renewal of the inflammation, the iodide of iron is given in liberal doses, together with the continued administration of mercury. While the patient should be in a hospital, he should be allowed full outdoor liberty, with suitable protection from light. The diet should be principally milk and eggs. The tincture of chloride of iron is often useful during the active treatment. The usual methods in corneal inflammations are available for the relief of local conditions. If atropine is used it should be in stronger solution than usual, as the iris is resistant. After recovery the patient should be kept under observation for six months and should take moderate doses of mercury by the mouth, with intermissions, and liberal doses of iodide of iron, together with good nourishing diet and full outdoor liberties.

Nitrogenous Metabolism in Epilepsy.—A. J. Rosanoff, reports experiments undertaken to determine whether or not in epilepsy the excretion of ammonium salts in the urine varies in any way from that in health, and if so, whether or not the variations bear any relation to the seizures. The object was not to estimate the total amount of ammonia excreted in twenty-four hours, but to determine how the rate of excretion varies immediately before and after seizures. Seven cases of idiopathic epilepsy were selected for the investigation; samples of urine were taken at two-hour intervals and put away separately in a refrigerator, with a few crystals of thymol to prevent putrefaction. When a seizure occurred, all were thrown out, with the exception of the last one or two which were analyzed. The urine passed immediately after the attack was also thrown out, as it was largely that secreted before the seizure, but that obtained from one-half to two hours after was saved and analyzed. The total nitrogen was estimated by Kjeldahl's method. Folin's method was used for the estimation of ammonia, only modified by allowing the air current to pass through the urine for six hours instead of an hour and a half. The results obtained show that the ratio of ammonia to the total nitrogen varies much more in epileptics than in normal individuals, and that the variations bears a constant relation to the seizures. Immediately before a seizure this ratio corresponds to the normal, while immediately after an attack or series of attacks, this ratio invariably rises, often far above the normal standard. He found no exception to this in the cases studied. Folin found that in normal individuals the greatest was 1.3 per cent., while the average was less than 1 per cent. In Rosanoff's cases the variation ranged from 1.1 per cent. (only two specimens examined) to 4.7 per cent. He does not venture to offer conclusions other than that it can now be considered firmly established that nitrogenous metabolism as it occurs in epileptics presents definite and striking variations from the normal, and that these variations occur in constant connection with the seizures.

Intussusception.—W. L. Wallace is sure that, if autopsies could be obtained, intussusception would be found to be a frequent cause of death in infants and young children who die, after a few days' illness, with acute intestinal disturbances. He reports a case in which the typical symptom of pain was not prominent, but bloody vomiting was present with the other symptoms of obstruction. Invagination, he says, is of frequent occurrence and is easily produced by slight irritation of the normal intestine, the bowel above rolling into the segment below and emptying itself as in a movement of the bowels. Treves goes so far as to hold that many attacks of indigestion may be due to a temporary invagination of the bowel, in which the circular fibers below rapidly contract and reduce the intussusception before adhesions have formed. Whatever would prevent such reduction would produce a true pathological intussusception. Wallace discusses the theories of the causation of intussusception, rejecting that of local spasm and contraction and holding rather to the view that intussusception is the result of damage to the bowel by some interference with its blood supply causing bulging and threatening perforation, and that the intussusception is nature's effort to reinforce the weak spot by splinting it between healthy layers from above and below. If the invagination relieves conditions so that the blood supply can be restored, the intussusception may be reduced spontaneously, but if the damage is too great, adhesions form and reduction is impossible. Then nature will attempt to unite the neck of the intussusception to the healthy bowel below so that there will be no leak when it sloughs away. The case reported supports this explanation: the strangulation of the blood-vessels was all out of proportion to the condition of the bowel and was evidently the cause and not the result of the intussusception. The intestine opposite the strangulated mesentery was bulged, and the gut above was working down into it. The case supports the theory that intussusception is caused by paralysis of a portion of the bowel by interference with its nerve or blood supply. The article is illustrated.

Passive Pulmonary Hyperemia and Tuberculosis.—W. Tileston gives the result of a study as to the protection afforded against pulmonary tuberculosis by cardiac disease producing passive hyperemia of the lungs. His material is based on 1,900 autopsies at the Massachusetts General Hospital, 1,811 at the Boston City Hospital, and 529 at the Long Island Hospital, Boston. Mitral stenosis seemed the best form of heart lesion to study, because it is easily recognized, usually very chronic in its course, and accompanied with marked hyperemia. Only pronounced cases of this type were selected; all children under the age of twelve were also excluded. The figures obtained indicated to him very clearly that mitral stenosis affords a marked relative immunity against pulmonary tuberculosis, which is in proportion to the grade of the lesion, and that if infection does take place it usually runs a mild course, with a strong tendency toward cure. He discusses the various possibilities and theories accounting for this immunity, and says that a process of exclusion leads us to the belief that the active agent in this immunity must be passive congestion of the lungs. Bier has shown that such passive congestion has a marked action to check inflammations due to the tubercle bacillus as well as the ordinary pyogenic bacteria, which is apparently largely due to certain substances in the blood serum, the so-called alexins and antibodies, partly, no doubt, to the leucocytosis induced in the congested tissues. In the lungs the increase of connective and elastic fibers may play a part. The question is of practical importance, both as to prognosis and treatment, especially the latter. Tileston notices in this connection the attempts that have been made to produce artificial hyperemia of the lungs, and particularly the recent experiments of Kuhn with his mask, impeding inspiration and producing lung congestion by aspiration of blood from the right side of the heart into the lungs. Decided benefit has been reported from this method and actual cure claimed for favorable cases. A more extensive trial, however, is needed before a final opinion can be given as to the value of the method.

The Lancet, April 4, 1908.

Delayed Chloroform Poisoning; Its Nature and Prevention.—W. Hunter discusses this question and concludes that in delayed chloroform poisoning cases, the main trouble is a disturbance in fat metabolism in relation to hepatic function. Such a disturbance is seen also in acute yellow atrophy. The author believes that the vomiting occurring after administration of anesthetics is not of nervous origin, but essentially toxemic, due to the profound depression of liver function with consequent

diminution of its antitoxic function during the period of the administration. This depression will be the greater if a liver already weakened by disease or by poor nutrition be further unduly weakened by food having been withheld for many hours before the administration. This enforced abstention from food before administration of an anesthetic may thus in individual cases be carried too far, and it is, in the author's opinion, largely responsible for the fatal effects of delayed chloroform poisoning in exceptional cases. Such effects could in all probability be completely prevented if, instead of withholding food, particular care was taken that the patient had always a very nutritious and easily digestible meal, well-sweetened, two or three hours before the operation.

Bacteriology of Scarlet Fever.—H. Kerb tabulates the results of his observations. In general, they suggest the fact that no particular strain or variety of streptococci is more frequently present in scarlet fever than in other catarrhal and inflammatory conditions of the throat. All that has been definitely proven thus far is that the infecting agent, whatever it is, is present in the pharyngeal mucus. If none of the streptococci in the throat are causative of the primary condition, some other agent must have made it possible for them to obtain entrance to the tissues in order for them to produce the secondary complications. Staphylococci in the air passage are relatively increased in scarlet fever.

The Tuberculo-Opsonic Index of the Urine and Sweat in Health and in Tuberculous Disease.—The paper of J. Miller is largely in tabulative form and cannot be easily abstracted. It may be said that comparisons under the conditions implied in the title, showed that the opsonic index of the urine from a diseased person, unlike that of a healthy person's urine, was usually found to be lower than that of the blood (out of 50 estimations there are only six exceptions); secondly, that it was for the most part lower than the opsonic index of a healthy person; and thirdly, that frequently a rise in the opsonic index of the patient's urine was associated with a fall in the opsonic index of the blood serum and *vice versa*. This feature was present in twenty out of fifty consecutive observations. When the urine was dialyzed and then examined the same phenomenon—viz., rise in opsonic index—was present as had been remarked previously in the case of the healthy person, with this difference that the rise was not nearly so marked nor so constant as in the case of the healthy individual. In regard to examinations of the sweat, it may be sufficient to record that a number of observations on the sweat of persons suffering from acute pulmonary tuberculosis have been made, and that the samples were in every instance found to contain tuberculoopsonic substances, sometimes in surprisingly large amounts. Compared with the opsonic index of the blood serum of a healthy person, the samples of sweat were found to show indices ranging from 0.8 to 1.3. It seems evident from the author's results that the excretions—urine and sweat—contain antibacterial or bacteriotropic substances. Why such important substances should be thrown out in the excretions is a difficult problem, unless it be that being specific and not required in the ordinary functions of the cells of the body, they are therefore eliminated as foreign substances.

British Medical Journal, April 4, 1908.

Toxic Effects of Petrol Fumes.—C. R. Box refers to the cases of two chauffeurs who were shut up in a poorly-ventilated garage while the engine of their car was still running. In the course of half an hour they felt some vertigo and constriction of the head as they stated later, and three-quarters of an hour later they were found unconscious. They were immediately taken outdoors and cold effusions given. Both men were then in a completely dazed condition, with medium-sized, active pupils. They were unable to stand. One was pale, shivering, and drumming his feet on the floor. He did not appreciate what was said to him, resented interference, and struck out when addressed. The other was deeply flushed and slightly cyanosed. He was more sensible, but when moved he struck out at the door, injuring his knuckles. The pulse in each case was small and rather fast. There had been no vomiting, and the fact that one was found in the lavatory was due to his having taken a pill previously. They were again carried upstairs and laid on settles near the fire. The windows were widely opened. Although warmly wrapped up, they continued to shiver acutely for some time. The shivering had the appearance of clonic spasm, and was particularly marked in the case of the pale patient; the feet in his case and the hands in the other were constantly beating against the floor. The flushed and younger of the two recovered rapidly, the pale one more slowly. By the next day they were both all right, but had only an imperfect recollection of what had happened subsequently to their leaving the garage proper and going upstairs. The treatment adopted was free ventilation and the administration of hot strong tea, which was handy. The kindness of a bystander had already supplied a glass of spirits.

A Specific Treatment of Leprosy.—Professor Deycke, late of Constantinople, recounts his experience in the isolation from leprosy cases of a certain streptothrix. The relations between it and the genuine lepra bacillus are conjectural. From the streptothrix cultures a neutral fat called by the author "nastin" was isolated, and injections of this substance into leprous tissue caused more or less intense inflammatory swelling and softening, suppuration and necrosis of the tissue to which its action was strictly limited, adjacent areas of sound tissue not becoming affected. This reaction always occurred with pronounced participation of leucocytes. The next problem was to find some substance which would produce such an effect on the leucocytes that the nastin would give its characteristic reaction. Such a compound was found in benzoylchloride. Benzoyl itself seems to be the really active substance which acts directly on the lepra exciter. It requires, however, in order to get at the baccilli at all and not to be wasted in other directions, the guidance, so to say, of the otherwise thoroughly passive nastin, which charges itself in oily solution with benzoylchloride; it is not, however, a chemical union, but rather a state of simple solution; in this way benzoylchloride is protected from being prematurely and uselessly used up. The nastin is carried to the lepra baeilli, to which, owing to its near chemical and physical relation, it attaches itself, and then benzoyl can fully display its antibacterial action in the fat-removing sense. When deprived of fat the lepra bacilli seem to be doomed; the human organism then effects with comparative ease the further dissolution and ultimately the complete destruction of the bacteria nuclei. The conclusions drawn from the author's experience hitherto are summed up in the short sentence: Benzoylnastin is an agent which directly acts on lepra bacilli. This sentence expresses the advantages and the progress affected by his method of treatment of leprosy as compared with other therapeutic endeavors.

Electrolysis in Tic Douloureaux and in Spinal Sclerosis.—Dawson Turner calls attention to the value of electrolysis in the maladies named, and summarizes the clinical histories of seven cases. In all the results were eminently satisfactory. The author says that in treating cases of the first-named malady by this method when strong currents may be pasing through the brain, it is very important to avoid all abrupt changes in the current strength, or giddiness, faintness, or other serious symptoms may follow. Burns will also be produced if the current density be allowed to become too great. Beneath each electrode several layers of unmedicated lint soaked in the solution it is desired to use should be placed. In all these cases the treatment was the same; the salicylic ion (or the quinine ion) was introduced into the cellular tissue beneath the skin by a strong constant current. Turner adds that in the hitherto irremediable and hopeless cases of spinal sclerosis something can now be attempted, not to directly regenerate destroyed nerve tissue, though indirectly some such effect may possibly be produced, but to loosen and remove the fibrous tissue which may be pressing upon and interfering with the function of the nerve strands and cells.

Writer's Cramp.—N. Vaschide says that the act of writing demands motor corordination and a special mobility of the hand. In fixing the hand to hold the pen there is a tonic condition, while in writing the act is clonic. The interossei, the long extensors, and the long flexors are all involved in the act. The condition called writer's cramp varies much in severity and in form. In some cases there is a veritable spasm of the muscles, in others only a sense of fatigue. We know practically nothing of the pathology of this affection and little of its etiology, and hence the treatment is eminently unsatisfactory. There is rarely true paralysis, but rather functional impotence and paresis of the muscles. The contractures are produced as soon as one attempts to write and disappear under other circumstances. There may be trembling of the muscles. The prognosis is bad, since all means used fail to cure. The only treatment of real value is one that substitutes the use of other muscles for those that are disabled by using the pen in a different way or using some device that varies the muscles acutely.—*Gazette des Hôpitaux.*

Book Reviews.

THE LIFE OF NATHAN SMITH DAVIS, A.M., M.D., LL.D. 1817-1904. By I. N. DANFORTH, A.M., M.D. Illustrated. Chicago: Cleveland Press, 1907.

THE life of Nathan Smith Davis, physician, teacher, leader of medical men, and pioneer in medical education and organization, makes interesting reading as an integral part of the history of medicine in this country. No better biography could be desired than the present one, in which Dr. Danforth lovingly and reverently traces the life and work of this physician whose name carries so much that is reminiscent of the earlier years of American Medicine.

Dr. Davis was one of the founders of the American Medical Association, which he happily saw flourish from a modest beginning to a great and representative body. As a leader among leaders in medical organization, an active organizer of congresses and conventions, a writer on ethics as applied to the medical profession, and an ardent supporter of temperance and other public causes, the name of Dr. Davis has come to be known throughout the world as that of a representative American physician. In kindliness and uprightness of character, in multiplicity of interests, in energy and perseverance there were few like him. It is truly regrettable that he did not live a few years longer, for possibly if he had, and his wise and temperate counsels had continued to prevail, the past four years in the history of the American Medical Association would have been marked by quite different events than have transpired under the present rule.

CANCER OF THE RECTUM, Its Surgical Treatment, with an Appendix of 380 Cases. By HARRISON CRIPPS, F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital, Member of the Council, Royal College of Surgeons, etc. Fifth Edition. London: J. & A. Churchill, 1907.

IN this, as in previous editions, the author takes up in great detail the anatomy of the rectum, together with the etiology, pathology, symptoms, and differential diagnosis of cancer of this organ. Much of the new material is in the chapter on treatment. Excision by either the perineal or transsacral route, colotomy, and palliative measures are each discussed in detail. The writer condemns end-to-end suture after excision, and favors leaving the proximal end of the gut free. Colotomy should always be done as soon as any evidences of stricture appear, and Cripps thinks it a delusion to suppose that a colotomy necessarily means that the feces are constantly being discharged, for most of his patients seem to have had a fair degree of control over the stool. In the present edition the author adds a table of 380 cases taken from his private practice, in which the duration of symptoms, the height of the disease above the anus, the form of treatment employed, together with the immediate and ultimate results, have all been carefully noted. The book constitutes an excellent treatise on this not uncommon disease.

DISEASES OF THE NOSE AND THROAT. By HERBERT TILLEY, F.R.C.S., Surgeon to the Ear and Throat Department, University College Hospital, etc. With one hundred and twenty-six illustrations. London: H. K. Gowers, 1908.

PRACTICALITY is the keynote of this book, which represents the views of one of London's ablest and most active clinicians. Debatable matters relative to etiology and pathology receive less attention than do symptoms, diagnosis and treatment. References to literature are scanty. Many plans of treatment receive little or no mention because the author frankly says he has an equally limited experience with them, and he advocates in the main what he has found to be satisfactory in his own practice. Plates and type are alike clear, the former unusually so. The author belongs to the conservative school, but has presented a book which gives a practical working guide to diseases of the nose and throat. In the matter of direct statement, Dr. Tilley's style might well be commended to some of his present-day fellow writers.

FIVE HUNDRED SURGICAL SUGGESTIONS. Practical Brevities in Surgical Diagnosis and Treatment. By WALTER M. BRICKNER, B.S., M.D., Chief of Surgical Department, Mt. Sinai Hospital Dispensary, New York; Editor-in-Chief *American Journal of Surgery*, and Eli Moschcowitz, A.B., M.D., Assistant Physician, Mt. Sinai Hospital Dispensary, New York. Second Series. New York: Surgery Publishing Company, 1907.

THE favorable reception accorded to the first edition has tempted the authors to put forth a second containing further "suggestions" sufficient in number to make up the five hundred which give the book its title. Just why valuable suggestions should be limited by this arbitrary number it is difficult to say. It cannot be denied that many valuable hints are thus presented, but just under what circumstances any one would make use of the information contained is not so easy to see. The little book is attractively gotten up and the material satisfactorily arranged for those who can derive benefit from a catechism of surgical "don'ts."

LIGHT AND X-RAY TREATMENT OF SKIN DISEASES. By MALCOLM MORRIS, F.R.C.S. Ed., Dermatologist to King Edward the Seventh's Hospital for Officers, Surgeon to the Skin Department of the Seaman's Hospital, Consulting Surgeon to the Skin Department of St. Mary's Hospital, and S. ERNEST DORE, M.D., Cantab., Assistant in the Skin Department of the Middlesex Hospital. With twelve plates. Chicago: W. T. Keener & Co., 1907.

THIS little volume of 170 pages is valuable because, in the first place, it records the personal experience of the two authors; further, because the authors do not consider their method the only way to treat certain skin diseases, nor are they unduly enthusiastic. Their aim seems to be, not to publish cures so much as to record observed facts and to help the reader to form an accurate estimate of the value of the several methods described. The authors give a careful description of their technique and also a number of cases with the results obtained. In their hands the Finsen light and the *x*-rays have given good results in properly selected cases. But they fairly admit that many cases are not suitable to the treatment herein described, and also that in many other cases so-called cures turn out not to be cures at all. The book is practical and conservative and is characterized throughout by honesty of purpose and sobriety of statement.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. By Dr. JOHANNES SOBOTTA, Professor of Anatomy in the University of Würzburg. Edited, with Additions, by J. PLAYFAIR MCMURRICH, A.M., Ph.D., Professor of Anatomy in the University of Toronto; Formerly Professor of Anatomy in the University of Michigan. Volume III. Vascular System, Lymphatic System, Nervous System, and Sense Organs. With 297 Illustrations, Mostly in Colors. Philadelphia and London: W. B. Saunders Company, 1907.

THIS is the concluding volume of an excellent Atlas of Anatomy, the value and scope of which have been discussed in the reviews of the earlier volumes in these pages. It is difficult to speak of the plates without seeming extravagance, for they are as nearly perfect pictures of the parts as they are shown in a skilfully made dissection as it is possible to make. They are, of course, ideal, for no dissection could show the veins, blood-vessels, lymphatics, and other delicate structures so distinctly as they are here represented, but they recall vividly and make even more clear what one has seen on the dissection table. The work is not a dissection manual, for the plates are too handsome to be smeared with the soiled fingers of the worker in anatomy; neither is the text adapted to the needs of the young student. It is essentially a post-graduate work, one for the surgeon and the physician to keep on his shelves for reference, and even for study, when his practical work on the cadaver is ended.

A TEXT-BOOK OF PHYSIOLOGY. By ISAAC OTT, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Second Revised Edition. Illustrated with 393 Halftone Engravings, Many in Colors. Philadelphia: F. A. Davis Company, 1907.

THIS second edition of Ott's Physiology is a great improvement on the first, issued three or four years ago. It is bettered not only by revision of the original text, but by the addition of much new and important matter, and in its present form compares favorably with any of the older established treatises on the subject. In this edition, the sections on vision and on electrophysiology have been rewritten and enlarged, and nearly every section has been revised and emendated. The size of the book has been considerably increased, and over two hundred illustrations have been added. But even with this increase in size, many of the subjects are treated too briefly. Indeed, physiology has become so extensive a science that the attempt to treat it in a single volume, a large part of which is taken up with unnecessary illustrations, must perforce be unsatisfactory. There is no middle ground between an elementary work, in which bare facts are stated without explanation, and a voluminous treatise. The present work occupies this middle ground as well as it is possible to do so, but, like all of its class, it leaves the student with his desire for complete knowledge of the subject unsatisfied in many directions. This is not intended as a criticism of this particular book, but of similar works in general. Taking into account the limitations imposed by the vastness of the subject and the necessity of covering it in a single volume, it must be admitted that Dr. Ott has accomplished the task as well as any of the others who have attempted the impossible.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held March 5, 1908.

THE VICE-PRESIDENT, DR. ROBERT ABBE, IN THE CHAIR.

THE evening was devoted to a discussion of nutrition in typhoid fever.

Metabolism and Diet in Typhoid Fever.—Drs. WARREN COLEMAN and P. A. SHAFFER presented this paper. It was remarkable how little scientific work had been done to determine the most suitable dietary for typhoid fever patients. One was struck by the paucity of communications on this subject until the very end of the last century. The history of diet in fevers was ordinarily divided into two periods, the period before, and the period since Graves (1835). The attitude of the profession and the laity of the first period toward feeding fever patients crystallized itself into the well-known adage "stuff a cold and starve a fever." Under this doctrine little besides water, and very little of that, was allowed to patients suffering from any form of fever. It was through Graves' teaching that a revolution in the treatment of fevers was started. Graves convinced himself that, from want of food, the ill effects of starvation were added to the ravages of the disease, and he recommended a diet which marked a great advance in the treatment of fevers, though it was inadequate, containing about 300 calories. No further advance was made in the feeding in fevers until about 1870 when milk was substituted for the carbohydrate-water-broth-diet. The largest quantity of milk which the average typhoid patient could take in twenty-four hours, two liters, furnished even potentially only about one-half of the required energy. Actually then the teaching of Graves resulted only in changing the condition of the typhoid patient from complete to partial starvation. It was in the last decade of the nineteenth century that a few clear-sighted practitioners began to question the suitability of the milk diet. The advocates of a varied diet had not secured a large following. The central issue in the discussion was the amount of food necessary rather than its physical state. The approximated food values of the so-called liberal diets were little if any in excess of a strict milk diet. He concluded that fever *per se* was not a contraindication to sufficient food. The relation of relapses to diet must be considered from two distinct points of view. 1. Whether a varied diet during the febrile period increased the tendency to relapses. Relapses were common on a strict milk diet. The advocates of the varied diet claimed that relapses occurred less frequently in their cases. It was possible that in both series of cases relapses had been more common than was necessary. The true cause of a relapse in typhoid fever had not yet been discovered. 2. Whether a sudden change from a milk diet in early convalescence might cause a relapse. Abrupt changes in diet, especially the addition of meats, caused the well known *febris carnis*. It was not impossible that in typhoid fever the sudden alteration in diet might temporarily reduce immunity through metabolic disturbances, sufficient to bring on a relapse. All agreed that the following were required for typhoid fever patients: (1) The quantity of food, whatever latitude was allowed in variety, must be sufficient to meet the demands of the body for energy. None of the diets previously recommended had contained a sufficient number of calories. (2) Foods likely to cause mischief must be prohibited. This would include foods which were not easily digested, foods likely to ferment, and foods which left too large or a harmful residue. In nearly all of the diets previously recommended more attention had been devoted to increasing the variety of foods which might be allowed than to the dynamic value of the diet as a whole. The deficiency of the milk diet was not in its protein content, but in its insufficient dynamic value. Dr. Coleman here referred to some charts which showed the results of some studies made with milk, cream, milk-sugar, and eggs. Chocolate, vanilla, and coffee were used as flavors. Lemon juice was used as a vehicle for some of the milk sugar. In order to obtain the requisite number of calories and yet keep the bulk of the food within bounds, it was necessary to employ some form of sugar and fat. Fat was apt to cause diarrhea if increased beyond a certain point. Milk sugar was preferable to cane sugar since it was less likely to ferment or overflow into the urine. The quantity of milk sugar they gave was large, often reaching 400 to 600 grams a day. The necessity of using such large quantities of milk sugar constituted the chief practical difficulty they encountered, but with the continued help of Miss Cutler they expected that it would not prove insurmountable. (3) The food must be made as appetizing or at least as unobjectionable as possible. In conclusion Dr. Coleman said that the problem they set for themselves last summer was to study the principles of nutrition upon which the proper diet for typhoid fever patients might be constructed. They felt that they had proven that on any of the diets previously proposed the typhoid fever patient received approximately only half the food he required. In future it would be their aim to arrange a series of diets which would furnish all the energy needed and at the same time be sufficiently varied to relieve the unfortunate victims of the disease from the monotony of milk.

The second part of the paper was devoted to the more strictly scientific aspect of the work. The authors first considered the general question, whether or not they should attempt adequately to feed a fever patient. Should they supply to the fever patient, by food, all of the energy required for his life process, or should they compel him to obtain his energy, or a part of it, from the combustion of his own body material? There should be but one opinion on this general proposition, that unless there were definite contraindications in the specific disease, they should strive toward a constant replenishment to the organism of all of the energy used up. Starvation, whether complete or partial, was harmful, even in health; if starvation was harmful in health, why should it be beneficial in disease? They cited experiments to show that the digestive and absorbing capacity of the typhoid patient was, for practical purposes, very little lower than normal. But in spite of these experiments, most clinicians absolutely refused to believe that a subject of typhoid fever could digest as much or as well as a normal person, and the opinion of the clinician on this point was undoubtedly correct. Other experimenters cited by them had proved that the average typhoid fever patient, even though he had no appetite and had diarrhea, was still able to digest and absorb fairly completely, certain carefully chosen and easily digested foods. There seemed to be some basis for the fear that the intake of food in fever might tend toward an increase in body temperature. According to Hoesslin's observations the increase of temperature after a liberal diet in typhoid was at most 0.2° to 0.3° C. There appeared to be no good reason why they should not at least make an effort to supply to the fever patient as much energy as he was using up to carry on his body functions. How much energy, in terms of calories, must be supplied? According to numerous experimenters the starvation requirement for a normal man at rest was between 30 and 35 large calories per kilo body weight; or for a man weighing 70 kilos, about 2,300 calories. But the average typhoid fever patient was not at complete rest. In fevers Krehl stated that there was an increased heat production averaging 20 per cent. Twenty per cent. of the starvation requirement added to the 2,300 calories gave about 2,700 calories. To this, according to Rubner, 10 per cent. of the starvation requirement should be added to make up for the dynamic stimulation of metabolism

caused by food, and this gave between 2,900 and 3,000 calories, as a fairly conservative estimate of the daily caloric needs of the typhoid fever patient weighing 70 kilos. Few, if any, in the medical profession fed their typhoid fever patients enough to meet this minimum requirement of 3,000 calories. One of the most constant accompaniments of fever was the increased breaking down of body protein and body fat, resulting in varying degrees of emaciation. The loss of protein from the body fluids or cells was of serious importance, and should if possible be prevented. They then analyzed the possible causes for this loss of body protein. This loss from a typhoid fever patient, receiving the usual insufficient diets, was possibly the result of at least three factors: (1) The loss due to partial starvation. A normal individual would usually lose body protein if he received only 1,000 or 1,500 calories. (2) The loss due to the increased protein metabolism caused by the fever temperature. (3) A loss which apparently might not be explained by the first two factors, and which was called the toxic deduction. It was obvious that the loss due to starvation could be stopped by sufficient food; and according to the experiments cited from Voit, it should be also possible to stop, by an excess of food, the loss due to the increased temperature. Theoretically it remained to determine whether they could stop or retard the toxic destruction. The diets at present used by the clinician were not sufficient to prevent even the loss due to starvation, to say nothing of the losses due to the other factors just mentioned. For practical purposes it was only necessary to determine how much the loss of body protein by the average typhoid patient, who received a diet containing 1,500 calories, could be lowered by any dietary régime. In formulating a fever diet they should bear in mind that one object was to spare the body protein as far as possible. The three classes of foods did not have the same value in sparing protein. The high protein-sparing effects of carbohydrates was a strong reason for choosing this class of foods as a basis for a fever diet. Carbohydrates would have a much smaller effect in increasing heat production, or in raising the body temperature, than either fat or protein. For this reason Rubner suggested the substitution of carbohydrates as the chief source of energy in the diets of fever patients. A large amount of fat was objectionable because of its tendency toward digestive disturbances and diarrhea. Protein should be kept at the minimum effective amount, because of its high specific dynamic effect upon heat production and because of the large amount of work which it threw upon the kidneys. These were the considerations which had governed their choice for a diet for typhoid fever. Their plan had been to give as much carbohydrates as possible, and to keep the diet as rich in calories as possible. Their investigations were by no means completed, but their results seemed to justify the belief that a great deal could be accomplished in reducing the loss of the body protein by the use of diets containing what appeared to be a great excess of calories. In conclusion the point they wished to emphasize was that a fever patient who received a diet containing between 3,000 and 4,000 calories, chiefly in the form of carbohydrates, would lose much less body protein than if he received only 1,000 to 2,000 calories. On such a diet, with about 70 grams of protein, he might even gain several grams of nitrogen per day. A diet of this sort was necessary in order to maintain the nutrition of the patient at the highest level. It remained to be determined what effect this very high caloric dietetic treatment might have on the course and outcome of the disease. But in the absence of further experience it seemed logical to believe that maintaining the nutrition of the patient might better assist him in his defence against the disease, might hasten convalescence, and might perhaps tend to prevent certain sequelæ.

The Limitations of Liberal Feeding in Typhoid Fever.—Dr. Morris Manges read this paper. He said that the movement to feed typhoid fever patients more liberally had its origin in Russia in 1880. It was not until 1898 when Buschuew presented his startling results that any real notice was taken of the extensive work which had been accomplished in this field by the Russian physician. Buschuew stated that no one who had tried to feed typhoid patients freely would ever regret it and moreover he would never see the severe types which were encountered under deficient feeding. This enthusiast has an experience with 398 cases with only 34 deaths, a mortality of only 8.6 per cent. With such a literature and with such results from liberal feeding it was with considerable surprise that one turned to the last encyclopedic article on typhoid fever, McCrae's contribution to Osler's Modern Medicine. It would appear that this latest work on the treatment of typhoid fever recommended a diet which was very low in caloric value, 36 ounces of milk, 720 calories; 12 egg whites, 180 calories; a total of 900 calories. The adult standard given by Nichols for an average adult typhoid fever patient equaled 2,600 calories. Friedrich Müller of Munich, as a result of his experience in 87 cases, became a most ardent champion of liberal feeding, and he stated that the best method at their disposal was to feed the patient as freely as possible and to thus neutralize the diastrous effects of the autophagia which caused a total loss of 250 gm. of muscle every day. He also agreed that the danger of perforation was not increased by the giving of non-liquid food, provided it was properly prepared. The mortality in his 87 cases from perforation or peritonitis was nil. His mortality was 11 cases (13.7 per cent.), and not one of the deaths, however, was due to the diet. When in addition to all this they could quote the statistics so carefully collected in 1907 from various sources by Nichols of 1,518 cases of typhoid fever treated with the enlarged diet with only 104 deaths, a mortality of 6.9 per cent., might they not say that was a method of feeding which at least deserved mention? Dr. Manges said he did not wish to be misunderstood; it was not necessary to feed all patients liberally. If milk agreed with the patient it should be given freely; if the patient was not hungry and was doing well there was no reason why the orthodox plan should not be followed. If the same energy which was now so urgently desplayed in forcing water was at the same time devoted to forcing some properly prepared food of the kind already so frequently described as constituting the liberal diet, the subsequent course of the disease would be favorably influenced, especially in lessening the danger of late complications. Fuller nourishment would make the task of feeding less burdensome to the patient, for the frequency of the meals could be reduced and some additional rest could thus be afforded to these much disturbed patients. They all knew how Pawlow had insisted on the influence of taste and relish upon digestion, and the value of chewing and salivation upon the same. Both these indications were fulfilled by the liberal diet. Dr. Manges warned against any fixed plan of liberal feeding. No two patients were alike, nor were the successive stages of the disease the same. Individualism was an essential requisite in feeding typhoid fever patients. That all feeding should be reduced or suspended in severe vomiting, bleeding, peritoneal irritation and suspected perforation required no special mention. He directed attention to the advisability of reducing the amount of food when sloughs were abundant in the stools, for then there was the greatest danger from hemorrhage or perforation. In conclusion Dr. Manges quoted a few paragraphs from Flint's "Practice of Medicine," published forty-two years ago. These paragraphs were printed unchanged in every edition of this work. Although Flint recommended milk and fluid diet, yet the underlying principles were the very ones upon which those who believed in the liberal feeding based their claims.

Dr. Graham Lusk said that twenty years ago when he was in Munich he took a diet containing 20 grams of

nitrogen and 500 grams of carbohydrates. When the 500 grams of carbohydrates were left out, the nitrogen in the excreta arose, showing that in a normal person the carbohydrates protected the proteids. When he returned to this country the thought occurred to him that possibly proteid metabolism in fevers might be lessened or stopped by giving a diet rich in carbohydrates. At the New Haven Hospital a standard diet of milk with a certain percentage of sugar was tried, but the figures obtained from each day's sample of urine were so misleading that the experiments proved nothing. A high carbohydrate diet did protect large proteid waste. Tuberculosis was treated by giving four quarts of milk and a number of eggs a day, with a probable total of 30 grams of nitrogen; this represented an enormous quantity of proteid and Dr. Lusk said there was no scientific work anywhere which showed that this was either necessary or advisable.

Dr. C. G. L. Wolf said that for the last three years he had been engaged with Dr. Ewing and Dr. Lambert in a study of the infectious fevers from another standpoint, the investigation of the nitrogen and sulphur metabolism as represented by an analysis of the urine. For the purpose of this work it was necessary to employ a diet of constant composition. In their first experiments they employed a diet containing very little protein, but whose heat value was mainly made up of fat and carbohydrate. The caloric value of this food was about 2,000 calories. Their food was not only low in heating power but contained sufficient protein. He was struck by the large loss of body protein which they encountered. In the pneumonias a nitrogen loss by the urine of 30 grams was not infrequent; this meant a loss of muscle tissue of over 600 grams, a pound and a quarter, a day. The typhoid cases also gave similar results, although not so marked. In the pneumonias, after the crisis, the nitrogen loss dropped with remarkable suddenness. This showed that while the diet was adequate during convalescence, it was in no way sufficient when the toxemia was at its height. He had not the slightest doubt that had the diet furnished a heat supply of 3,000 or 3,500 calories with an adequate supply of protein, they would have converted the loss of body tissue into a gain. In times of epidemics the large percentage of the mortality fell on the underfed. In these instances one was dealing with subjects receiving insufficient heat supply and minimal quantities of nitrogen. The death rate of the inadequately fed Asiatic was incomparably greater than that of the European exposed to the same source of infection. The experimental evidence of the effect of undernutrition on the resistance to toxic agents was also distinct. There seemed to be no doubt that the loss of body proteid acted deleteriously in two ways; first, in the production of a toxic condition or toxic products, and secondly by lessening the resistance of the patient to the infective process. If this was so, every effort should be made to prevent this loss, and Dr. Coleman and Dr. Shaffer had clearly pointed to the method.

Dr. W. Gilman Thompson thought that the contributions to the study of metabolism and diet in typhoid fever by those who read papers marked a very important beginning in the work. He said he had seen almost every kind of food tried in typhoid fever. Twenty-five years ago they gave an exclusively milk diet, and the milk was continued ten days after the normal temperature was reached. They then were imbued with the idea of over-feeding; on the contrary, the patients were underfed. Six years ago milk sugar was used. They also used fats. They tried cream and cod liver oil in the latter stages of the disease, and then had difficulty because of the flatulent dyspepsia which developed. Then carbohydrates were tried, egg albumin and water, etc. It was a noteworthy fact that the best nourished patients were the hardest hit in this disease. Such a patient was likely to have a hard time of it, and apt to be extremely ill, to have relapses and complications. His experience had proven that when typhoid fever patients had had a high temperature for five, six, or seven weeks, they would improve very much on a liberal diet. Patients should have a good digestion, there should be an absence of meteorism, and he believed it was best to give as liberal a diet as they could digest, largely of milk, but reinforced by gruels.

Dr. Egbert Le Fevre said that an exclusive milk diet was an unsuitable one for the average typhoid fever patient. Some years ago it was shown that to obtain a sufficient number of calories from milk it was necessary to give so much milk that the patients could not tolerate it. Since using a liberal diet in typhoid fever patients he had been much gratified at the results. Much of the fermentative condition and diarrhea was due to the excessive amount of milk given. If the stools were examined a cause for the flatulency would be found. Dr. Le Fevre said he tried to take two quarts of milk a day and nothing else, and the lesson learned was kept in mind when ordering milk for a patient. Patients could not tolerate large quantities of milk. On the other hand, they could tolerate mixed feeding where carbohydrates, albumin water, and milk were more or less alternated. In post-typhoidal sepsis, where the patients ran a temperature for a long time but without definite typhoidal symptoms, with progressive emaciation, a more liberal feeding was indicated.

Dr. T. C. Janeway believed that the papers presented a clear argument for the use of higher carbohydrate diets in such diseases as typhoid fever, but yet no clear statement was made as to how to apportion the proteid content. The objections to the use of milk sugar were hard to overcome; although a considerable amount might be given in lemonade, yet many patients would reject this. To fortify with cream was easy of accomplishment.

Dr. James Ewing said that the loss of the body nitrogen was of scientific interest and should be examined chiefly from two points of view, as bearing first upon the therapeutic control of the disease, and, second, as bearing upon the pathology of the disease. They were now accustomed to suppose that typhoid fever resulted from a growth of bacilli in the body as in a test tube, and the severity of the disease depended upon the virulence of the bacilli. There was something in this view. The typhoid bacillus varied a great deal in virulence and in the numbers found in the body. But on the other hand, the body itself varied a great deal; he believed there was good pathological and clinical evidence to show that variations in typhoid fever depended upon the variations that were established in metabolism. When typhoid fever was studied chemically it would be found that the severest cases showed the greatest loss of nitrogen, and the severity of the disease could be estimated by the loss of nitrogen. As a measure of the severity of the typhoid fever, a study of the typhoid bacillus itself was not reliable, but a study of the nitrogen loss was more reliable. The majority of the cases died from autointoxication; some died rapidly with or without disagreeable symptoms. There were certain definite conditions which might arise as complications, and one was acute yellow atrophy of the liver, and in this there was a disturbed metabolism. If metabolism could be controlled by a proper diet, it would eliminate a certain number of these particular cases. It was well known that very well fed patients did badly; Dr. Ewing said of course they did; they lost sixty or seventy pounds of flesh in three or four weeks. As a rule very fat patients did badly. In any condition where the body fat had to be burned, the ordinary nutrition was turned into starvation; here the prognosis was bad. The sudden burning of the body fat was dangerous. This might be eliminated by choosing and administering carbohydrates.

Dr. Coleman wished to make it plain that they were not advocating any particular dietaries; the work had not progressed far enough for that. They hoped to be able to arrange a dietary in the future.

Stated Meeting, Held March 19, 1908.

The President, Dr. John A. Wyeth, in the Chair.

The Physiological Mechanism of Vasoconstriction and Vasodilatation.—Dr. George B. Wallace read this paper. (See p. 673.)

The Therapeutics of Vasoconstriction and Vasodilatation.—Dr. Egbert Le Fevre read this paper. See p. 676.)

The Present Status of Experimental Arterial Disease.—Dr. I. Adler read this paper. Josue in 1903 reported that he had artificially produced arteriosclerosis in the aorta of rabbits by intravenous injections of adrenalin. The lesions produced were characteristic. The site of predilection was the ascending portion and the arch of the aorta. The abdominal aorta was the last to suffer. The lesions appeared as larger or smaller patches of peculiar translucent appearance and rough surface; in the advanced stages the edges were somewhat raised above the level of the inner surface of the vessel, while the center was usually depressed; the vascular walls were distinctly thinner than normal in and about these patches and thus tended to the formation of aneurysmal dilatations and pouches. As a rule calcification appeared at a very early stage of the process. Almost all investigators had found these lesions confined to the aorta, no matter how long the animals had been treated. All were pretty well agreed on the histology of these lesions. The degeneration was primarily and mainly located in the media. Dr. Adler mentioned rather a large group of substances, some tending to raise blood pressure, some having no effect at all upon it, some even lowering it, but all producing very similar effects upon the aorta of rabbits. They all primarily affected only the media, causing necrosis with degeneration and calcification of the smooth muscle fibers, stretching and breaking up the elastic fibers and, where the intima was at all affected, it was simply in the form of more or less secondary and compensatory thickening, never associated with any degeneration or ulceration. The lesions described had been obtained only in rabbits. The positive results obtained were very frequently in no proportion to the number of injections or to the duration of the experiment. Josue called attention to the fact that the age and weight of the rabbit was an important factor; that results were more apt to be positive in old animals than in the young ones. On the other hand, there were reports of old animals showing nothing, and of young animals with positive results. In view of irregular and contradictory results, the question suggested itself to many investigators: Were they really producing an experimental effect by the intravenous and subcutaneous injections? Was it not possible, nay even probable, that their so-called positive results were the natural outcome of spontaneous disease of the rabbit, and had no relation to their experimental treatment? It was beyond doubt that arteriosclerosis did occur in rabbits. In view of the startling figures brought forward by Miles, and after deliberate and careful study of all the results, both positive and negative, at present available, it might well be questioned if the aortic lesions observed were the result of experiment, or if they were not rather simply the natural outcome of spontaneous disease without any causal relation to experimental procedures. It was an almost universal consensus of opinion that pressure and tension were the main factors in the development both of the physiological and pathological alterations in the arteries, and that mechanical impairment was the underlying and primary cause of arteriosclerosis. Arteriosclerosis was found with increasing frequency as more attention was paid to the subject, in youthful individuals, and Simnitzky, who confined his attention only to the aorta, found the early stages of arteriosclerosis in individuals under twenty-five years of age in at least 27.5 per cent. of all cases examined. Arteriosclerosis might be designated as a morbid condition of the blood-vessels closely following and allied to the physiological process of development, growth, and senescence of the vascular system and governed by the same laws. Arteriosclerosis was merely the anticipation in time, extent, and intensity of the normal "physiological" condition of senility. It was an impairment or loss of elasticity and of functional adaptability of the vessel walls. Pathologically it was a process of degeneration of the elastic and muscular elements of the vessel walls, associated with compensatory and reparative hyperplasia principally in the connective tissue elements, and often leading to calcification and ulcerative processes. The recent experimental researches with adrenalin, nicotin, and all the other substances would seem to have a direct bearing upon the problem of arteriosclerosis inasmuch as they appeared to demonstrate the effect of toxins of various kinds upon the development of atherosclerotic lesions in the rabbit. They would also appear to go far towards establishing a most important fact, namely, that different kinds of toxic agents could produce lesions of different histological character. It must be confessed, however, that the element of uncertainty as to how much was due to the experiment and how much was spontaneous, very seriously impaired the value of all this work.

The Effect of Prolonged Adrenalin Medication on the Human Circulatory Organs, with Report of Case.—Drs. Harlow Brooks and D. M. Kaplan presented this paper which was read by Dr. Brooks. It was generally supposed that adrenalin caused a marked increase in blood pressure soon after its hypodermic administration; this was rarely produced when given subcutaneously. A certain amount of danger accompanied the persistent use of this agent. With regard to the vascular lesions produced by the prolonged administration of adrenalin, they resulted not only from a possible mechanical injury, but also in some other way, causing the appearance of degeneration or necrotic foci especially in the media of the vessels. The lesions produced by adrenalin in the arteries of experimental animals were not those of true arteriosclerosis as seen in man. They wished to place on record a case in which adrenalin was administered for over three years, the drug being given daily and in large amounts varying from 10 to 120 minims intramuscularly per dose. The patient suffered from bronchial asthma. During her stay in the hospital, lasting three years, she received no less than 2,000 injections, and the blood pressure taken shortly before her death showed no permanent alterations. The total amount of the drug received by her equaled forty-four ounces. She died of hemorrhagic pancreatitis. The visceral lesions were predominatingly those of an acute parenchymatous type and were apparently of recent origin for the greater part. Some of the organs, notably the liver, heart, and lungs, showed also the changes resulting from chronic passive congestion, probably of considerable standing. The lung showed in addition the typical changes of a chronic bronchial asthma. The pancreatic lesion apparently originated some weeks before death, finally terminating with an acute diffuse capillary hemorrhage and resulting necrosis. The alterations in the medulla of the adrenal bodies might be etiologically related to the adrenalin medication. The most striking feature found in the aorta and large trunks was preeminently a type of focal necrosis, which he believed to have been entirely separate and distinct from the ordinary changes of arteriosclerosis which were also manifested in lesser degree in the same vessels. These changes, and especially those involving the media, were quite similar to those produced in experimental adrenalin poisoning and they believed them to be due to the prolonged and heavy administration of this drug. They believed that the relative slight degree of these changes in a case where the drug was used so freely and for so long a time, indicated that it might be used in ordinary cases sufficiently for the average therapeutic result with relative impunity.

SECTION ON MEDICINE.

Stated Meeting, Held February 18, 1908.

DR. HERBERT S. CARTER IN THE CHAIR.

General Phlebosclerosis, Thrombophlebitis of the Left Common Iliac, Moist Gangrene of Left Lower Extremity; Amputation; Recovery.—Dr. H. W. BERG made a report of this case. He reported it for two reasons: First, because of its rarity, and, second, because of the interest attached to the complicating left hemiplegia, from which the patient ultimately recovered, due either to a thrombosis of the cerebral veins following a similar sclerophlebitis or an embolus of the Sylvian branch of the middle cerebral artery originating from a thrombus below, a portion of which, carried into the circulation, had passed from the right to the left heart through a patent foramen ovale. Sclerosis of the veins of the body or general chronic endophlebitis, similar to, although not necessarily accompanied by, general arteriosclerosis, was first observed and described by Lobstein in 1835. Martin found this condition present in 60 per cent. of all male patients over 65 years old in his service at the Montreal Hospital. But in young patients without arteriosclerosis the lesion was extremely rare. He reported a case in a patient of 24 years, whose superficial veins felt like thick, more or less rigid, calcified cords, indeed somewhat like arteries, except that the pulsation was absent. Following the report of Dr. Leo Buerger of the results of the gross and minute pathological examination of the amputated limb, he again called attention to the rarity of the condition. But a few cases of general arteriosclerosis in young men had been reported in the literature, and in these cases there was generally an accompanying arteriosclerosis. Even smaller in number had been the cases of phlebosclerosis in which the arteries had been perfectly normal, as in the patient whose history he recorded. He said that he had not seen a single case in the literature in which a phlebosclerosis, complicated by a thrombophlebitis of a large venous trunk had resulted in gangrene of an extremity, requiring amputation. Thrombosis of even large venous trunks very rarely resulted in gangrene of a whole extremity, owing to the fact that the collateral circulation very soon became sufficient to act vicariously, and even permanently, for the occluded vessel Obviously, owing to the general phlebosclerosis, the collateral veins were hardly sufficient for their usual function, and failed to undergo the dilatation and enlargement necessary for an efficient collateral venous circulation. That the patient suffered from thrombosis of the left common iliac vein was shown by the fact that not only were the edema and swelling and the superficial dilatation of the collateral veins marked in the affected leg, and particularly the thigh, but there was marked edematous infiltration of the left side of the anterior abdominal wall and loins. Indeed the slight swelling of the other leg aroused the suspicion that the thrombus had extended into the vena cava, thus interfering with the return of blood from the right common iliac. They looked for the appearance of blood in the urine to indicate the extension of the thrombus high enough up to interfere with the venous return from the kidneys, but this symptom of a passive venous congestion did not occur.

A Case of Pernicious Malaria with Autopsy.—Dr. G. R. SATTERLEE made this report, which was interesting because of the infrequency of tropical malarial fever in the northern part of this country, and the still more infrequent reports of autopsies on these cases. Temperature charts and plates were presented. He concluded (1) that this was a case of acute malignant or pernicious malarial fever of the estivoautumnal type (tertian form, according to Dr. Charles F. Craig, U. S. A.); (2) that death was caused by the overwhelming invasion of the blood by the parasite and due possibly to the toxins evolved and not to acute cerebral congestion and thrombosis; (3) that the sporulation of the organism took place principally in the inner organs, especially in the spleen, liver, lungs, pancreas, bone marrow, and, to a less extent, the kidneys; (4) that the gametocytes might not be seen in the peripheral circulating blood until just before death; (5) that alcoholism played a small part as a factor in the man's death; (6) that the diagnosis of pernicious malaria could be made on the small size, dark cytoplasm, and shrinking of the organism of the infected corpuscles.

The Life History of the Malarial Parasite.—Dr. D. M. KAPLAN presented this communication. Of mosquitos only the culicidæ were of interest to the physician. The *Anopheles maculipennis* was the direct host of the malarial organism, and he gave a few anatomical and biological facts concerning this insect. He then considered the parasite itself, and concluded his paper with a consideration of the various phases encountered during its life in the human blood. The antennæ, palpi, and stinger serve to differentiate the male from the female anopheles. In the question of malarial transmission, one had to deal only with the females, as they alone sucked blood and harbored the parasite. Of biological interest was the wide range of territory occupied by mosquitos; they could be found as far as 70° north and 50° south of the equator. The male fecundated the female and then most likely died. The males, without exception, were vegetarians; the females sucked blood from man and beast in order to complete the development of the eggs. The anopheles could hatch in sea water. The malarial parasite belonged to the class of unicellular animals, or protozoa. Of the malarial parasites there were three varieties, which he named the ordinary tertian parasite, *Plasmodium vivax tertianæ, Plasmodium malariæ quartenæ, Plasmodium immaculatum tropicum, quotidianæ* or *tertianæ*. He then described the developmental cycle of the parasite. The picture seen in the blood of human beings corresponded to the asexual cycle of the hematozoon and was known as the schizogonic period, in contrast to the sporogenic or sexually potent period in the body of the anopheles. After describing the life of the malarial parasite in the human blood, he said the sexually potent cycle took place in the stomach of the mosquito. The first manifestation of sexual activity was noted in the female organism. An active movement of the pigment took place, with a tendency to approach the periphery; then some of the pigment was thrust in a lumplike mass from the parasite and served to attract the macrogametes, which had, by this time, been thrust from the microgametocyte. In an instant the microgamete was blended with the macrogamete, only one flagellum entering one female parasite. The so-called oökinet was formed in about fifty to sixty minutes, and this had the power to penetrate through the epithelial layer of the mosquito's stomach and lodged finally between the muscular and elastic layers, where it joined on oval cyst. This stage was known as the oöcyst stage. The future development of the oökinets was marked by a direct division of the nucleus into two, four, etc., and a corresponding enlargement of the oöcyst. In the further development of oöcyst it became filled to its capacity and finally burst, discharging its contents into the body of the mosquito; its lodgment in the salivary glands was accomplished by the blood and lymphatics. In the differentiation he called attention to the fact that in the tertian type the pigment was fine, yellow-brown in color, and the red blood cells were distinctly swollen and with stippling. In the quartan type, the pigment was coarse, very dark, and in small quantity, and there was no stippling in the red blood cells. In the tropical type the pigment was very fine, was dark-brown, and in very small quantity, the red blood cells were contracted, were the color of old brass, showed stippling, and intense staining.

Report of a Case of Rapidly Fatal Diabetes.—Dr. T. C. JANEWAY reported this case, one of unusual type in his

experience. A girl of nineteen years, a student at Vassar College, had enjoyed unusual health all her life. There was, however, a history of diabetes in her father's mother, this being the only case in the family. Her parents were American. She had had nothing but the ordinary infectious diseases of infancy. In 1896 she had an attack of a short fever, in all probability typhoid. She had always been a robust girl and athletic. While in college in the fall of 1906 she was well except for an attack of tonsillitis. In the beginning of the second week in September, 1907, she noticed that she was more thirsty than usual, but she kept in her ordinary health. During the latter part of September she returned to college. On October 13 she applied to Dr. Baldwin because she was passing a large quantity of urine. She had extreme frequency of urination, was languid and drowsy. The urinary examination showed 72 ounces passed, specific gravity of 1.040, with 5 per cent. sugar, but no diacetic acid. She was placed on a supposedly strict diet. One-half a pound of gluten bread a day caused a lessening of the frequency of urination. During the last few days of her stay at Poughkeepsie she began to pass diacetic acid. On October 30, about six weeks after the first onset of any possible symptoms, she came to New York to consult Dr. Janeway's father. She vomited the morning before leaving Poughkeepsie and stated that she was short of breath when she entered the Grand Central station. In the office she had the typical Kussmaul breathing. The urine examination of a specimen representing five hours' secretion only, showed a large amount of sugar and an enormous Gerhart's reaction, showing a large amount of acetone. She was sent to St. Luke's Hospital. She vomited once or twice more. The same afternoon she had much more air hunger. She was placed upon soda both by mouth and rectum. Her temperature was subnormal. Most of the soda was retained. During the night she had severe pains in the right chest, but this could not be accounted for on physical examination. She became more and more drowsy. Her pulse was rapid. In the morning she was given an intravenous saline infusion with bicarbonate of sodium added. Caffeine salicylate was given hypodermically. She became comatose. At 2 P. M. she passed twenty ounces of urine and immediately collapsed, became cyanotic, lived one hour, and died of gradual respiratory and cardiac failure. The twenty-four-hour urine, from October 30 to 31, amounted to 1,700 c.c., with 14.9 grams sugar. Acetone was present. Only 6.8 grams of nitrogen were passed in twenty-four hours, in which 2.6 was ammonia nitrogen, *i.e.* over 31 per cent. of the total nitrogen. The division of the urine secreted in certain periods showed the effect of the soda administered on the ammonia nitrogen output. In the first five-hour period, with no soda, she passed .155 gram of ammonia nitrogen per hour. In the second period, with soda, she passed .097 gram. This showed almost one-half the amount passed when on the soda treatment. In 19 hours 75 grams of soda was given; on the next day she received 30 grams; she passed a still smaller amount of ammonia nitrogen, .072 gram per hour, but there was no effect upon the coma. She also had a trace of albumin and some granular casts. Only a few such cases had been reported in the literature of diabetes proving as rapidly fatal as this. He could not give the exact duration of the diabetes; but the girl was apparently healthy, mentally and physically, up to a certain time, and it made him feel that it dated back no further than the second week in September, this period of only three weeks being surprisingly short. Dr. Janeway passed a chart around showing the urinary findings.

Report of a Case of Diabetes with Unusual Cerebral Symptoms.—Dr. L. A. Conner made this report. The patient was an Italian girl, sixteen years old. Her family history was negative. Her earlier history was unimportant; she had always been robust and strong. She was in her usual health up to three weeks before admission to the hospital, when, without warning, she developed twitching of the right arm and leg without loss of consciousness and with a feeling of tingling in the skin. These attacks were repeated several times a day up to the time of her admission to the Hudson Street Hospital. It was also noticed that she had increased thirst and passed urine several times during the night. On admission (December 12, 1907) she was found to be a well-developed, well-nourished girl, with good color, conscious and intelligent. The chest and abdomen showed nothing abnormal. There was distinct weakness of the right arm and leg and absence of both patellar and triceps reflexes; otherwise the examination of the nervous system was negative. The eye grounds were normal. From the time of her admission to her death, thirteen days later, the patient had daily from eight to fifteen convulsions. They varied in duration from one minute to one hour. They consisted of a clonic spasm of the right arm and leg, with frequent twitchings of the upper part of the face and sometimes rigidity of the left arm and leg. There was no loss of consciousness. On the day after admission there was a positive reaction for both acetone and diacetic acid. Thereafter neither was present until the day of her death. There was no Beta-oxybutyric acid present at any time. On the day before her death the ammonia nitrogen formed 9.5 per cent. of the total nitrogen. On the tenth day in the hospital she became drowsy; this gradually deepened into somnolence and finally into coma; the temperature rose gradually and she died on the thirteenth day, less than five weeks after the first symptoms. At no time during the coma was there present the peculiar full breathing which was regarded as the usual and characteristic feature of diabetic coma. The autopsy showed an extreme degree of atrophy of the pancreas, with almost complete disappearance of the body and tail. None of the other viscera showed important changes. In the brain and medulla nothing whatever abnormal could be found on either gross or microscopical examination. Dr. Conner said that convulsions of any sort in diabetes were exceedingly rare. In the few cases reported they had almost all been of epileptiform type and had occurred in connection with a terminal coma. This case was peculiar (1) in the Jacksonian character of symptoms; (2) in the long duration of the attacks (five weeks); (3) in the apparently mild type of diabetes; (4) in the absence of the usual evidences of severe acid intoxication.

Diabetes and the Alkaline Treatment.—Dr. C. N. B. Camac reported the case of a woman who had been in the City Hospital from February until November. She showed the usual symptoms and signs of diabetes. Between February and May the sugar in the urine reached the highest, 4.25 per cent., the lowest 2.3 per cent. There was a slight trace of acetone throughout. About May 23 she began to show irritability and there was some diarrhea: the patient rejected treatment and became troublesome. As she was below the average mentally, no particular note was made of this until June 3, when she became drowsy and later showed definite stupor. She could be aroused by shaking. At that time the specific gravity of her urine was 1.030, and there was a definite acid reaction. There was present acetone, but no diacetic acid. There was apparently an oncoming coma. She was placed under the alkaline treatment with this arrangement—that if in twenty-four hours the condition developed markedly, she was to be given subcutaneously bicarbonate of soda injections; if the condition continued to deepen it was to be given intravenously. If no increase in the symptoms was noted, saline enemata were to be given, one pint every six hours, and 500 c.c. normal salt solution subcutaneously and 390 grains of soda bicarbonate in twenty-four hours by mouth. This treatment was instituted June 5. The condition did not get more marked, but she continued in a semicomatose condition for three or four days. She received the

salt solution subcutaneously and by enema and the soda bicarbonate by mouth. The percentage of sugar dropped to 1 per cent.; the reaction continued acid, and the acetone increased and diacetic acid appeared. Beta-oxybutyric acid was not present. This was on June 7. On June 10 she remained in the same condition, and did not become more deeply comatose. The acid reaction continued. The percentage of sugar was slightly raised, the acid reaction persisted, but the Beta-oxybutyric acid did not appear. The sugar remained at 1 per cent. and the specific gravity became 1,011. The reaction was slightly acid; the acetone was increased as well as the diacetic acid. One June 11 the diacetic acid disappeared, although the acetone was still present. The sugar dropped to .5 per cent. and the specific gravity became 1,009. The patient's condition on this date improved. The urine became alkaline by litmus reaction, but by more accurate test was shown to be acid. The treatment was continued, the soda bicarbonate was reduced from 390 to 90 grains in twenty-four hours. The diacetic acid did not again appear. Acetone was present but finally disappeared. On the 13th she talked freely and appeared to observe what was going on about the ward. There was at no time the Kussmaul type of breathing, but there was incontinence of urine and feces during the stupor. The ammonia nitrogen, urea nitrogen, and total nitrogen were not disturbed. The total acidity changed definitely under the alkaline treatment; the reaction became distinctly alkaline and did not become acid for a number of weeks. The points that were noticeable were the change in the amount of sugar, the change in the specific gravity, and the change in the reaction. The acetone first appeared; then the diacetic acid, with an entire absence of the Beta-oxybutyric acid. Then occurred an inverse disappearance. In association with the changes noted above, there was an unusual change in the clinical appearance of the case. There was no disturbance in the nitrogen, with the exception of the rest nitrogen, which was high. Dr. Camac said he did not attempt to comment upon this case; mild acidosis suggested itself; yet he thought some other metabolic disturbance must be considered to account for the condition. The alkaline treatment was begun before the diacetic acid appeared; this acid appeared just after the alkaline treatment was begun. Of course, it was well known that most authorities were of the opinion that the alkaline treatment, once coma developed, was of no avail. The amount of alkali received by this patient was not high. This patient continued to receive the alkaline treatment over a number of weeks and remained practically entirely free from any evidences of intoxication. She was up and about the wards. In the following October she again apparently was passing into an attack similar to that already noted. After twenty-four to thirty-six hours it was evident that this was the beginning of a hemiplegia. The feeling then was that a mistake had been made in associating the former attack with the diabetes, but this was difficult to believe in the face of the urinary findings. The patient died. At autopsy there were found lesions in the pancreas to account for the diabetes. The presence of cerebral arteriosclerosis accounted for the hemiplegia. The urine and histological specimens were independently examined at the Streeter and Cornell Laboratories and the respective findings carefully compared.

Dr. James Ewing said he had an opportunity of seeing the pancreas in these cases, which showed extensive interstitial productive inflammation with the consequent destruction of the alveoli, with but few lesions in the islands of Langerhans. The pancreas in Dr. Camac's case showed identical lesions, but less dilatation of the ducts than in Dr. Conner's case. He said he was chiefly interested in the relation of acidosis to this condition, and he thought that the data favoring the view that these comas were referable to any one or all the acetone bodies was losing ground. There was not sufficient ground for the belief that the acetone bodies were sufficiently toxic, or that their salts were sufficiently toxic or acid reaction so great as to abstract alkali from the tissues and so bring about a state of coma. The toxic effects of acetone had recently been experimented with, and as a result it had been shown that acetone occupied an intermediate position between alcohol and chloroform. It could be given in enormous doses to animals. It could not be considered as an important toxic agent in disease. In Dr. Camac's case, while there was practically no acidosis, there was a remarkable disturbance in the rest nitrogen, and what the significance was he said he did not know. But when there was 26 per cent. of rest nitrogen with 10 grains total nitrogen, the patients were sick. Curiously enough, while the ammonia nitrogen disappeared, the rest nitrogen remained high. In the beginning of the disease this 26 per cent. indicated a serious disturbance in metabolism apart from the acidosis. He was very much interested in the views held by some German workers with regard to acidosis. When the carbohydrates failed to be burnt the fats were called upon for the energy; with deficient oxidation of these fats there was brought about destruction of proteid bodies; and so they were able to interpret acidosis as an incomplete metabolism going on.

Dr. Mayer said that acetone was always found in the body, and slight quantities, from 1 to 5 centigrams, were found in the urine. An increase in the acetone was found in diseases, such as malnutrition, inanition, starvation, phthisis, and in abdominal diseases especially, particularly those of children. Whenever the carbohydrates were not sufficiently burnt, these acetone bodies were found in the urine; very often these acetone bodies could be made to disappear in disease by giving carbohydrates, if they could be burnt in the body. In the burning of sugar in the body, probably many products were produced which appeared in the urine. In diabetes sugar was not consumed in a normal manner; some sugar was always consumed, but not enough to prevent the appearance of acetone, Beta-oxybutyric acid, and other substances in the urine. One authority stated that acidosis was distinctly poisonous in diabetes, and it was that that killed. Von Noorden had attempted to prove that if the alkaline treatment was given in these cases it would cure the acidosis; Von Noorden's theory was that a definite poison was formed in severe cases of diabetes and that was what killed. Dr. Mayer called attention to the fact that Dr. Herter of this city reported the results of his experiments four or five years ago before the Section on Medicine. If there was a large quantity of acetone present, the alkaline treatment was of no avail. Dr. Mayer had tried giving certain products formed by formalin and ammonia, with the idea that they might break up in the kidney into their constituents and thus form ammonia.

Dr. T. C. Janeway took issue with the title of Dr. Camac's paper. He said he had had the opportunity of seeing this woman before and after Dr. Camac, and he felt strongly that what Dr. Ewing said was right; he did not know that the coma was due to either in diabetes or in uremia. Yet diabetic coma was a clinical entity. Dr. Camac's case was one of mild grade and apparently of long duration. He said he had a strong feeling that the coma in this case belonged to the type clinically of uremic coma or was due to some gross intracerebral changes.

Dr. Camac closed the discussion. He said the title of his paper had not been correctly given; it was not called coma. At the same time, he said, one should recognize the fact that the continental clinicians divided comas into three forms. They were beginning to doubt acidosis explanation of coma. In a short time they might be brought face to face with entirely different metabolic disturbances to explain the coma. These so-called border-line cases, where alkaline treatment had been given, should be reported, especially if they had been as carefully observed as this was. He said he had refrained from making comments upon the case; he simply presented clinical notes upon it.

Pathological Society of Philadelphia.

At a stated meeting, held February 27, Dr. W. M. L. Coplin exhibited "Skulls Illustrating the Inadequacy of Reparative Efforts of the Dura, as Compared with the More Active Function of the External Periosteum." In the two specimens shown the osteoclastic process was well advanced at the margins of the lesions in continuity, adjacent to the periosteum, covering the outer surface of the bones involved, while there was little progress in this direction on the inner surface. Dr. A. O. J. Kelly exhibited a specimen of "Carcinoma of the Stomach," from a man who presented symptoms suggestive of abscess of the liver with consecutive empyema. There were also indications of carcinoma of the stomach. An opening was made into the supposed purulent accumulation in the pleura and a moderate amount of pus evacuated. The wound was drained and a further amount of thinner fluid continued to escape. The patient died eventually, however, and post-mortem examination disclosed a cauliflower growth of the fundus of the stomach, with metastasis to the spleen, involvement of the pancreas, adhesion and thickening of the layers of the left pleura, and obliteration of the pleural cavity. The incision of the thorax had established a communication with the cavity of the stomach. Dr. M. B. Hartzell exhibited "Photomicrographs Made With Lumière Autochrome Plates." The plates are prepared by incorporating in them starch granules pigmented with the three primary colors, and they are exposed with the glass side forward, so that the rays of light are intercepted by the starch granules before reaching the sensitized medium, each color intercepting the rays of light for all of the other colors and permitting the passage only of rays of the same color as itself. A special color screen is interposed to exclude actinic rays. The result is an accurate transparent reproduction in colors, from which, however, prints cannot be made. In the case of microphotographs the exposure must be long, as much as two hours in some instances. For ordinary pictures an exposure of from two to fifteen or twenty seconds suffices. The results are eminently satisfactory, and they can be viewed by transmitted light or be reflected by means of a lantern on a screen. Pictures of patients with cutaneous lesions also were exhibited. Dr. E. Burvill-Holmes exhibited "An Organism Not Identified." It came from the body of a man who had long presented symptoms of disease of the lungs, without the presence of tubercle-bacilli in the sputum until late in the course of the disorder and after association with other tuberculous subjects. On post-mortem examination the appearances were not those commonly observed in cases of pulmonary tuberculosis, and examinations of a hanging drop and of cultures disclosed long filamentous organisms with branching, which failed to absorb the usual stains. Dr. Alfred Gordon exhibited a specimen of "spina bifida," which came from a newborn child of alcoholic parents. The formation consisted of a meningomyelocele, and it projected through a defect in the vertebral column in the lumbar region. It consisted of the spinal membranes containing the termination of the spinal cord and the cauda equina. Dr. W. M. L. Coplin and Dr. John Funke presented a communication entitled "A Preliminary Study of Hemagglutinins." In view of the disastrous effects at times observed following the transfusion of blood from one person to another for the relief of profound anemia, the endeavor was made to determine the factors concerned in bringing about the undesired results, and, if possible, to secure their elimination or avoidance. To this end the blood-serum from a case of pernicious anemia and from two others of pulmonary tuberculosis with profound anemia was brought in relation with normal blood from several sources, and the reactions studied. These were rather variable, in accordance with a number of conditions, the relations of which are yet to be determined. For example, while the blood-serum from two of the patients each caused agglutination of normal blood, the pooled serum from both failed to do so. Also the response was different when large amounts of salt solution, strong solutions of sodium chloride, were added to the serum than when weak solutions were added. Other variations of a comparable character were noted. Dr. Howard T. Karsner read a paper entitled "The Leucocyte Count in Diphtheria Before and After Antitoxin Administration—A Report of Thirteen Cases." The number of leucocytes in the blood was found to constantly increase, but the increase appeared to bear no relation to age, sex, character of the disease, extent or seat of exudate, or administration of antitoxin. Neither was much change found in the proportions of the several varieties of leucocytes. It did appear, however, as though there was a relative diminution in the number of eosinophiles. Dr. George Foster presented on invitation a communication entitled, "A Study of the Hemopoietic Organs in Diphtheria and Tuberculosis." In a considerable number of observations, including studies of the thymus, spleen, and palpable lymphatic glands, a constant increase in the eosinophile leucocytes was found in the organs named, such as was not present in the bodies of children and others dead from contagious diseases observed at the Municipal Hospital. The reaction is, therefore, considered specific to the toxins of diphtheria and tuberculosis and of the nature of a defensive response.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Tennessee State Board of Medical Examiners,

May 1-2, 1907.

MATERIA MEDICA.

1. Name two emetics, antipyretics (other than the coal-tar derivatives), antithelmintics, emmenagogues, diuretics, arterial sedatives, giving the dose of each, and the indications for the use of each.
2. What are antiseptics (internal)? Name two. Give the dose of each and the best mode of administering them.
3. What preparation of veratrum viride would you use? In what pathological lesions and in what dose would you administer?
4. Name one alkaloid each of cinchona, belladonna, jaborandi, hyoscyamus, opium, and hydrastis. Give the dose of each and indications for use.
5. What is the physiological action of podophyllin?
6. How would you prepare a normal salt solution and under what conditions would you use it?
7. How is Fowler's solution prepared?
8. How is the tincture of iodine prepared?

ANATOMY.

1. Name the muscles of the face and of the forearm.
2. Name the bones of the face and of the wrist.
3. Describe the external carotid artery, point of origin, and general course.
4. Describe the femoral artery. Give the point of origin and the important branches given off in its course.
5. Describe the diaphragm, its openings, the different organs in contact with or separated by it.
6. Describe the scrotum.
7. Name the largest muscle in the human body. Give origin and insertion.
8. Name the ligaments of the shoulder and elbow joints.

CHEMISTRY.

1. (a) What is a urinometer? Of what does it consist? How graduated? (b) With what is urine compared? What is needed for an ordinary uranalysis? (c) If upon boiling urine you get a cloudy precipitate, how would you determine the nature of the precipitate?
2. (a) State methods of obtaining urinary sediments. (b) What is a centrifuge and how is it used?
3. Tell what you know about oxygen. (Do not write more than one page.)
4. The stomach of a person supposed to have been poisoned with arsenic is brought to you; give in detail

your method of determining the presence or absence of that poison.

5. Give symptoms of strychnine poisoning and treatment of same. Differentiate its symptoms from those of other convulsive disorders. In case of death from strychnine poisoning, why is it more difficult to prove than arsenical poisoning?

6. Heat. (a) Define and explain expansion, conduction, and transmission. (b) What changes of state are produced by heat? (c) What is specific heat? (d) Give sources of heat.

7. State how, and the methods employed, and the source from which iodine is obtained. Common medicinal preparations used? How used? Doses and effects?

8. Define: (a) Static electricity. (b) Dynamic electricity. State uses of each. Define terms volt, ohm, and ampere.

SURGERY.

1. Define the terms "Science" and "Art" of surgery. What is aseptic surgery? What is antiseptic surgery? Illustrate the two latter.

2. Describe a Pott's fracture. How caused? Give treatment for (a) simple, (b) compound, (c) comminuted Pott's fracture. (d) Describe a Colles' fracture and give treatment. (e) What is a common result of almost any fracture of a long bone?

3. Diagnose fecal impaction from invagination of a gut, and give method of treating the first.

4. What is osteomyelitis? Diagnose. Give causation and treatment.

5. Give diagnosis and treatment of cancer of the breast.

6. Define perineorraphy and trachelorraphy, and describe the operation for each.

7. Describe in detail a curettement of the uterus.

8. Define (a) prostatectomy, (b) cystotomy, (c) nephrectomy, (d) nephrotomy, (e) lithotomy. Give in detail your method of enucleating an eye.

PRACTICE.

1. Do you expect to have any puerperal fever in your practice? If you do, what will be the cause? Define puerperal fever, and give treatment.

2. Give symptoms, diagnosis, prognosis, and treatment of acute Bright's disease. Should you have uremic convulsions, what would be the cause, and how would you treat them?

3. What do you understand by gallstones? What is the technical name. Give diagnosis and treatment.

4. Give diagnosis and treatment of hereditary syphilis.

5. (a) Write a prescription for general debility, (b) one for an acute bronchial cough, (c) one for chronic constipation, (d) one for chronic diarrhea.

6. Define acute rheumatic fever. Give symptoms and treatment. What is the most frequent complication?

7. Give symptoms, diagnosis, prognosis and treatment of enterocolitis.

8. Give symptoms, prognosis, and treatment of purpura hœmorrhagica.

PATHOLOGY.

1. What is the meaning of active, and what of passive pathological changes?

2. What pathological changes take place in the kidneys during an attack of acute congestion?

3. What pathological changes take place in the kidneys during an attack of acute nephritis?

4. What pathological changes take place in the liver during an attack of acute catarrhal jaundice?

5. What pathological changes take place in catarrhal pneumonia?

6. Give pathology of diphtheria.

7. What pathological changes take place in the spleen during an attack of malarial fever?

8. What is the pathology of erysipelas?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

TENNESSEE STATE BOARD OF MEDICAL EXAMINERS,

May 1-2, 1907.

MATERIA MEDICA.

1. *Two emetics*: Apomorphine hydrochloride, dose gr. 1-10 (hypodermically); Antimony and potassium tartrate, dose gr. j.

Two antipyretics: Quinine sulphate, dose gr. v.; Tincture of aconite, dose ♏x.

Two anthelmintics: Oleoresina Aspidii, dose gr. xxx.; Pelletierine tannate, dose gr. x.

Two emmenagogues: Pill of aloes and iron, dose 2 pills; Black oxide of Manganese, dose gr. ij.

Two diuretics: Infusion of Digitalis, dose ʒij; Sparteine Sulphate, dose gr. ij.

Two arterial sedatives: Tincture of Aconite, dose ♏x; Tincture of Veratrum, dose ♏xv.

2. *Internal antiseptics* are drugs which, when swallowed or inhaled are supposed either to destroy or inhibit the growth of microorganisms.

Two internal antiseptics: Creosote, dose ♏iij; best administered in the form of an emulsion with codliver oil. Betanaphthol, dose gr. iv; best administered in keratin-coated pills if its action is desired on the intestines.

3. The preparation of veratrum viride to be used, is the tincture; dose ♏xv.

4.

	One alkaloid.	Dose.
Cinchona	Quinine	gr. iv (of the Sulphate)
Belladonna	Atropine	gr. 1/150 (of the Sulphate)
Jaborandi	Pilocarpine	gr. 1/5 (of the Hydrochloride)
Hyoscyamus	Hyoscine	gr. 1/150 (of the Hydrobromide)
Opium	Morphine	gr. 1/4 (of the Sulphate)
Hydrastis	Hydrastine	gr. ss (of the Hydrochloride)

5. *The physiological action of podophyllin*: It is a gastrointestinal irritant; it has a drastic and cholagogue purgative action.

6. Normal salt solution is prepared by adding six drachms of sterilized sodium chloride to a liter of distilled water in a sterilized glass flask.

It is used to irrigate fresh wounds, to remove blood or foreign bodies, for cleansing mucous or serous surfaces; it also is used for intravenous injection when the circulation is failing; by hypodermoclysis it is used also when the circulation is rapidly failing, and after profuse hemorrhage, in cases of shock, septicemia, and uremia.

7. Fowler's solution is prepared by boiling ten grams of arsenic trioxide, twenty grams of potassium bicarbonate, and thirty grams of compound tincture of lavender in sufficient distilled water to make one liter.

8. Tincture of iodine is prepared by dissolving seventy grams of iodine and fifty grams of potassium iodide in alcohol enough to make one liter.

CHEMISTRY.

1. (*a*) A *Urinometer* is a form of hydrometer, used for determining the specific gravity of the urine.

It consists of a cylinder and a spindle.

The graduation on a urinometer is so constructed that the spindle sinks to the zero point when it is immersed in water at a given temperature. The denser the fluid into which the spindle is immersed, the higher it rises. The ordinary urinometer is graduated from 0 or 1,000 to 60 or 1,060.

(*b*) Urine is compared (for purposes of specific gravity) with distilled water at a certain temperature which is indicated for each instrument (generally 60° F.).

For an ordinary urinalysis, there are needed: A graduated cylinder in which to measure the quantity of urine; litmus paper; a "color scale"; urinometer; test-tubes, test-tube holder, test-tube stand; ureometer; albuminimeter; burette; pipettes; glass funnel; beakers; filter papers; alcohol lamp; centrifuge; slides and cover slips; stains; microscope; nitric acid; Fehling's solution; hypobromite solution, for ureometer; acetic acid; sodium hydroxide solution, potassium hydroxide solution.

(*c*) The cloudy precipitate may be due to urates, phosphates, or albumin. If it is due to phosphates, it will clear upon the addition of a few drops of nitric acid; if it is due to urates, it will disappear on being heated.

2. (*a*) Urinary sediments may be obtained (1) by allowing the urine to stand; (2) by centrifuging.

(*b*) A centrifuge is an apparatus by means of which the solids in a fluid are separated by centrifugal force.

4. "The stomach should first be carefully examined as to its pathological condition, and also for the presence of solid particles of the poison. It should then be cut up into small fragments with scissors known to be perfectly clean, and, together with its contents, placed in a clean porcelain evaporating dish; distilled water added in sufficient quantity, together with about one-sixth the bulk of pure hydrochloric acid, and heated gently for about an hour, when most of the solid portions will have become disintegrated. After cooling, the mixture is thrown upon a muslin strainer and the solid matters washed several times with pure water and squeezed. The strainer and contents should be preserved for subsequent examination. The filtrate should be concentrated by evaporation over a water-bath and then filtered through paper." (Reese.)

After this, the Reinsch test can be applied, as follows:

To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

5. The *symptoms of strychnine poisoning* are as follows: "Strychnine produces a sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm, or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours.

Treatment: "The convulsions are to be arrested or mitigated by bringing the patient under the influence of chloral or chloroform as rapidly as possible; the stomach is to be washed out, and the patient is to be kept as quiet as possible." (Witthaus' *Essentials of Chemistry.*)

Tetanus is the principal condition from which strychnine poisoning is to be differentiated. In *tetanus*, the onset is gradual, is apt to begin with trismus, swallowing is difficult or impossible, the condition is persistent, consciousness is dulled or lost, and there is history of a wound or injury. In *strychnine poisoning*, the onset is more sudden, the muscles of the jaw and neck are generally the last to be affected, there are marked remissions with muscular relaxation, consciousness is retained, and there is no history of a wound or injury.

Strychnine poisoning is more difficult to prove than arsenic poisoning, because in the latter the poison is not decomposed, and in spite of any chemical change the element arsenic remains, and may be demonstrated. This would not be possible in the case of strychnine.

6. (*a*) As a rule, all bodies *expand* when heated, and diminish in volume on losing heat.

Conduction of heat is its transmission from one molecule to the neighboring molecule.

Transmission of heat may take place by conduction, convection, and radiation.

(*b*) By heat, substances can be converted from the solid state to the liquid state, and from the liquid to the gaseous state, as ice can be converted by heat to water, and then to steam.

(*c*) *Specific heat* is the amount of heat required to raise the temperature of a substance a given number of degrees.

(*d*) *Sources of heat,* are: The sun, the interior of the earth, friction, pressure, electricity, chemical action, combustion.

7. Iodine is obtained from sea-weed. Sea-weed is burnt, and the ashes (called kelp) are extracted with water and the solution is then evaporated. The mother liquor is then distilled with manganese dioxide and sulphuric acid, or the iodine is obtained by passing chlorine in, and heating.

The common medicinal preparations, with doses, are: Tincture of iodine, ♏ij; Lugol's solution, ♏ij; potassium iodide, gr. vij; sodium iodide, gr. vij; ammonium iodide, gr. iv.

8. (*a*) *Static electricity* is electricity at rest; and is usually produced by friction.

(*b*) *Dynamic electricity* is electricity in motion; it is also called current electricity.

A *volt* is that electromotive force, which, acting steadily through a conductor having a resistance of one ohm, will produce a current of one ampère.

An *ohm* is the amount of resistance shown by a column of mercury 106.3 centimeters long with a base of one millimeter square, at O°C.

An *ampère* is such a current of electricity as would be given with an electromotive force of one volt through a wire with the resistance of one ohm.

SURGERY.

1. In *Aseptic Surgery* everything that is to come in contact with the wound is previously made free from germs, and all possibility of infecting the wound is avoided.

In *Antiseptic Surgery* antiseptic solutions are used to kill the bacteria that may be present or that may enter during the course of the operation.

2. *Pott's fracture* consists of a fracture of the lower end of the fibula, about three inches above the tip of the malleolus; and a fracture of the internal malleolus. The foot is twisted outward, the sole everted, and the heel drawn up; there is a depression at the site of the fracture, the inner malleolus either projects prominently or the fragment can be felt and crepitus elicited; the foot is shortened, and the ankle is swollen and widened.

Pott's fracture is usually caused by twisting the foot.

Colles' fracture is a fracture of the lower end of the radius; it is generally transverse, and is usually within an inch or an inch and a half of the articular surface. There is a characteristic deformity caused by the lower fragment and the carpus forming a prominence on the dorsal surface; at the same time there is a projection on the palmar surface just above the wrist, caused by the upper fragment. The hand is abducted and pronated, and the styloid process of the ulna becomes very prominent.

A common result of almost any fracture of a long bone, is shortening of the limb.

3. In *fecal impaction*, there is a history of long continued and increasing constipation, feeling of languor and depression, anorexia; the abdomen becomes distended gradually, and the symptoms develop slowly; pain comes on gradually, and later becomes continuous; there is usually a tumor in sigmoid flexure or cecum, it is doughy and firm; constipation is absolute.

In *invagination of the intestine*, there is a sudden onset, with severe pain which later tends to subside; rarely constipation, but often diarrhea may be present, accompanied with tenesmus; there is apt to be marked prostration or collapse; a movable tumor can often be felt in line of the colon, or in the rectum; in extreme case the invagination may protrude from the anus.

Method of treating fecal impaction: "The best means of relief are afforded by copious enemata of warm water administered in the knee-and-elbow position. Continuous irrigation by the siphon syringe is very efficacious, and, if employed for half an hour at a time, the hardest mass softens and gradually becomes disintegrated. The stream of water should be directed against the obstructing mass by means of a rectal tube. Before enemata are commenced it is often advisable to inject a few ounces of olive oil. Some physicians recommend copious injections of sweet oil with spirits of turpentine in the proportion of one drachm to the pint of oil. Metallic mercury has been strongly advocated. Occasionally, when low down, the fecal mass may be removed by scoop or spoon." (From *Reference Handbook of the Medical Sciences.*)

4. *Osteomyelitis* is inflammation of the bone and marrow; the term is often used now for inflammation of bone.

It is *caused* by infection, the bacteria gaining entrance either through a wound, or by extension from neighboring tissues, or they may be brought by the blood.

It is to be *diagnosed* from (1) *Rheumatism*, in which more than one joint is affected and the tenderness is *in* the joint and not *near* it. (2) *Tubercular arthritis*, in which the onset is slow, and the trouble starts in the epiphysis rather than in the diaphysis. (3) *Cellulitis*, in which the bone and periosteum are not affected, and in which there is always a wound.

In *osteomyelitis*, the *treatment* consists in relieving the constitutional symptoms, and preventing the bone from necrosing. An incision down to the bone is made; if pus is beneath the periosteum, the latter is also incised; a piece of bone is removed by chisel or trephine, pus is removed, the endosteum is hurt as little as possible, the wound is irrigated with hot bichloride solution, and packed with gauze; the soft parts are closed and the wound well drained. In case this fails, amputation may be necessary.

6. *Perineorrhaphy* is the operation of suturing a lacerated perineum.

Trachelorrhaphy is the operation of suturing a lacerated cervix uteri.

8. (*a*) *Prostatectomy* is the operation of removing the prostate gland, entirely or in part.

(*b*) *Cystotomy* is the operation of making an incision into the urinary bladder.

(*c*) *Nephrectomy* is the operation of removing a kidney.

(*d*) *Nephrotomy* is the operation of making an incision into the kidney.

(*e*) *Lithotomy* is the operation of removing a calculus by cutting into the urinary bladder.

Enucleation of the eyeball is performed as follows: "A general anesthetic is generally given. After introduction of the speculum, the conjunctiva is divided all around the cornea, as close to its border as possible, and dissected back as far as the insertions of the recti muscles. A squint hook is passed beneath the tendon of the internal rectus, and the latter is divided with the strabismus scissors close to its insertion; then the other straight muscles are cut in the same way, together with the subconjunctival connective tissue for some distance beyond the equator. The points of the scissors must always be directed toward the eyeball and the latter stripped as clean as possible to avoid any unnecessary removal of orbital tissue. Instead of commencing with a circumcorneal division of the conjunctiva, we may begin with a tenotomy

of the internal rectus and then divide the conjunctiva as we pass from tendon to tendon. The hook is passed around the globe to make sure that the attachments of the muscles have been completely divided. The eyeball is then dislocated forward by pressing the speculum backward, and thus the optic nerve is put on the stretch. A pair of enucleation scissors, closed, are passed between sclera and conjunctiva, feeling for the optic nerve; they are withdrawn, slightly opened, and the nerve is divided close to the sclera. The eyeball is held between the thumb and index finger of the left hand, and the oblique muscles and other unsevered attachments are divided. The orbit is plugged for a few minutes to control hemorrhage, and the conjunctiva is usually closed with a single suture, which is passed through its edge at intervals and tied like the string of a pouch. The eye is bandaged and the patient kept in bed for a day." (May, *Diseases of the Eye.*)

PRACTICE.

1. I don't expect to have any puerperal fever in my practice, due to any want of care on my part.

The *causes of puerperal fever* are: Pathogenic bacteria which may be introduced into the woman in several ways, such as by the hands of the physician, nurse, midwife, or of the patient herself; by unclean instruments and catheters; by coitus during the time immediately preceding labor; by contact with secretions from wounds of any kind, no matter where situated; by general unhygienic surroundings, and contact with a patient suffering from scarlet fever or erysipelas on the part of any one attending on the woman. The percentage of such cases will depend on the care exercised by doctor, nurse, etc.; when infection does occur, it is generally streptococcic infection, either pure or mixed with other germs.

Puerperal Fever is a fever beginning within a week after labor, attended with acute inflammation of the reproductive organs, and with septic infection of the blood and general system.

3. *Gallstones* are calculi formed in or found in the gallbladder or bile ducts.

The technical name is *Cholelithiasis.*

The *diagnosis is made* by (1) the intense and sudden pain, radiating from the right hypochondriac region to the right shoulder. (2) Cold sweat, feeble pulse, vomiting, and collapse may be present. (3) Chill and fever are present at the onset. (4) The calculus may be found in the feces.

Treatment. Prophylaxis includes: Plain and easily digested food, the ingestion of plenty of good drinking water between meals, sufficient outdoor exercise, salines, and the avoidance of indigestion.

During an attack: Inhalation of chloroform, a hypodermic of morphine (gr. 1/4) and atropine (gr. 1/120), application of heat, and diffusible stimulants if shock is present.

Cholecystotomy may be performed, and the stones removed.

5. (*a*) For *General Debility*:

℞. Strychninæ sulphatis, gr. j.
Quininæ sulphatis, ʒj.
Tincturæ ferri chloridi, ʒiij.
Acidi phosphorici diluti, ʒv.
Glycerini q.s. ad ℥v. Misce.

Signa: One teaspoonful after each meal.

(*b*) For *Acute Bronchial Cough*:

℞. Ammonii carbonatis, gr. xxxij.
Fl. extr. senegæ.
Fl. extr. scillæ, āā ʒj.
Tincturæ opii camphoratæ, ʒvj.
Aquæ destillatæ, ʒiv.
Syrupi Tolutani q.s. ad ℥iv. Misce.

Signa: One teaspoonful every three hours.

(*c*) For *Chronic Constipation*:

℞. Fl. extr. cascaræ sagradæ, ℥ss.
Tincturæ nucis vomicæ, ʒv.
Tincturæ belladonnæ, ʒij.
Glycerini q.s. ad ℥ij. Misce.

Signa: One teaspoonful three times a day.

(*d*) For *Chronic Diarrhea*:

℞. Morphinæ sulphatis, gr. j.
Bismuthi subnitratis, ʒj. Misce.
Et fiat in chart. no. xij.

Signa: Take one powder three or four times a day.

PATHOLOGY.

1. By *active pathological change* is understood that condition in which formation exceeds waste, and growth results. Examples: Hypertrophy, Tumor-formation, Regeneration.

By *passive pathological change*, is understood that condition in which morbid processes are attended by arrest or impairment of nutrition. Examples: Atrophy, Degenerations, Infiltrations, Necrosis.

7. In malaria, the spleen is much enlarged, and is of a brownish color, with areas of deep pigmentation; the capsule is thickened.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.
Alabama*	W. H. Sanders, Montgomery	Montgomery
Arizona*	Ancil Martin, Phoenix	Phoenix July 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock July 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco August 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver July 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven July 14
Delaware	J. H. Wilson, Dover	Dover June 16
Dist. of Col'bia	Geo. C. Ober, Washington	Washington July 14
Florida*	J. D. Fernandez, Jacksonville	Ocala July 13
Georgia	E. R. Anthony, Griffin	Atlanta May 4
Idaho	W. F. Howard, Pocatello	Boise October 6
Illinois	J. A. Egan, Springfield	East St. Louis May —
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis May 26
Iowa	Louis A. Thomas, Des Moines	Des Moines June —
Kansas	D. P. Cook, Clay Center	Kansas City June 9
Kentucky*	J. N. McCormack, Bowling Green	Louisville July 7
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans May 21
Maine	Wm. J. Maybury, Saco	Augusta July 7
Maryland	J. McP. Scott, Hagerstown	Baltimore June 9
Massachusetts*	E. B. Harvey, State House, Boston	Boston May 12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Detroit June 9
Minnesota	W. S. Fullerton, St. Paul	St. Paul June 2
Mississippi	J. F. Hunter, Jackson	Jackson May 12
Missouri	J. A. B. Adcock, Warrensburg	Kansas City May 14
Montana*	Wm. C. Riddell, Helena	Helena October 6
Nebraska	E. J. C. Sward, Oakland	Lincoln May —
Nevada	S. L. Lee, Carson City	Carson City May 4
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord July 15
New Jersey	J. W. Bennett, Long Branch	Trenton June 16
New Mexico	J. A. Massie, Santa Fe	Santa Fe
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo May 19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem May 21
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks July 7
Ohio	Geo. H. Matson, Columbus	Columbus June 9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee
Oregon	B. E. Miller, Portland	Portland July 7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg June —
Rhode Island	G. T. Swarts, Providence	Providence July 2
S. Carolina	W. M. Lester, Columbia	Columbia June 9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood July 8
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville May 5
Texas	G. B. Foscue, Waco	Waco June 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City July 6
Vermont	W. Scott Nay, Underhill	Burlington July 14
Virginia	R. S. Martin, Stuart	Richmond June 24
Washington*	C. W. Sharples, Seattle	Seattle July 7
W. Virginia	H. A. Barbee, Point Pleasant	Charleston July 14
Wisconsin	J. V. Stevens, Jefferson	Madison July 14
Wyoming	S. B. Miller, Laramie	Cheyenne June 10

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Oklahoma.—All physicians desiring to practise medicine in this State must have been actively engaged in the practice of medicine, and been legally licensed to do so, in either Oklahoma or Indian Territory prior to and on November 16, 1907. Those who cannot comply with the above, must take the examination. There is no reciprocity.

Virginia.—At the December meeting it was agreed to reciprocate with Maine. At the examination held in December, applicants with licenses from the following States were granted certificates without examination:—Maryland, West Virginia, District of Columbia, and Pennsylvania.

Texas has established reciprocity with the Medical Boards of Maine, Maryland, Missouri, and Nebraska. Some doubt has been raised as to the constitutionality of the new medical practice act in this State. The ground for this is the section requiring reregistration, which is declared to be unconstitutional because retroactive and tending to impair vested rights.

Missouri.—By the new medical practice act of this State, applicants for the State Board Medical Examinations must have a diploma from a reputable medical college requiring a four years' course, and also a high school certificate or its equivalent; this latter must have been granted before beginning the study of medicine.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

OUTLINES OF PSYCHIATRY. By WILLIAM A. WHITE, M.D. 12mo, 232 pages, paper, $2. The Journal of Nervous and Mental Disease Publishing Company, New York.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. Large 8vo, paper, illustrated; price, 7 shillings and 6 pence. Longmans, Green & Co., London.

L'AEROBISATION DES MICROBES ANAEROBIES. By GEORGES ROSENTHAL. Large 8vo, 105 pages, illustrated, paper; price, 5 francs. Felix Alcan, editeur, Paris.

DIE AUGENHEILKUNDE IN DER ROMERZEIT. By Dr. RODOLFO DEL CASTILLO, Quartiellers in Madrid. 8vo, 137 pages, illustrated, paper. Franz Deuticke, Leipzig und Wein.

APPLIED PHYSIOLOGY. By FREDERICK A. RHODES, M.D. 8vo, 206 pages, muslin. Medical Press, Pittsburg.

TREATISE ON HYGIENE. By R. H. FIRTH. 4to, 993 pages, muslin, illustrated. P. Blakiston's Son & Co., Philadelphia.

SURGERY. By W. W. KEEN, M.D., LL.D. 8vo, 1,132 pages, illustrated, half morocco, $8 net. W. B. Saunders Company, Philadelphia.

ATLAS DER GYNÄKOLOGISCHEN CYSTOSKOPIE. By Prof. Dr. W. STOECKEL. 4to, illustrated. August Hirschwald, Berlin, N. W.

A SHORT PRACTICE OF AURAL SURGERY. By J. ARNOLD JONES, M.B., Ch.B. (Vict.), F.R.C.S. (Ed.). 12mo, 264 pages, muslin, illustrated, $1.50 net. John Lane Company, New York.

COSMETIC SURGERY. By CHARLES C. MILLER. 16mo, 135 pages, muslin, illustrated, $1.50. Published by the author.

MALADIES DES OS. Par P. MAUCLAIRE. Large 8vo, 316 pages, paper, illustrated. J. B. Baillière & Fils.

MATERNITY. By HENRY D. FRY, M.D., Sc.D. 12mo, 220 pages, cloth $1.50. The Neale Publishing Company, New York.

CONSIDERATIONS HISTORIQUES SUR LA BLENNORRHAGIE. Par le Dr. ERNEST ROUCAYROL. Large 8vo, 244 pages, paper, illustrated. S. Steinheil, Paris.

TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY. 8vo, 453 pages, illustrated, paper. Hartford, Conn.

ALIMENTATION ET HYGIENE DES ENFANTS. Par le Dr. JULES COMBY. 12mo, 531 pages, illustrated, paper. J. Rueff, Editeur, Paris.

ETUDES SUR LA PHYSIO-THYROIDE. Par les Drs. LEOPOLD LEVI et HENRI DE ROTHSCHILD. Large 8vo, 363 pages, illustrated, paper. Octave Doin, Editeur, Paris.

PRIMITIVE SECRET SOCIETIES. By HUTTON WEBSTER, Ph.D. 8vo, 227 pages, muslin, $2 net. The Macmillan Company, New York.

DISEASES OF THE HEART. By Prof. TH. V. JÜRGENSEN, Prof. L. V. SCHROTTER, Prof. L. KREHL. Large 8vo, 848 pages, illustrated, half morocco, $5 net. W. B. Saunders Co., Philadelphia.

THE PROLONGATION OF LIFE. By ELIE METCHNIKOFF. 8vo, 343 pages, illustrated, cloth. G. P. Putnam's Sons, New York.

MODERN ELECTROTHERAPEUTICS. By FREDERICK STRONG, M.D. 8vo, 112 pages, muslin, illustrated, cloth. Rebman Company, New York.

LEITFADEN ZUR KLINISCHEN UNTERSUCHUNG DES BLUTES von Dr. med. C. S. ENGEL, 8vo. 170 pages, illustrated, paper, 5 mark. Verlag von August Hirschwald, Berlin.

VORLESUNGEN UBER DIÄTBEHANDLUNG INNERER KRANKHEITEN, von Professor Dr. H. STRAUSS. 4to, 340 pages, paper. Verlag von S. Karger, Berlin.

GESCHICHTE DER LARYNGOLOGIE IN WÜRTZBURG, von Professor Dr. OTTO SEIFERT. 4to, 68 pages, paper, 3.50 M. Curt Kabitzsch (A. Stubers Verlag), Berlin.

UBER DEN EINFLUSS DER GESCHLECHTSFUNKTIONEN AUF DIE WEIBLICHE KRIMINALITÄT. von Dr. JUR. SEIGFRIED WEINBERG. 8vo, 34 pages, paper. Carl Marhold Verlags Buchlandlung, Berlin.

BERICHT UEBER DEN XIV. INTERNATIONALEN KONGRESS FUR HYGIENE UND DEMOGRAPHIE. Professor Dr. NIETNER. 8vo, 314 pages, illustrated, paper. Verlag von August Hirschwald, Berlin.

PERSONAL HYGIENE IN TROPICAL AND SEMI-TROPICAL COUNTRIES. By ISAAC W. BREWER, M.D. 12mo, 130 pages, cloth, illustrated, $1.00 net. F. A. Davis Company, Philadelphia.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 18, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	444	189
Diphtheria	436	51
Measles	1640	46
Scarlet Fever	1005	66
Smallpox	2	—
Varicella	108	—
Typhoid Fever	19	5
Whooping Cough	13	3
Cerebrospinal Meningitis	7	7
Malarial Fever	—	—
Totals	3674	367

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending April 17, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alabama, Huntsville, vicinity	January–April	50	..
California, Los Angeles	Mar. 21–28	7	1
San Francisco	Mar. 21–28	15	..
District of Columbia, Washington	Mar. 28–Apr. 4	15	..
Georgia, Augusta	Mar. 24–31	2	..
Illinois, Chicago	Mar. 21–Apr. 28	9	..
Rock Island	Mar. 21–28	4	..
Springfield	Mar. 26–Apr. 2	5	..
Indiana, Elkhart	Mar. 28–Apr. 4	2	..
Evansville	Mar. 28–Apr. 4	1	..
La Fayette	Mar. 30–Apr. 6	1	..
Marion	Mar. 1–31	1	..
Muncie	Feb. 29–Mar. 7	4	..
Iowa, Cedar Rapids	Mar. 1–31	9	..
Kansas, Kansas City	Mar. 28–Apr. 4	6	..
Topeka	Mar. 21–28	9	..
Kentucky, Lewis County	Mar. 8–Apr. 4	35	..
Louisiana, New Orleans	Mar. 28–Apr. 4	15	10 imported
Maine, Limestone	Apr. 3	1	1 Import'd
Michigan, Detroit	Mar. 28–Apr. 4	1	..
Grand Rapids	Mar. 28–Apr. 4	10	..
Minnesota, Winona	Mar. 28–Apr. 4	2	..
Montana, Butte	Mar. 17–24	2	..
Nebraska, Nebraska City	Mar. 28–Apr. 4	6	..
New York, Niagara Falls	Mar. 28–Apr. 4	2	..
North Carolina, Charlotte	Mar. 21–Apr. 4	2	..
Ohio, Cincinnati	Mar. 20–Apr. 3	28	..
Dayton	Mar. 28–Apr. 4	1	..
Tippecanoe	Jan. 15–Mar. 14	33	..
Toledo	Mar. 21–Apr. 14	7	..
Warren	Mar. 28–Apr. 4	1	..
Zanesville	Mar. 1–31	1	..
Tennessee, Nashville	Mar. 28–Apr. 4	1	..
Texas, Eagle Pass	Mar. 31	1	1 Import'd
Galveston	Mar. 21–Apr. 3	2	..
San Antonio	Mar. 28–Apr. 4	12	..
Washington, Spokane	Mar. 21–28	12	..
Tacoma	Mar. 21–28	3	..
Wisconsin, La Crosse	Mar. 21–Apr. 4	8	..
Manitowoc	Mar. 21–28	3	..
Racine	Mar. 28–Apr. 4	5	..
Wyoming, Laramie	Mar. 5–Apr. 4	15	..

SMALLPOX—FOREIGN.

Arabia, Aden	Mar. 2–9	.	1
Brazil, Rio de Janeiro	Mar. 18–38	38	23
Canada, Halifax	Mar. 21–Apr. 4	2	..
Hamilton	Mar. 1–31	3	1
China, Shanghai	Feb 16–Mar. 8	5	foreign and 23 deaths native
Egypt, Cairo	Feb. 29–Mar. 4	4	1
Formosa	Feb. 8–Mar. 1	5	1
France, Paris	Mar. 14–21	6	..
Great Britain, Edinburgh	Mar. 14–21	2	..
Leith	Mar. 14–21	1	..
India, Bombay	Mar. 3–10	42	.
Calcutta	Feb. 15–22	9	..
Madras	Feb. 29–Mar. 6	1	..
Italy, General	Mar. 19–26	17	..
Catania	Mar. 19–26	5	3
Japan, Kobe	Feb. 29–Mar. 7	79	47
Nagasaki	Feb. 24–Mar. 15	8	1
Osaka	Feb. 29–Mar. 7.	292	100
Java, Batavia	Feb. 15–22	4	.
Mexico, Aguas Calientes	Mar. 22–29	.	2
Matamoras	Mar. 28–Apr. 4	4	.
City of Mexico	Feb. 15–22	.	6
Vera Cruz	Mar. 14–21	3	.
Russia, Libau	Feb. 14–21	2	..
Moscow	Feb 20–Mar 14	56	24
Odessa	Mar. 14–21	3	..
Riga	Mar. 17–21	6	..
St. Petersburg	Feb. 29–Mar. 14	44	11
Warsaw	Jan. 18–Feb. 1.	.	23
Spain, Denia	Mar. 14–21	6	1
Valencia	Mar. 15–22	25	4
Straits Settlements, Penang	Feb. 15–22	1	..
Turkey, Bagdad	Feb. 15–22	42	9
Constantinople	Mar. 8–15	.	3

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Original Articles.

THE CANCER PROBLEM.*

BY EUGENE COLEMAN SAVIDGE, M.D.,

NEW YORK.

"It must be confessed that in spite of the time, brains, energy, and money which have been expended during the past few years in the attempt to solve the problem of cancer in almost all parts of the civilized world, little or no apparent progress has been made."—Editorial, MEDICAL RECORD, June 29, 1907.

The present writer is as orthodox as any member of this society regarding the prompt operation for surely recognized malignant disease. He is not alone, however, in asking whether life is really prolonged by surgery in some cases, notably in malignant diseases of the uterus. Nevertheless, the majority of the profession at present, for the lack of better resource, advise prompt operation. But, because such provisional attitude is apt to grow into a habit during the years when we are losing our plasticity, is just why we should keep additionally alert to other possibilities,—while not wavering in the best we have.

When your Chairman drafted me for this paper it was my intention to present you the sifting from a wide range of reading. I have not found time to do this; instead, I shall try to ask some questions which will bring out your experience in the discussion.

This society will probably agree as follows regarding the state popularly known as cancer. (The subdivisions will litter and obscure our discussion):

1. The quotation heading this paper has accurately stated our present relation to the problem of cancer.

2. That researches as to cancer cause based on bacteriological transmission—to go into detail—have yielded no result. Therefore nothing can be expected from either antiseptic or antitoxin treatment.

3. That even if the theory of wandering cell from embryonal life were capable of proof, such proof would give us nothing of value in treatment. We could never penetrate fetal life and anchor the displaced or wandering cell.

4. That though surgery has done thoroughly clean work, at least in uterine cases, it has been followed with prompt recurrence and speedy death.

If this society does so agree it must necessarily hold that our present resource, while the best we have, is unsatisfactory; and that our position, while not abandoning our best and time-honored resource, is one of "hopeful expectation."

Notwithstanding the foregoing statements, the writer believes there are signs of promise important enough to merit studied consideration. We have an indication of the cancer cause. We have a sane hope, confirmatory of this indication, regarding the successful treatment of cancer. This indication, which becomes more conclusive the more we study it, lies in the physical variation in the isomeric quality of the most primitive elements entering into the composition of protoplasm. (The isomers, let us refresh our minds, are "substances having the same centesimal composition, but whose molecules have essentially different structure and chemical properties.")

The trail of our search, therefore, leads directly to the subtle mystery why elemental carbon exists as coal and as diamond; or why certain substances are, under varying conditions, dextrorotary and levorotary—diverting the rays in one quality to the right, in another, to the left—when submitted to polarized light.

The hope of successful cure lies in the restoration, or the preservation, of certain ferments the secretions containing which seem to be altered, or abolished, long before the human organism reaches the state of cancer. As the ptyalin of the saliva, for example, mysteriously changes starch into dextrin and sugar in a manner similar to the mysterious transformation of the isomers from right to left rotary quality, and *vice versa*, from one side of the polariscope to the other, this application of ferments to changed isomeric quality is an exact dovetailing between theory of cause and hope of cure. It may be added that it is not based upon so simple a procedure as the application of trypsin to the local manifestation of cancer. The writer doubts if the cancer problem will ever be solved by the application of a juice to a spot: or even the hypodermatic application of a ferment to the organism.

Without entering too deeply upon the great work on fermentation by Pasteur—beginning about 1860, passing through the crucible of indifference if not ridicule, but now fully entered into the warp and woof of medical knowledge—let us consider in outline its connection with cancer.

Pasteur discovered the dimorphism of the double tartrate crystal. One isomer in solution is dextrorotary in the spectroscope; the other is levorotary. That is, one of these varieties of the same thing turns the polarized light to the right, the other turns it to the left. As a laboratory test, to separate these two diverging forms of the same thing, they were subjected to certain fermentative tests. *The yeast plant ferment was found to act on the left isomer, while the ferment of the mold acted upon the right solution.* Please stick a pin in this fact; it has a vital bearing on what follows. The left-hand isomer, susceptible to the yeast ferment, is indifferent to the mold ferment; and the right-hand isomer, susceptible to the mold, is unacted upon by the yeast plant.

Another important point accented by Pasteur was the difference between the same thing—to use an apparent Hibernianism—according to its derivation. The difference between laboratory pro-

*Read at a meeting of the Section on Obstetrics and Gynecology of the New York Academy of Medicine, March 26, 1908.

ducts and the same substances derived from organic compounds was this: the natural organic products rotate the polarized light either to the right or left according to quality,—but always one way, to the exclusion of the other isomer. Or, as Duclaux, quoted by Beard, says: "Nature alone knows how to manufacture one isomer without making the other."

So much for the "asymmetry of the carbon atom and the nitrogen pentavalent atom,"—to quote the resonant technique. Now, Beard, building upon Pasteur's work, or independently of it, has discovered an analogous asymmetry in the organic as well as in the inorganic world. In certain fish and amphibians, he has found the existence of "two distinct and separate nervous systems in their life history,—the transient nervous system functioning for a time, then suddenly begins to fade away in slow degeneration."

This analogy in the organic world may be simply significant; it may not mean that cosmic laws act on the elemental compounds of the ganglionic protoplasm sufficiently to divert the rotatory quality; as, for example, the irritation of a nerve center has produced glycosuria. On the other hand, it may mean more. As the embryological development of the human individual passes from the simple cell all the way up the line, distinctly through the fish-life analogy (remember, surgery is sometimes necessary to close the branchial clefts remaining open after birth, as evidence of the time in the evolution of the fetus when it had gills like a fish)—so might it be within the same range of possibility that there is a similar asymmetry of the nervous system in fetal life as that found in certain fish by Beard. But this would prove too much for the present writer's exposition; it would throw part of the causation back into fetal life, and except as explaining fetal or adolescent cancers, would help us no more for practical curative purposes than the wandering cell theory of Conheim. I prefer to cite it as an analogy, that it may not disturb the brighter hope.

This asymmetry both in the organic and the inorganic compounds, like that of the two nervous systems, in the words of Beard, "is based upon the fundamental verity of the asymmetry of the carbon atom."

Now, if the carbon atom were symmetrical, and carbon existed only as diamond, we would freeze to death in winter. So with our food stuff. If the carbon atom should suddenly become symmetrical, existing only in its left-hand isomer while our digestive ferments attack only the right-hand isomer, or *vice versa*, we would likewise starve to death. With warehouses full of levoalbumins, levocarbohydrates, famine would still stalk the land, because our digestive ferments could no more change them into assimilable substance than they now can the granite of the mountains.

Further, and of transcending importance to life,—for without the fact there would be no life,—this very powerlessness of our digestive ferments to act upon the levoalbumins of the human body is perhaps the basal reason why the human stomach does not digest its own walls. Otherwise, like the anaconda engaged in swallowing his own tail, at the conclusion of each complete digestive act the individual would disappear in a cloud of his own dust and vapor.

Isomeric integrity may be the life principle; it is certainly the life principle which prevents self-digestion, as any stomach in condition would digest another stomach if put therein,—as we eat tripe, for example. In fact, this is Herbert Spencer's theory of nerve force: that "in nervous action the disturbance transmitted is a wave of isomeric change." In other words, our molecules vibrate from right to left, or the reverse, to produce nerve action. Should they stay wrongly right, or wrongly left, or stop altogether, it is not hard to presume disaster.

To assail isomeric integrity, therefore, may be to entail sectional death; and cancer undoubtedly is this.

The importance of the ferments of the body,—called here digestive, and including the opsonins of the blood,—is becoming daily clearer to the profession. They are the elements of assimilation, the agents of protection. Yet daily we have to explain to the laity that, when the secretions are locked up by fever,—when the ferments are not being secreted,—putting food requiring digestion into the alimentary canal is just like hiding meat particles between the teeth. There being no ferments to prepare it for assimilation, it carries with itself and gathers from about it, elements for its own decay. It is a toxin instead of a nutrition. Plus secretion it is friend; minus secretion, it is foe and poison.

But recently even further importance has been shown in the ferments. The opsonins in the blood are still acquaintances almost too new for men outside of laboratories to discuss. Yet we are sufficiently established in our knowledge to say that certain ferments in the blood make the germ palatable to the phagocyte, thereby assisting these latter to digest specific infections in the blood. We can talk about the opsonic index in furunculosis, in tuberculosis, in syphilis; we can almost definitely state that for each infection an opsonin ferment exists in the blood, which when in condition protects the organism by making that specific germ palatable to the blood scavengers—thereby assisting in the destruction of the infection. We even pretend to say that when the opsonic index for tuberculosis is below normal the patient *has* tuberculosis, even though no bacilus may yet be found. We are even injecting our products into the blood to irritate or stimulate the opsonins for the specific malady we wish to conquer.

I am able at this point to report a perfectly well authenticated opsonin cure of malignant tertiary syphilis of the most extreme type. A miner, afflicted with ignored syphilis, untreated until its malignancy crippled him, was stricken with smallpox. His employer, one of my own patients, himself having had smallpox, charitably nursed this double leper through the scourge. Recovery from smallpox left him permanently cured of his tertiary syphilis. The explanation then was that the smallpox germ had killed the great pox germ. The explanation is now simpler. The stimulation of the opsonins by the acute infection brought a collateral stimulation of the opsonins of syphilis, and this ferment caused the cure of the man of a disease incurable in him at that time by drugs. Whether this was an accidental collateral stimulation of opsonins, or a direct stimulation, we do not know. But suppose we had always available a less objectionable but equally swift and efficient method, would not humanity greatly profit?

Please, therefore, let us revivify in our consciousness the absolute necessity of the ferments in making food really food to us,—selecting our bread from stone for us by practically the same process that Pasteur used in his laboratory years ago.

With sure selective instinct, keener than the scent

of the bloodhound, as imperious as the call of an acid for its base, these our agents of assimilation and protection stand at the portal of our being, and decide: this is right deflecting, this is left deflecting; this is bread, this is stone—saying to one, "Go ye into tissue"; and to the other, "Get you hence!"

Let us also make vivid to ourselves this conception of the protective and curative powers contained in these newly-discovered ferments in our blood. *All this is in vital relation with the cancer problem.*

In a paper read before the New York Obstetrical Society in 1903, the present writer said: "Women have lacerations, retained secundines, ectopics, fibroids, and cancers. And we operate on them brilliantly, with this or that technique, on whose minor details we spend much time in discussion. But in all these things—*I am not sure that I will except even the malignant troubles*—we get behind the outward symptom and arrive at first causes when we 'get them together' in the tubular system, as we clinch our fist, or contract our body when expecting a blow. We thus symbolize the great passion of the universe—the movement from circumference to center—'the love of a ton of lead for the center of the earth.'"

This reference to the malignant troubles was more than literary fervor. I had long pondered over the fact that cancer was locally but an exaggeration of normal cell tissue, as seen by the microscope. As the isomers may be defined as "the difference between the same thing," so cancer may be called an isomer of normal tissue.

Then, certain distinctly noted antecedents of cancer had forced themselves upon my attention in my opening professional days, when abundant clinical material was at hand. In most of the cancers I saw, the appearance of the patient suggested the diagnosis. Is this not a common experience with others? The local examination usually only confirms what we knew before we make it. When, then, did the pallor, the significant loss of weight, the distinctive physiognomy—the cancer family resemblance—begin with relation to the malignancy? This was my first self-questioning.

The diminution, or absence of the free hydrochloric acid in the gastric juice in cancer of the stomach was the next insistent point. Did this appear before the cancer? Had it any relation to the cancer cause? Or was it the result of malignancy, and why?

What caused the marked increase in saliva noticeable in cancer patients? The saliva has its ferment. Was this increase simply more water poured out in the struggle of the organism to bring up its supply of ptyalin?—just as we have more urine in advanced Bright's, in the effort of the organism to get out in this way the diminishing proportion of solid constituents. Or was it an actual increase in ferment production in the saliva? And did it precede cancer; or did cancer precede it?

What, too, had the thryoid gland to do with it? Why was the thyroid altered in cancer, and did the change precede the malignancy or come with it? We all know what subtle influence the thyroid gland, when given by mouth, has on the organism—how obesity melts away and the individual disappears fractionally from the landscape. Perhaps, like the fleeing obesity, it is the malignancy that is kept on the run by a vigilant thyroid in healthy individuals. Perhaps, in whole or in part, it is the slowly changing thyroid which allows the installation of the malignancy in the others: who knows?

Has this change in the thyroid any connection with the significant loss of weight? If we can accomplish this result with thyroid taken from an animal and administered by mouth, could not the thyroid within the individual by perversion cause this undue reduction in weight? If we saw in a patient with suspected malignancy a slowly gaining weight would we not give it a second consideration?

Graves' disease with its glandular—and hence ferment—relations, has always seemed to me to be a preparatory stage of cancer—the cure either averting the cancer, or the severity of the preparatory stage killing the patient before the culmination is reached.

Just as the spleen is charged with certain obscure relations to pernicious anemia and leucocythemia—as grave as cancer—so may the spleen, pancreas, as well as the ductless and intestinal glands, be said to bear an equal relation to the malignancy of cancer.

Indeed, noting the frequency of sarcomatous growths in the bone marrow in pernicious anemia, who can say whether a given case may not have been first a bone-marrow cancer, or even a blood-cell cancer before it became pernicious anemia? If this is not the order, the reverse order is equally convincing. For if pernicious anemia prepared for cancer, this proves a step in the march toward cancer—for the arrest of which there is certainly hope.

I have elsewhere cited a significant seeming relation between ferment secretion and another disease,—presenting an analogy with the present discussion. If adrenalin released into the blood causes the arterial tension observable long before the ensuing Bright's disease is shown in the urine, may there not be a relation between this release of adrenalin and the suppressing of the selective action of the ovaries, as seen in patients after double ovariotomy? Testicular inactivity, in presenility of the other sex, has also seemed to show the same relation to arterial tension long before urinalysis shows a reason in the kidney.

Let us, therefore, not lose the vivid realization that all these glandular activities have to do with the ferments upon whose integrity depends our life. It is a sane hope that such glands, showing incipient failure, can be restored to full integrity.

That we do know a force that will cure some cancers and cause some cancers I believe will be denied by no man in the profession. This is one thing known. A second thing known is the action of this force upon the ferments. We have thus two known links in the chain.

With the mighty uplifting of the veil during the last decade few more important hidden things have been revealed than *x*-ray and radium. The exact relation of these two rays to each other, to the sun, and to polarized light, we do not know. May we call these occult powers of light, cosmic, telluric, or radial? This much at least we know: the sun, the *x*-ray, and the radium ray—this occult radical force—both cure and cause diseases, and each acts significantly upon the ferments.

The solar action upon fermentation is embodied in the proverbs of all the languages: "Where the sun comes the doctor shuns; mold is found on the shady side, etc." But this, like many of our other half-truth complacencies, will need readjustment.

Briefly, this "radial" force can cause disease: Blonds can not live in the tropics; they lack a curtain of pigment to shield their blood cells. Qui-

nine has been found to have opalescent qualities which rob the plasmodium of light required for its existence. Hence, this quinine-bestowed curtain to the blood cell containing the plasmodium, explains backwards and forwards why quinine is good and sunlight bad for malaria. (Remembering what has already been said about pernicious anemia, why may not this anemia with its blood cells uncurtained by hemoglobin allow too great a radial action from the sun upon the protective epsonic ferments, and if only by their destruction and no more direct action, aid in the mysterious change in isomeric quality?) Recall the burns caused by the *x*-ray; the inhibiting action on the procreative glands, etc. In the *Annals of Surgery*, November, 1907, is a thorough study of the increasing list of *x*-ray carcinomata. See also Osler's "Modern Medicine," Vol. I, pages 63 and 64, for data regarding gangrene and cancer from *x*-rays, as well as injuries following exposure to radium.

With equal brevity let us look at the side of cures from the occult radial forces. There are apparently more cures than hurts.

In the *Berliner klinische Wochenschrift*, April 1, 1907, Widmer reports the cure of a carcinoma by repeated exposure to the direct rays of the sun. Radiotherapy has been employed with success in pernicious anemia by Grego of Geneva. (I ask again, how can we know it was not marrow cancer?) The *x*-rays have also been used with success in similar conditions by Beaujard of Paris. (*Semaine Médical*, Nov. 17, 1907, page 202.)

Dr. Robert Abbe, in the MEDICAL RECORD of October 12, 1907, presents an extended paper on the subject of cures by radium and its influence on animal and bacterial life. For example, dry seed exposed to radium has its growth retarded after planting, according to the time of exposure. In animal life, meal worms are repressed in their life history cycle by radium, while their brothers and sisters, "unradiumized," complete several cycles as beetles, eggs, meal worms, etc. So likewise is bacterial life checked or destroyed.

This radial action—of sun and ray and ray—is probably in the direction of a cure when it acts repressively on the noxious bacterial (or ferment) life. It is probably acting in the direction of hurt when it destroys our assimilative and protective ferments.

Our conception does not require that it act directly as a changer of isomeric quality—though it probably can do this as easily as the sun draws pigment—for it is easy to see how it reaches the same result indirectly when it destroys the ferments which would otherwise digest the noxious isomer.

Proven beyond all cavil, however, is the existence of this occult force which brings both hurt and cure. We know that it acts on the ferments; we know that ferments destroy one isomer and allow the other to remain untouched; we know then that it thus acts at least once removed on isomers.

We know what the force does, pro and con; but we have not yet succeeded in bridling it so that it will always act pro and never con. This may be our next success when we have learned its relation to isomeric integrity.

But that one known force can thus act pro and con presupposes that other forces may so act.

This march of antecedents, in cancer has formed an intensely interesting chapter in my line of special study. For fifteen years I have been cautiously insinuating under the notice of the profession discussion of many minor and detached matters, that the thus printed word might be used in presenting an entirely new system of approach in medicine. This I have called "Synthetical Medicine," and have published in the MEDICAL RECORD, April 7, 1906.

Synthetical Medicine, the science of the unclassified, "assumes to recognize and postpone that eventual trouble, be it in heart, liver, kidney, or blood-vessel, which a grouping and study of present conditions will often show years before it takes place in its text-book form; . . . it asks, what trouble in addition to the text-book classification, has the patient?"

The profession has not understood this, nor considered it very important, nor shown much interest; but I cite it here to show the formed mental habit which brought this march of antecedents in cancer under my notice.

The extent of my debt in this special subject of cancer to the suggestions of Beard and Bell is apparent. But the conception herein differs widely from that held by either.

If the asymmetry of the carbon atom causes one form of the same thing to assume a right rotary quality and another form a left rotary to the polarized light; if one of these quailties is assimilable under our digestive ferments, is acted upon by our protective ferments, and the other is not; if the cell proliferation of cancer is simply an exaggeration of normal cell proliferation,—either of opposite isomeric quality, hence insusceptible to our ferments: or of the same quality, and undisciplined by our ferments because impaired—then, whatever deflects our protoplasm from one isomer to its opposite, or impairs the quality of our protective ferments, may be said to be the cause of cancer, long before its local manifestation. And whatever deflects this malign isomer to its benign opposite, or whatever restores the integrity of the failing ferments,—long before the local manifestation—may be said to be the cure for cancer.

If the radial forces—the sun and ray and ray—even if not acting directly upon the carbon atom in our protoplasm, act repressively on our protective ferments, thereby allowing the wrong isomer to flourish into exaggerated cell life like the rank foliage of the tropics, then the "radial" forces may be said to cause such a cancer.

If pigment absorption, hair graying, hemoglobin disappearance, allow the radial forces to attack the cancer opsonin among the thus uncurtained blood-cells, then here is a more remote cause of cancer.

Conversely, if we can shield our protective ferments from the destructive radial forces, and at the same time expose our noxious elements thereto, the radial forces may be said to cure such cancers.

If a perverted thyroid, withdrawn from its mysterious guardianship against wrong isomers, leaves them to flourish like weeds in the absence of the gardener, while the recreant gland disrobes the skeleton of flesh, then perverted thyroid is another cause of cancer. And conversely, the restoration of such a thyroid is the cure for cancer so produced.

But whether one item, or all, whatever restores glandular activity, replaces the disturbed ferment protection, restores the isomeric integrity,—that item, or aggregate of items, thereby cures the cancer.

The incipient cause, the study of the march of antecedents, the application of the cures, all lie in the domain of Synthetical Medicine.

The use of trypsin for the cure of *developed* cancer as Beard says, "fits like a key in the lock" with the theory outlined above. Beard's idea is not its local application, but the overwhelming the sys-

tem with it hypodermically. Many careful men are trying this and I believe a fair view of their conclusion is that trypsin does not cure the cancer.

That trypsin may fail even in most developed cases would not nullify the importance of its testimony if it succeeds in any. For if it has any power over the local manifestation of cancer—aside from a certain digestive action such as pineapple juice might have on thickened mucus in the throat,—it proves that the excessive cell proliferation by being susceptible to the ferment, contains a carbon atom of that isomeric quality acted upon by that ferment—and not of the opposite quality. This is as sure a test as our test for albumin and sugar. Here, then, is light; here is differentiation; here is invitation along a new line of research.

For while medical humanity may prefer a sign, a specific, a single "distinctly defined" process of application, we must not hope always to have given us such a definite entity as we received in the antitoxin for diphtheria, for example. It is doubtful whether we shall ever be able to apply a juice to a spot, merely, and cure a cancer. Nor can we hope to secure a single injectable curative juice. How simple this would be for the man who had the juice! The very theory of the complex causes of cancer is against this hope. But if we can increase the opsonin ferments, stimulate a phagocytosis, and thus make a man's blood corpuscles eat up his own cancer; or if we can stop the change in the thyroid, the alteration of the saliva, the gastric, pancreatic, and intestinal juices, the ominous loss of weight, the ghastly robbery of the hemoglobin curtain for the cells of the blood, there may still be additional help from the injectable juice, or from the local juice at the local spot. But the source is more important than the local manifestation.

This conception of making an element in a man's blood eat up his own disease, though hardly born to the medical profession, probably points the line of our future march. But to use this new possibility we must see things earlier than we are wont under our present methods, which teach us to see only the accomplished fact and blind us to the widely scattered preliminary stages. It is only when these are finally focused that they realize our textbook descriptions.

For example, though all medical men may not agree, I firmly believe that the more skilful among us can foretell the advent of tuberculosis long before the bacillus gives any sign of its presence. A rougher, cruder diagnostician, who must have his hectic, cavity, and bacillus, before he can see the tuberculosis, naturally is limited to short range procedure. He is more of a prognostician than a diagnostician. He can foresee death more clearly than cure. His resources are climate, overfeeding, and creosote,—frequently helpful; but far removed from what might have been done had the earlier picture been seen—the falling opsonic index, the wasting muscles, the depleted vitality, the unfair nutritive division,—the bulk of the nutrition going to the brightly burning nervous system, with the lower forms of tissue slowly starving, as the sappers and miners prepare the soil for the seed. *We should infer the harvest when we see the plow.* This is Synthetical Medicine.

If cancer, therefore, is the climax of a synthetical progression, finally showing itself locally, we may be able to avert it when so understood and so attacked. Perhaps this has been done.

I would not dare report seriously to this Academy what I honestly half-believe: that these beginning changes have been seen and have been purposefully attacked, and the cancer has been averted. But this is a fair report: Patients with all the preliminaries have been restored to health. But of course there is no proof that cancer (uterine, is the special reference), would ever have culminated.

But this, too, is a fair report: If any man hereafter sees a patient with these detailed preliminaries of cancer state—long before the patient has the disease classified in our text-books—and does not purposefully wipe offending item after item off the slate, such a man is not protecting his patient as he should.

To accentuate the relation of the general condition to cancer, let me continue from the quotation begun at the head of this paper:

"There are five distinct groups of malignant tumors, and Mr. Sutton draws attention to the fact that in dealing with these tumors, the position is such that we are unable to point to any absolute histological indication of malignancy, *and that clinical and histological characters must be considered together.* Microscopic examination, even when conducted by the most expert microscopist, can not determine with precise certainty whether a tumor is malignant or not. 'The true character of such tumors can only be determined by careful observation of the patient.'"

Dr. Robert A. Murray, before the New York Obstetrical Society, November 12, 1907, quoted authorities on this same fact. Many cases of fibroids show precisely the same microscopy as cancer.

Prof. James Ewing, at the last meeting of this section, February 6, 1908, quoted authorities who characterize chorioepithelioma as varying so much in significance that at one extremity it is criminal to operate because it is so benign as to recover sometimes spontaneously; while at the other extremity it is criminal to operate because it is so malignant that the end is hastened by operation.

These facts are vitally significant. The same microscopic slide, therefore, which, plus history of unimpaired general condition, would bring a benign verdict, becomes cancer when pinned to the history of cachexia. *The cachexia is the cancer,* therefore. For a broken down and infected fibroid, like an infected leg, is only a surgical problem of infection and suppuration, or of gangrene from compression—it has no relation to the general problem of impaired ferments, isomeric integrity, plus a local malignancy.

"An ounce of prevention is worth a pound of cure," and "keeping in good condition," as a basis of this theory is as fatuous a conception as would be futile the efforts of the man lazily adopting it. On the contrary, it implies direct, purposeful attack upon a start toward a definite and fatal end: it is by no means a good-natured, tolerant, passive state of ordinary hygiene.

Human limitation implies that we rarely see or hear the obscure upon which we have not had our attention concentrated. Our experience, as embodied in the answers to the following questions, may therefore be no experience at all, unless we have specially directed our attention to the points involved. I respectfully solicit the wisdom of the profession upon the following points:

1. Who have seen cancer develop in patients that have been under observation, say a year before the cancer became unmistakable?

2. What has been the relation observed between the cancer and the cachexia? What observations have been made of the various secretions? When did the glands begin to fail; when did the weight loss begin? etc.

3. This question is preceded with an avowal that no desire exists to discredit surgical methods. Restricting the question to uterine cases, what is the honest conviction of those with the experience regarding the quick and possibly more virulent return of the malignancy after operation? (Perhaps those who operate most frequently are the least qualified to say how long life might have lasted without an operation, as they do not know this side. The excellence of their equipment in one direction is the measure of their limitation in the other.) Yet the strictest estimate is necessary on this point, for if there is anything in the new trend, surgery may be the worst thing to do to a cancer. Like the potato which would grow but one plant as a whole, subdivided grows a plant for each eye—like cell segmentation, like sowing parts each capable of reproducing the whole—cutting may be simply spreading elsewhere the local manifestation.

Quite on the other hand, if it be true that the only nonrecurrences of cancer after surgery are found with those who were operated upon before the advent of cachexia, *then the new trend all the more imperatively demands even prompter surgery.*

Starting, therefore, with the frank admission that nothing as yet has been accomplished; still clinging to our best procedure of surgery, is there not reason to consider this sequence with scientific openness of mind?

A certain known, but not understood, "radial" force can act upon products containing the asymmetrical carbon atom to change their isomeric quality as shown by polarized light. That one force can so act presupposes that other forces may so act.

The natural ferments contained in the secretions of the body, digestive and protective, "digest" one series of isomers and leave the opposite series untouched. Therefore, the action of this occult "radial" force—this assailing of isomeric integrity,—can change protoplasm from digestibility to indigestibility to the natural ferments, and *vice versa.*

The local cancer product consists presumably of changed isomers allowed to grow instead of being "digested." This is made all the more probable by the disappearance of the opsonic ferments in the blood in all such diseases as have been subjected to controlled observation; and, specifically in cancer, by the gradual suppression of the enumerated ferments. These ferments—presumably—begin to modify long before transition from the preliminary to the final state called cancer. Therefore, even if there be no change in isomeric quality, the secretion suppression would explain the growth of the cancer weed cells that effective ferments would have removed.

If there be no flaw in these significances, the cure for cancer as well as its prevention, lies in the realm of Synthetical Medicine, to which the attention of the profession is again respectfully directed.

If the foregoing seems as radical as some of my earlier papers, I beg that you will pardon this almost unpardonable reminder:

Ten years ago before this Academy, alone in the profession so far as I know, I had the temerity to say regarding overzealous abdominal operations almost precisely what Dr. Boldt, at our last section meeting, outlined to you in reviewing "the recent advances in gynecology."

The adverse reception first given this presentation, and the cordial welcome greeting it ten years later, are alike matters of record.—both gratifying and instructive.

66 West Fiftieth Street.

THE EFFECTS OF URBAN CONGESTION ON ITALIAN WOMEN AND CHILDREN.*

By ANTONIO STELLA, M.D.,

NEW YORK

In dealing with the effects of urban congestion on Italian women and children in America, it is impossible not to begin a little farther back than the title of this paper implies, and consider first what degree of congestion exists among them and to what extent overcrowding prevails in certain Italian quarters.

Every one is familiar with the unhygienic and overcrowded condition of the dwellings of Italians in the large cities of the United States. It is a well-known fact that they reside in the poorest quarters and in the slums, so-called, not because they like to be there, but because their poverty compels them to live there. They have nothing, in fact, in common with the slum population proper, nor do they bring or contribute any of the degrading characteristics of the professional vagrant or tramp which we meet among the "people of the abyss." They live there because many times also their work is there. So in New York we find them on the streets adjacent to the Bowery, Mulberry Bend, "the Lung Block," old "Richmond Hill," "Little Italy," or way up in the Bronx. In Boston we find them in the "North End" and in the neighborhood of Hanover Square. In Chicago they occupy chiefly the Nineteenth District, South Clark street, Dearborn street and West Madison; in New Orleans, "Little Palermo" and the old French Quarter, and so on in Philadelphia, Buffalo, Denver, and elsewhere.

Without here repeating the results of the more general inquiries made in that connection by the Tenement House Department of New York, the South End House of Boston, the "Octavia Hill Association" of Philadelphia, Hull House and the City Homes Association of Chicago, and others which every one may consult, I will simply quote a few recent data gathered by myself and by the Committee on Congestion of Population, with the assistance of the Italian government, whose interest and generosity towards its expatriates stands unparalleled in the history of emigration. They will give you an approximate idea of the almost incredible conditions in which the greater part of our people live in New York.

Two typical Italian blocks have been investigated by this Committee, besides 174 families scattered throughout the lower part of Manhattan, and some two hundred houses visited by myself in the last two years on account of the occurrence of tuberculosis, or other diseases, which brought them to my attention. The first block investigated is the one in Harlem bounded by East 112th street, East 113th street, First avenue, and Second avenue; the second block is the one down town bounded by East Houston, Prince, Mott, and Elizabeth streets. The results of this investigation have been shown at the Exhibit (of Congestion of Population) by statistics, photographs, and diagrams. I shall not relate here in detail all the valuable information gained from this house-to-house inquiry, but shall mention only a few of the salient points which have a direct bearing on our subject, and from them you can draw your own conclusions.

*Read at the Conference on Congestion of Population, held at the Museum of Natural History in New York on March 10, 1908.

Of the families examined, 18 per cent. occupied one room, and 34.4 per cent. only two rooms, showing a condition much worse than the average on the East Side, where a family consists of seven persons living in three rooms, three members being at home, two at school, and two at work. In the "Barracks," as that portion of Elizabeth street between Houston and Prince is known to the police, less than three out of every hundred families had five rooms, and yet, as if one and two rooms for a family were overabundant, about one-third of the families had one lodger, 41 per cent. two lodgers, 16.5 per cent. three lodgers, and 3.1 per cent. four lodgers. Thus, counting two children under twelve as equivalent to one adult, one-sixth of the rooms in this block were found to be housing as many as four adults each.

In the same block the great majority of the families are paying over 25 per cent. of their income in rent, and some families over 50 per cent.; in most cases the number of cubic feet of air for the occupants of sleeping rooms was less than is provided in hospitals and prisons, and the mixing of sexes in sleeping rooms, though not common, was discovered in a number of cases. (In one case five men and seven women were found sleeping in three rooms, though it was impossible to judge how they slept.)

Out of the 174 families investigated in scattered portions of Manhattan, only seventy-one were not overcrowded. The rest had from two adults and one child per room up to five adults regularly occupying the rooms. Of this number, there were thirty-two one-room apartments, sixty two-room apartments, fifty-one three-room apartments, twenty-six four-room apartments, and five five-room apartments. One hundred and thirty-five had lodgers, some of them as many as five and six. The moral condition can better be imagined than described.

The results of my own investigation in some other parts of the city were just as startling. On Third avenue, near Twenty-sixth street, a family of eleven—four adults and seven children—and three clerks were living in a dark middle room, and a large, bare, rear room, an average of seven people to the room. In the section of the Bronx, bounded by East 148th and East 153d streets, Morris, Cortlandt, and Park avenues, I found some of the very worst conditions. In a rag shop on Morris avenue there were no less than eighteen people, men and women, working, eating, and sometimes sleeping, and in one double, new-law tenement in this district I found 1,100 people, divided in 130 apartments, not counting all the night lodgers.

Justice demands that I should say at once, in this connection, that there is an enormous difference between the various Italians, and while those of the North seem to have a higher sense of personal dignity in the selection of their homes, the immigrants of the South, especially the peasants from Sicily, Calabria, Basilicata, and Abruzzo, without exception, live in the most overcrowded and unsanitary condition.

How can health be preserved under such circumstances? When we stop to consider that nine-tenths of the Italian immigrants arriving in the United States come from rural districts, and less than one-fourth settle in the country, the large majority (77.2 per cent.) of them crowding the large cities, the evils of urban congestion attending on this rural exodus cannot be too strongly emphasized. For, while we are all agreed that urban life lowers the physical standard of the people and is detrimental to the national physique, few of us are aware that this injury is more profoundly and more extensively felt by the robust peasants, than by the thin and pale city dwellers.

Whether it is that the abrupt transition from rural to city life does not give the nomad people, so to speak, accustomed to an outdoor existence, time to prepare and elaborate sufficient means of protection against or adjustment to the new environment—special enzymes or opsonins, or we do not know what, that all animals and even plants develop when transferred to a new environment; or whether it is that the very high tension to which the nervous system is subjected by city life, often accused as a factor of disease, is in reality the mainspring of that hyperacuteness and overactivity of all our functions, which braces the system constantly to a higher degree of vigor and vitality—it is certain that death and diseases are more prevalent among the rural people settled in cities, than among the city people themselves, in spite of the more robust appearance of the former. The example of the Indians, of the Negroes, of many savage people, and presently of the Italians in America, furnishes an irrefutable proof of this fact.*

We have no extensive data for New York like those gathered by Körösi for Budapest and Vienna, comparing the death rate and the overcrowding per room, but it will be interesting to quote here a statistical table arranged on this basis for the inhabitants of Lausanne by Prof. Niceforo,† the results of which would surely apply just as forcibly to New York.

Rent of Twenty-five Apartments in Lausanne expressed in Francs	Death Rate for 1,000 Living	Cubic Meters of Air Space available for Each Lodger on the Total Number of Rooms
250	34.6	26.1
293	26.7	26.4
328	14.6	30.5
345	23.7	34.3
353	19.6	34.4
380	21.6	30.2
384	17.2	30.4
401	20.5	31.8
414	15.7	39.5
418	22.0	36.5
419	23.4	32.5
442	23.0	30.0
476	15.1	33.6
517	18.8	45.4
673	11.4	45.2
680	13.0	52.2
717	27.0	29.8
800	23.4	60.6
819	13.1	59.5
856	15.4	53.7
900	11.5	60.7
1,016	14.6	66.2
1,192	13.9	64.9
1,392	10.0	59.6
1,490	11.8	84.4

The intimate relation that exists between the quantity and quality of air respirable for each individual and the amount of diseases and number of deaths resulting therefrom, is too evident and has been too exhaustively studied by hygienists to need repetition. Lagneau has shown, from statistics collected from 662 cities in France, that the denser the population the greater is the number of deaths from tuberculosis. "Thus, while the death-rate per 1,000 of the population from this cause, in cities of 5,000 inhabitants, was 1.81, in cities of

*I called attention to this apparent paradox two years ago in a paper I read at the Congress of Tuberculosis in Milan, noting the prevalence of consumption in New York among the contadini of Sicily and Basilicata, in preference to the former citizens of Naples and Palermo, and I have seen with satisfaction the same views confirmed since. (Dr. Norburne Jenkins, MEDICAL RECORD, February, 1908; M. de Fleury, etc.)

† Les Classes Pauvres.

10,000 inhabitants it was 2.16, in cities of 20,000 inhabitants it was 2.71, in cities of 30,000 inhabitants it was 2.88, in cities of 100,000 it was 3.05, in cities of 450,000 it was 3.63, and in Paris, with upwards of three million inhabitants, the death-rate per 1,000 of the population rose to 4.90." From the Report of the Health of Towns Commission for Great Britain it appears that the ratio of phthisis and other similar diseases in Dundee, Scotland, increases with the overcrowding in dwellings. "Taking the ratio of dwellings of four rooms and upwards as 10, it was found that the other ratios were: For three rooms, 17; for two rooms, 20, and for one room, 23. The same thing has been observed in London. According to the Annual Report of the Medical Officer of Health in London, 1898, in districts with under 10 per cent. of overcrowding (overcrowding being taken to mean where more than two persons occupied a room in tenements of less than five rooms) the death-rate per 1,000 living from tuberculosis is 1.10; in districts with under 15 per cent. overcrowding it is 1.43, in districts with under 20 per cent. overcrowding it is 1.61, in districts with under 25 per cent. overcrowding it is 1.80, in districts with under 30 per cent. overcrowding it is 2.07, in districts with under 35 per cent. overcrowding it is 2.42, and in districts with over 35 per cent. overcrowding the death-rate per 100 living from consumption is 2.63. Similar observations conducted for the four years previous to 1898 showed the same obvious relation between the amount of overcrowding and the phthisis death-rate."*

The tables arranged by Dr. Herman Biggs, of the New York Health Department, are very illuminating on this point, and must be reported in full here:†

PHTHISIS.

DEATH RATES PER 1,000 LIVING, 1894–1898, INCLUSIVE.

Proportion of Total Population Living More than Two in a Room (in Tenements of Less than Five Rooms)	Death Rates per 1,000 Living				
	1894	1895	1896	1897	1898
Districts with under 10 per cent....	1.07	1.18	1.07	1.14	1.10
" " 10 to 15 " "	1.38	1.49	1.46	1.42	1.43
" " 15 to 20 " "	1.57	1.64	1.61	1.63	1.61
" " 20 to 25 " "	1.58	1.83	1.67	1.75	1.80
" " 25 to 30 " "	1.81	2.09	2.06	2.10	2.07
" " 30 to 35 " "	2.11	2.42	2.13	2.32	2.42
" " over 35 " "	2.46	2.66	2.55	2.64	2.63

This table shows an obvious relation between the amount of overcrowding and the phthisis death-rate.

PHTHISIS.

DEATH RATES PER 1,000 LIVING, 1898.

Proportion of Total Population Living (in Tenements of Less than 5 Rooms) More than Two in a Room	0	5	20	25	35	45	55 and Upwards
Dists. with under 10%....	0.23	0.39	1.19	1.50	1.94	2.05	1.77
" " 10 to 15 "	0.39	0.34	1.44	2.13	3.09	2.68	1.91
" " 15 to 20 "	0.62	0.30	1.05	2.01	3.41	3.43	2.36
" " 20 to 25 "	0.57	0.37	1.59	2.39	3.66	4.01	2.78
" " 25 to 30 "	0.78	0.33	1.57	2.58	4.16	4.58	3.04
" " 30 to 35 "	0.81	0.49	2.00	3.00	5.58	6.26	3.26
" " over 35 "	0.85	0.50	1.82	3.25	6.04	6.12	4.41

It will be noted from these tables that in the most overcrowded districts the mortality from phthisis is more than three times that obtaining in the least crowded territories.

The death rate and the rate of morbidity give the best measure of the effect of urban congestion on the health of the people. We shall consider separately the death rate and morbidity of Italian children first, then the death rate and morbidity of the women.

MORTALITY OF ITALIAN CHILDREN.

Through the courtesy extended by the President of the New York Health Department and the interest taken by Dr. Guilfoy, the Registrar of Vital Statistics, who has personally supervised the search and compilation of the figures here submitted—and to whom I wish to acknowledge publicly my indebtedness—I am able to present here to-day some very interesting data of the death rate of Italians in certain blocks of New York, classified by age and specified diseases. (It is the first time that this has been done by age-group for any nationality in Manhattan, and the results are extremely instructive and illuminating, in that we are brought face to face with the domestic and social conditions of the people studied in the same quarters at the present moment, the detailed investigation of which, omitted here for the sake of brevity, illustrates most forcibly the effects of overcrowding.)

The ten blocks suggested for the study of the death rate (see following table for details) were selected among others in the city because they contained a large number of tenement houses of the old and new law style, and were chiefly inhabited by Italians or people living under similar conditions to theirs. The comparison with the latter has proven most surprising, for while in certain blocks in the Italian quarter there is a very high death rate, in certain other blocks, half a mile away, in the Jewish quarter, the death rate is only one-half as great as the average death rate of the city, "yet in the latter district there is a greater population, the tenement houses are taller, and the general sanitary conditions are worse."

This once more illustrates the influence of the ethical factor in racial resistance to disease, which in turn—as in the case of the Jews—is due, less to religious restrictions, than to a certain immunity against the ills of urban life, acquired through long residence in cities.

According to those figures, we find, as you will see, by glancing at the appended table, that while the general death rate for the city of New York in 1905-06 for all ages was 18.35, and under five years was 51.5, in some of the various Italian blocks* here examined, was respectively:

BLOCK	FOR ALL AGES	UNDER FIVE YEARS
A	24.5	87.03
B	24.9	92.2
C	22.4	81.6
D	22.57	74.7
E	22.3	83.12
F	23.2	59.5

The death rate for 1905-06 for the entire city, and for those under five years in the Italian blocks, was as follows:

FOR ACUTE RESPIRATORY DISEASES	FOR DIARRHEAL DISEASES	FOR DIPHTHERIA
City death rate, 12.7	City death rate, 12.9	City death rate, 2.80
Italian Blocks	*Italian Blocks*	*Italian Blocks*
A.....32.9	A.....22.3	A.....4.34
B.....47.8	B.....19.1	B.....3.71
C.....35.3	C.....17.6	C.....4.61
D.....28.6	D.....13.8	D.....8.93
E.....49	E.....19.3	E.....3.20
F.....17.9	F.....14.9	

*For the sake of brevity we shall call block A, B, C, D, E, F, respectively, the following Italian blocks:

Block A—East 112th, East 113th, First and Second Avenues.
Block B—Mott, Prince, Elizabeth, East Houston.
Block C—East 114th, East 115th, First and Second Avenues.
Block D—East 108th, East 109th, First and Second Avenues.
Block E—East 106th, East 107th, First and Second Avenues.
Block F—Jones Street, Cornelia, West 4th and Bleecker.

*The Tenement House Problem, deForest and Veiller.
†Dr. H. Biggs: The Relation of Tenement Houses to Tuberculosis, *loc. cit.* Vol. I.

Dr. Guilfoy had already called attention to the disastrous effects of urban congestion on the health of Italians, and to the "cosmopolitan character of the New York population increasing the city death rate." If we compare the more recent data arranged by age-groups with his previous figures, we come to the same conclusion. This is what he had to say on the subject: "Under the rates from bronchopneumonia the most surprising rate of the whole table appears, the rate among Italian children reaching the enormous height of 710 per 100,000, more than two and a half times higher than that of American children. When we consider under what conditions the Italian families herd together, and the opportunities this affords for the spread of contagious and infectious diseases, the difficulties encountered by the sanitary officers can be imagined but not described. Think of seven tenement houses with a population of 1,500 of a square block that by actual count harbors 5,100 souls, surrounded by other blocks harboring an average of 2,000, and you obtain an idea of the necessity for eternal vigilance on the part of the health officials."

Further on he says: "The lobarpneumonia column reiterates the story as to the Italian national predisposition to disease of the respiratory tract; here the Italian leads, with none of the others a close second. In the typhoid fever column, omitting rates whereof the number of deaths do not reach twenty, the Italians and Austro-Hungarians have the highest mortality; under the heading *measles*, we notice that the Italian children have a *mortality of almost five times* that of the entire city, the Italian children show the highest mortality from *scarlet fever* and *whooping cough*, with the Hebrew children a close second. The mortality from diarrheal diseases among them is double that of the Austro-Hungarian, and treble that of the average for the entire city." (MEDICAL RECORD, January 5, 1908.)

In the presence of such startling figures, we cannot fail to notice at once the deleterious effect of city life and overcrowding on the appalling mortality of Italian children; the preeminence of this factor is seen at a glance, when we notice that the greatest number of deaths is given by the infectious diseases, which are those most influenced by agglomeration, while the organic diseases (affections of the heart, kidney, etc.) show a very low percentage among Italians compared with other nationalities. (See the accompanying table prepared by Dr. Guilfoy and reprinted from the MEDICAL RECORD of January 25, 1908.)

The excessive death rate from acute respiratory diseases must be directly charged to overcrowding in the rooms and lack of proper ventilation during the course of the illness, rather than to atmospheric changes, as commonly believed. Modern investigation on the etiology of the diseases of this group has established without question that the exciting factor is a microorganism which requires such conditions for its growth and multiplication, as are usually found only in the living body. The infection, when it occurs, "must always be the result of communication directly or indirectly from one human being to another. The conclusion, therefore, seems to be justifiable that these diseases are essentially communicable." (Report of the Medical Committee for the Investigation of Acute Respiratory Diseases of the Department of Health of the City of New York, Part I, 1905.)

Diarrheal diseases bear also an intimate relation to "urbanization," and statistics all over the world prove that infant mortality from this cause is higher in the cities than in the country, and more so in the densely-populated districts of the same city than in the better quarters. Indeed, so marked is this difference, that Dr. Robertson, in an investigation made in Manchester, Eng., found that 98½ per cent. of the deaths from diarrhea had occurred in houses of five rooms or under, and only 1½ per cent. in houses of over five rooms."*

But the death rate is only one of the exponents of the effect of urban life on the health of the children. A study of their morbidity adds corroborative evidence to the one already furnished.

MORBIDITY OF ITALIAN CHILDREN.

It is very difficult to measure in exact figures the effects of overcrowding on the morbidity rate. We all know that it is considerable and most detrimental to the health of children, but we cannot produce the technical proof thereof, nor can we separate the many other elements (heredity, underfeeding, etc.) that are potent factors in the production of disease.

In the case of the Italian children, however—due exception being made of extreme cases of poverty, congenital defects, or child-labor for which we have tried to account in the present investigation—we are as nearly correct as one can be, when we assume that *the lack of fresh air and the congestion of bedrooms*, as it exists in the tenement houses of New York, are at the base of all their ills. The testimony given before the Interdepartmental Commission of England gave a new emphasis to this point, and it was amply proven that "the bad physic of the urban population is due to the deprivation of fresh air, which comes to be the distinguishing factor of physical deterioration." (Par. 4865-4871.) The birth rate, which is very high among the Italians of the first generation, must also be taken into account in explaining their high infant morbidity and mortality.

A. The percentage of Italian children suffering from rickets is exceedingly high (75 to 80 per cent.), in spite of the fact that many of them (65 per cent.) are breast-fed. Rhachitis is not a mere deformity of bones, but is the expression of profound pathological changes occurring in practically all the tissues of the body.

Due allowance being made for the defective composition of the mother's milk—which, in my opinion, is the principal factor of the prevalence of the disease, and which in turn reverts on urban congestion that diminishes the stamina of the mothers—overcrowding and bad housing in general seem to be the primary causative agent, even above the dietetic factor, which in the case of the Italians would appear to play only a secondary part. In fact, the Italian children brought up in rural districts are as badly fed, if not worse, than the children of the city, yet there is an immense difference in their physique. "Rickets is an unknown disease in Hammonton," writes R. J. Mead, referring to the Italian children of that community, "and there is no indication of anemia."† The prevalence of rickets is, in my opinion, the most potent factor back of the high mortality of bronchopneumonia of the Italian children in New York.

B. When we compare the general appearance and resistance of Italian children brought up in the healthful environment of the country and those in the city, more important differences are noted,

*Newman: "Infant Mortality."

†"The Italian on the Land," by Emily Fogg Meade, Bulletin 70 of the Bureau of Labor.

POPULATION,* DEATHS AND DEATH-RATES PER 1,000 AT DIFFERENT AGE GROUPS FOR YEARS 1905 AND 1906, FROM ALL CAUSES, DIPHTHERIA, ACUTE RESPIRATORY AND DIARRHEAL DISEASES (UNDER FIVE YEARS) IN CERTAIN SQUARE BLOCKS, CITY OF NEW YORK.

ITALIAN.—BLOCK NO. 1: 112TH TO 113TH STREETS, FIRST AVENUE TO SECOND AVENUE.

	Population		Total Deaths		Death Rate		Diphtheria		Acute Respiratory Diseases		Diarrheal Diseases	
	Male	Female	Male	Female	Male	Female	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 5 years	936	948	84	80	89.7	84.4	5	2.65	62	32.9	42	22.3
Total	1,884		164		87.03							
5 to 19 years	1,388	1,290	2	4	1.44	3.10	..	....	2	.74	.	....
Total	2,678		6		2.24							
20 to 44 years	2,420	1,882	24	17	9.92	9.34	..	....	4	.94	..	....
Total	4,302		41		9.54							
45 to 64 years	288	252	9	5	31.2	19.8	..	....	4	7.40	..	....
Total	540		14		25.9							
65 and over	10	12	1	5	100 0	416.7	..	....	1	45.5	..	.. ..
	22		6		272.7							
All ages	5,042	4,384	120	111	23.8	25.3	5	.53	73	7.7	..	....
Total	9,426		231		24.5							

ITALIAN.—BLOCK NO. 2: MOTT, PRINCE, ELIZABETH, AND EAST HOUSTON STREETS.

Under 5 years	540	610	49	57	90.7	93.5	5	4.34	55	47.8	22	19.1
Total	1,150		106		92.2							
5 to 19 years	950	1,004	2	6	2.10	6.0	..	....	2	1.02	..	....
Total	1,954		8		4.09							
20 to 44 years	1,194	1,260	11	3	9.2	2.38	1	.40	1	.40	..	....
Total	2,454		14		5.70							
45 to 64 years	226	260	9	9	39.8	34.6	..	....	4	8.21	..	....
Total	486		18		37.0							
65 and over	10	4	4	1	400	250.0		....	1	71.5	..	....
Total	14		5		357.							
All ages	2,920	3,128	75	76	25.66	24.2	6	.99	63	13.7	..	....
Total	6,058		151		24.9							

ITALIAN.—BLOCK NO. 3: 301–399 EAST 114TH TO 300–398 EAST 115th STREETS AND 2221–2237 FIRST AVENUE AND 2222–2238 SECOND AVENUE.

Under 5 years	580	498	41	47	70.7	94.4	4	3.71	38	35.3	19	17.6
Total	1,078		88		81.6							
5 to 19 years	836	824	7	5	8.37	6.07	..	....	1	.60	..	....
Total	1,660		12		7.23							
20 to 44 years	1,476	1,028	17	1	11.3	1.0	..	....	3	1.20	..	....
Total	2,504		18		7.19							
45 to 64 years	178	144	3	1	16.8	6.94	..	....	1	3.11	..	....
Total	322		4		12.4							
65 and over	6	10	2	1	333.	100.	..	....	1	62.5	..	....
Total	16		3		187.5							
All ages	3,076	2,504	70	55	22.8	22.0	4	.71	44	7.9	..	....
Total	5,580		125		22.4							

JEWISH.—BLOCK NO. 4: MADISON, HENRY, CATHERINE, AND MARKET STREETS.

Under 5 years	480	430	28	18	58.3	41.9	5	5.49	5	5.5	9	9.9
Total	910		46		50.0							
5 to 19 years	1,188	1,240	4	5	3.37	4.03	2	.82	..	....	..	....
Total	2,428		9		3.71							
20 to 44 years	1,570	1,370	14	10	8.92	7.30	..	....	..	....	..	....
Total	2940		24		8.16							
45 to 64 years	322	352	10	8	31.06	2273	..	....	..	....	..	....
Total	674		18		26.71							
65 and over	8	32	7	2	875.0	62.5	..	....	1	25.0	..	....
Total	40		9		225.							
All ages	3,568	3,424	63	43	17.66	12.56	7	1 00	6	.9	..	....
Total	6,992		106		15.16							

JEWISH, SOME ITALIANS.—BLOCK NO. 5: 195–219 FORSYTH, 119–133 EAST HOUSTON, 212–230 CHRYSTIE, 28–40 STANTON STREET.

Under 5 years	530	500	26	28	49.0	56.0	3	3.08	23	22.3	12	12.3
Total	1,030		54		52.42							
5 to 19 years	930	990	2	3	2.15	3.03	..	....	..	....	..	....
Total	1,920		5		2.60							
20 to 44 years	1,540	1,380	6	9	3.89	6.52	..	....	1	.34	..	....
Total	2,920		15		5.13							
45 to 64 years	280	320	7	3	25.0	9.37	..	....	2	3.34	..	....
Total	600		10		16.7							
65 and over	20	40	3	2	150.	50.0	..	....	1	16.66	..	....
Total	60		5		83.3							
All ages	3,300	3,230	44	45	13.3	13.9	3	.46	27	4.1	..	....
Total	6,530		89		13.6							

*The population in this table has been doubled to compute the death rate for two years, 1905-1906.

POPULATION, DEATHS AND DEATH RATES PER 1,000 AT DIFFERENT AGE GROUPS FOR YEARS 1905 AND 1906, FROM ALL CAUSES, DIPHTHERIA, ACUTE RESPIRATORY AND DIARRHEAL DISEASES (UNDER FIVE YEARS) IN CERTAIN SQUARE BLOCKS, CITY OF NEW YORK—*Continued.*

ITALIAN.—BLOCK NO. 6: 201–244 EAST 108TH, 200–244 EAST 109TH STREET, 2095–2109 SECOND AVENUE, 1967–1981 THIRD AVENUE.

	Population		Total Deaths		Death Rate		Diphtheria		Acute Respiratory Diseases		Diarrheal Diseases	
	Male	Female	Male	Female	Male	Female	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 5 years	556	528	43	38	77.3	71.9	5	4.61	31	28.6	15	13.8
Total	1,084		81		74.7							
5 to 19 years	800	736	5	6	6.25	8.15	2	1.30	1	.65	..	....
Total	1,536		11		7.12							
20 to 44 years	1,602	1,204	14	5	8.73	4.14	..	....	2	.71	..	....
Total	2,806		19		6.77							
45 to 64 years	170	192	10	7	58.8	36.4	..	....	..	...	..	....
Total	362		17		46.9							
65 and over	22	40	..	3	....	75.0	..	....	..	...	..	....
Total	62		3		48.4							
All ages	3,150	2,750	72	59	22 86	21.85	7	1.20	34	5.8	..	....
Total	5,850		131		22.57							

ITALIAN AND JEWISH.—BLOCK NO. 7: 201–299 EAST 97TH, 200–298 EAST 98TH STREETS, 1881–1895 SECOND AVENUE, 1751–1765 THIRD AVENUE

Under 5 years	752	658	41	42	54.5	63.9	5	3.54	22	15.6	17	12.1
Total	1,410		83		58.8							
5 to 19 years	1,170	1,016	4	4	3.42	3.93	1	.455	1	.455	..	....
Total	2,186		8		3.66							
20 to 44 years	1,794	1,522	20	21	11.2	13.8	..	....	3	.90	..	....
Total	3,316		41		12.4							
45 to 64 years	106	114	14	5	132.	43.5	..	....	3	13.64	..	....
Total	220		19		86.35							
65 and over	24	24	2	3	83.35	125.0	..	....	1	20.8	..	....
Total	48		5		104.2							
All ages	3,846	3,334	81	75	21.0	21.5	6	.835	30	4.2	..	....
Total	7,180		156		21.7							

ITALIAN AND COLORED.—BLOCK NO. 8: 2–36 JONES STREET, 1–37 CORNELIA, 164–174 WEST 4TH STREET, 157–277 BLEECKER STREET.

Under 5 years	144	192	9	11	62.5	57.3	3	8.93	6	17.9	5	14.9
Total	336		20		59.5							
5 to 19 years	414	398	4	..	9.66	....	..	....	.....	..	....	
Total	812		4		4.93							
20 to 44 years	748	634	11	13	14.7	20.5	..	....	2	1.45	..	....
Total	1,382		24		17.4							
45 to 64 years	260	186	9	8	34.6	43.0	..	....	6	13.45	..	....
Total	446		17		38.1							
65 and over	18	28	1	4	55.6	35.7	..	....	...	..	..	....
Total	46		5		108.7							
All ages	1,584	1,438	34	36	21.46	25.03	3	.99	14	4.6	..	....
Total	3,022		70		23.2							

ITALIAN.—BLOCK NO. 9: 301–399 EAST 106TH STREET, 302–398 EAST 107TH STREET, 2064–2078 SECOND AVENUE, 2051–2087 FIRST AVENUE.

Under 5 years	796	768	64	66	80.4	85.9	5	3.20	64	40.9	30	19.3
Total	1,564		130		83.12							
5 to 19 years	998	99.	2	1	2.0	1.0	..	....	..	....	..	....
Total	1,994		3		1.54							
20 to 44 years	2,152	1,678	16	11	7.40	6.56	..	....	7	1.82	..	....
Total	3,830		27		.10							
45 to 64 years	174	362	6	5	34.5	13.8	..	....	1	1.87	..	....
Total	536		11		20.5							
65 and over	8	14	1	3	125.0	214.3	..	....	..	....	..	....
Total	22		4		181.8							
All ages	4,028	3,818	89	86	22.1	22.5	5	.64	72	9.2	..	....
Total	7,846		175		22.3							

POPULATION, DEATHS AND DEATH RATES PER 1,000 AT DIFFERENT AGE GROUPS FOR YEARS 1905 AND 1906, FROM ALL CAUSES, DIPHTHERIA, ACUTE RESPIRATORY AND DIARRHEAL DISEASES (UNDER FIVE YEARS) IN CERTAIN SQUARE BLOCKS, CITY OF NEW YORK—*Concluded.*

MIXED.—BLOCK NO. 101: 501-547 EAST 13TH. 500-542 EAST 14TH STREETS, 210-224 AVENUE A, 216-233 AVENUE B.

	Population		Total Deaths		Death Rate		Diphtheria		Acute Respiratory Diseases		Diarrheal Diseases	
	Male	Female	Male	Female	Male	Female	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 5 years	524	482	43	34	82.06	70.5	6	5.96	12	11.9	27	26.8
Total	1,016		77		76.54							
5 to 19 years	1,016	1,020	3	6	2.95	5.88	..	...	3	1.47	..	....
Total	2,036		9		4.42							
20 to 44 years	1,596	1,434	15	11	9.4	7.7	..	....	3	.99	..	....
Total	3,030		26		8.58							
45 to 64 years	306	318	8	8	26.15	25.16	.	..	3	4.80	..	....
Total	624		16		25.64							
65 and over	20	20	5	4	250.0	200.0	..	...	4	100.0	..	....
Total	40		9		225.0							
All ages	3,462	3,274	74	63	21.38	19.24	6	.89	25	3.7	..	....
Total	6,736		137		20.34							

CITY OF NEW YORK—YEARS 1905 AND 1906.

	Population	Number of Deaths	Death Rate	Diphtheria		Acute Respiratory Diseases		Diarrheal Diseases	
				Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 5 years	472,667	24,539	51.5	1,327	2.80	6,019	12.7	6,076	12.9
All ages	4,088,780	74,958	18.33	....	....	....	....	....	....

and if we compare their average height and weight, as in the table here appended, we find an advantage of almost one inch and a half more in height and one pound more in weight for the childdren of the rural districts. Here is a table giving the average height and weight of Italian children in Turin, New York, and Hammonton, by sex and age. (Dr. Holt, "The Care and Feeding of Children," Meade, *loc. cit.*)

AVERAGE HEIGHT AND WEIGHT OF ITALIAN CHILDREN IN TURIN, NEW YORK AND HAMMONTON, BY SEX AND AGE.

Locality	Average Height, Inches						Average Weight, Pounds					
	Boys of Each Age			Girls of Each Age			Boys of Each Age			Girls of Each Age		
	5 Yrs.	7 Yrs.	10 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.
Turin	38.2	44.3	49.8	38.0	43.0	50.1	33.5	45.6	54.7	33.1	41.9	54.5
N. Y.	39.6	44.6	48.2	39.0	44.2	49.2	38.9	50.1	57.2	37.2	48.4	61.1
Hammonton	41.6	45.5	51.2	43.1	46.8	52.2	41.7	51.0	59.5	40.9	49.1	62.3

C. *Malnutrition* and *anemia, scrofula, adenoids,* and *poor dentition* are next to rickets, or concomitant with it, the most frequent pathological conditions met with among the children of the New York tenements. That they are the direct result of bad housing, and not heredity, is proven by the fact that almost all Italian infants are born strong and healthy, and their weight is often above the average even when their mothers look pale and sickly, and live in the poorest districts. This fact, besides, seems to be true of all poor classes, according to the evidence furnished by eminent obstetricians before the British Interdepartmental Commission (Dr. Alfred Reichholz, Dr. Malins, etc.)

Dr. Holt says that "one of the most striking things about children suffering from malnutrition is their *vulnerability.*" They "take" everything, and have but little resistance to the common infectious diseases of childhood. This applies most forcibly to the Italian children in New York, whom we see fall victims of one disease after another, and frequently sick for almost an entire season.

D. Had we been allowed to inspect this year's records of the physical examination of school children—for instance, in the public schools Nos. 21, 23, 8, or 172, all situated in thickly-populated Italian districts, I would now be able to tell you what proportion the Italian children contribute to the 70 per cent. of foreign born who are found suffering from one or another physical defects. But since this has not been possible—we hope the superintendent of the public schools will allow it some other time—permit me to extend the term child to the age of puberty, or a little above that, say twenty years, so as to include those whom we call the second generation of Italians. I shall then be able to furnish you with very interesting information

DEATHS AND DEATH RATE PER 100,000 ACCORDING TO NATIVITY

Countries	Population	All Causes		Typhoid Fever		Measles		Scarlet Fever		Whooping Cough	
		Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates
United States	568,746	7,951	13.98	85	14.9	101	17.8	46	8.09	51	8.97
Ireland	426,799	10,049	23.55	67	14.3	39	9.1	32	7.5	19	4.45
Germany	472,431	5,722	12.13	50	10.6	20	4.2	9	1.9	11	2.3
Italy	154,010	5,611	36.43	43	27.9	198	128.6	28	18.1	22	14.3
Russia-Poland	206,955	3,763	18.18	23	11.1	88	42.5	37	17.9	30	14.5
England	63,576	813	12.79	8	12.6	2	3.14	1	1.5	4	6.2
Austria-Hungary	107,828	2,523	23.40	26	24.1	35	32.4	14	13.0	10	9.3
Scotland	21,897	341	15.57	2	9.1	...	....	1	4.6	1	4.6
British America	11,631	156	13.41	2	17.2	...	....	....	....	....	....
Switzerland	7,592	144	18.97	...	....	....	....	....	....	....	....
France	14,046	305	21.71	5	35.6	2	14.2	....	....	....	....
Bohemia	19,222	338	17.59	2	10.4	6	31.2	....	....	....	....
Sweden	28,539	313	10.97	8	28.0	2	7.0	....	....	2	7.0
Mixed	309,668	3,795	12.26	30	9.69	87	28.1	35	11.3	40	12.9
TOTAL	2,464,432	46,108	18.71	369	14.9	662	26.8	212	8.6	202	8.2

regarding the poor physique of Italian boys in New York in relation to congestion.

I refer here to the data furnished by the physical examination of the Italian recruits at the Consul's office. Every year a great number of young men are examined in New York and in various consular agencies for military services. The number of rejections is very great, many times double and treble the ones in Italy. In 1906 11,396 young men of twenty or thereabouts were examined; 3,921 of them were rejected, and 7,475 were accepted, subject to reexamination in Italy.* In the years past a still higher percentage of rejections prevailed.†

Among the commonest causes of rejection are anemia and debility of the constitution, which implies no special disease, but just poor muscular development, insufficient height, defective chest expansion, and sometimes latent tuberculosis.

E. As to the prevalence of tuberculosis among the second generation of Italians, suffice it to say that it is most prevalent in all its forms, and while the pulmonary manifestations are seen most frequently above the fifteenth year of age, the surgical form (tuberculosis of the bones, glands, and joints) is met with extraordinary frequency between the ages of five and fifteen. We cannot measure in exact figures the extent of surgical tuberculosis among Italian children, but if we accept the testimony given by experienced physicians in large hospitals, and the evidence gathered from the records of many pediatric clinics and dispensaries in various parts of the city, we must admit that it is exceedingly common among them.

The autopsies performed in the few cases allowed of Italian children have also shown a corresponding frequency of peribronchial adenopathy.

I do not believe that there is need of further evidence to prove that city congestion is detrimental to the health and life of Italian children. That is a commonplace and obvious fact. But in the case of the women, the effects of congestion on their death and morbidity rate are a more difficult matter to measure.

*RECRUITS EXAMINED AT THE ITALIAN GENERAL CONSULATE OF NEW YORK AND DEPENDING AGENCIES DURING 1907.

	ACCEPTED	SUBJECT TO A SECOND EXAM.	REJECTED
New York City	4,655	871	1,237
Albany	778	100	132
Buffalo	682	101	206
New Haven	631	302	228
Newark	383	101	108
Providence	273	128	106
Trenton	73	11	7
Total	7,475	1,674	2,024

†In Italy the percentage of rejections ranges between 15 and 22 per cent., according to various provinces. In New York it is about 33 and 35 per cent.

MORTALITY OF ITALIAN WOMEN.

Studying the mortality of Italian women (and Italian adults in general) we are confronted with a peculiar contrast; the official statistics show a small death rate, especially in regard to pulmonary tuberculosis, yet we know—as all medical men, settlement workers, and others conversant with the situation know—that tuberculosis is very prevalent among them. The explanation of this discrepancy lies in the well-known fact that all adult Italians once affected by a serious disease, and so informed, board the first steamer and go back to Italy to die among the vines and orange groves. We cannot, therefore, gauge the mortality of Italian women from the tables of the Health Department, where they contribute only a small percentage (deaths from the very acute diseases, surgical operations, puerperal infection, etc.), but should count the wan-faced women that crowd the steerage of departing ships, or we should search the Bureaus of Vital Statistics of the little towns in Calabria or Sicily, where they swell the local death rate, and import from America tuberculosis where first it was unknown. The vast number of returning consumptives—both men and women—has taken such proportions of late that the Italian Government is considering special measures of quarantine both on board the ships and the point of debarkation. One little town in Sicily (Sciacca), whose inhabitants live in New York, all on Elizabeth street, between Hester and Broome streets, has established a small sanatorium on the outskirts of the city to receive the returning consumptive emigrants, so as to protect the rest of the population.

Studying the figures of those who return home from North America through the help of various benevolent institutions, we get an approximate idea of this phenomenon. The total number of those assisted with free passage from the Italian Benevolent Institute of New York in the five years, 1901-05, was 973, made up as follows: From December 5 to 31, 1901, 114; 1902, 209; 1903, 148; 1904, 266; 1905, 236. (Report of the "Istituto Italiano di Beneficenza," March, 1906.) Fully one-third of these were women, and tuberculosis, in almost all the cases, was the disease certified to obtain free passage. The total number of emigrants who returned to Italy in 1906 was 81,412, of whom 5.61 per 1,000 were cases of advanced pulmonary tuberculosis. (*Annals of Naval Medicine*, Vol. I, 1907.)

Studying further the mortality from tuberculosis of Italian women in New York, we find that they contributed 23.98 per cent. of all the deaths occurring among them in 1902, as against 21.9 contributed by the men for the same period. This

OF PARENTS OF DECEASED IN OLD CITY OF NEW YORK, YEAR 1906.

Diphtheria		Pulmonary Tuberculosis		Cancers		Heart Diseases		Broncho-Pneumonia		Lobar Pneumonia		Diarrheal Diseases		Chronic Brights'	
Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates	Deaths	Rates
198	34.8	895	157.4	259	45.5	511	89.9	531	93.4	542	95.3	803	141.2	483	84.9
74	17.3	2,018	472.8	436	102.1	104	244.1	318	74.5	851	199.4	373	87.4	1,091	255.6
42	8.9	816	172.7	416	88.1	657	139.0	164	34.7	403	85.3	186	39.4	585	123.8
202	131.1	375	243.4	66	42.8	187	121.4	1,095	710.0	513	333.1	745	483.7	115	74.6
147	71.0	261	135.3	177	87.9	257	128.5	328	165.8	215	107.7	363	182.2	161	80.7
11	17.3	85	133.7	64	100.7	91	143.1	22	34.6	68	107.0	26	40.9	90	141.6
86	79.8	261	242.0	118	109.4	157	145.6	264	244.8	164	152.1	280	259.7	96	84.0
1	4.6	63	287.7	27	123.3	39	178.1	13	59.4	25	114.2	9	41.0	37	169.0
1	8.6	21	180.6	10	86.0	15	129.0	5	43.0	16	137.6	7	60.2	20	172.0
....	....	27	255.7	12	158.1	15	197.6	4	52.7	10	131.7	7	92.2	14	184.4
2	14.2	55	391.6	19	135.3	29	206.5	11	78.3	20	142.4	11	78.3	28	199.3
0	31.2	65	338.2	27	340.5	28	145.7	17	88.4	16	83.2	28	145.7	32	166.5
10	35.0	44	154.2	18	63.1	14	49.1	17	59.6	18	63.1	27	94.6	16	56.1
160	51.7	457	145.6	90	29.1	229	73.9	312	100.8	228	73.6	478	154.4	175	65.1
983	39.9	5,900	239.4	1,856	75.3	3,506	142.3	3,379	137.1	3,303	134.0	3,652	148.2	3,232	131.2

higher death rate of Italian women above the men is quite in contrast with the general rule which obtains for the whole city, where males surpass the females in the proportion of 13 per cent. against 10 per cent. of all deaths for the same disease.

The cause of the higher susceptibility of Italian women to tuberculosis must be sought in the sudden change from the open air and free life of the fields to the seclusion and semi-asphyxiation of the tenement houses, where even those of the better class remain shut up for weeks and months.

In attributing this high morbidity of Italian women to congestion, I have just in mind the special class who do not attend to any other work except their house duties—a class which is much larger than commonly suspected, even among the peasants. Of course, for those whose constitution is sapped in the labor of sweatshops or other exhausting trades, urbanization is only responsible in a very limited sense for their physical breakdown. (Dr. A. Jacobi has illustrated in a remarkable pamphlet what is "the physical cost of woman's work." Its result applies most forcibly to the Italian women employed in the American factories.)

The table above presented shows the same higher death rate of Italian women above men in certain blocks of New York. In fact, the female death rate for all ages in Block A is 25.3, while the male death rate is 23.8. In Block F the female death rate is 25.03; the male death rate is 21.46.

More conspicuous is this difference between the ages of five and nineteen. Death rate between five and 19 years in Block A was 3.10 female, 1.44 male; Block B, 6.0 female, 2.10 male; Block D, 8.15 female, 6.25 male. From these last figures we see at a glance that urbanization exercises all its baneful influence and works its greatest injury among the girls at the critical period of puberty, and this more especially among those who arrive in New York, fresh from the country, between the ages of ten and twenty.

The hardships and privations experienced in their first struggle in the new city, coupled with the vile tenements and overcrowded rooms which they are compelled to occupy, explain their high mortality. Usually a family arrives and goes to live in a relative's flat, which is already crowded, and before it settles and finds work, is sheltered there, doubling and sometimes trebling the rate of overcrowding. I have seen girls so placed die from acute miliary tuberculosis, or pernicious anemia, in the first year of their landing in New York.

Tuberculosis of the adnexa and peritoneum is also seen with great frequency among them, and carries off many of the young Italian women. (Surgeons of great experience in our general hospitals can testify to the truth of this fact.)

Their early marriages, frequent pregnancies, and long periods of lactation are contributory factors, when we consider that the same conditions prevail also in their native land and do not affect their health in the same degree. Without question, then, their rapid deterioration and high mortality in New York must be charged against urban congestion as the principal factor.

MORBIDITY OF ITALIAN WOMEN.

Here we have a very elusive element to deal with, and while we see a large amount of sickness among them, it is practically impossible to reduce it to an arithmetical expression, and, therefore, we cannot make the evidence scientifically complete. Again, in examining the rate of sickness—and of course this applies with the same force to the study of the death rate—it is absolutely impossible to disentangle all the different factors inextricably intermingled one with the other (insufficient food, poverty, overstrain at work) and assign to each part the proportion they play in the causation of diseases. We must rely, therefore, chiefly on personal observation and accept the evidence in a broad line. From the study of eight hundred cases of tuberculosis seen by me in the last six years in hospitals and private practice, and carefully classified for analysis, I have been able to gather some very interesting facts on the relation of city life and the health of Italian women, and in a measure I must repeat here what I have previously written on the subject.*

In Regard to Age.

	0–15 Years	16–25 Years	26–45 Years	46 Years and Over
Male	26	162	108	33
Female	48	230	161	48

Examining the 800 cases under review, it is found that about one-half (392 cases; 162 men, 230 women) came to America between the ages of twelve and twenty-five, and were perfectly sound, physically, upon arrival. But the pernicious conditions of their new atmosphere, the unhealthy and crowded habitations, the long hours passed in the factories, the thousand privations imposed upon them by poverty, combined with the intense labor that, from a desire to make money, they push to utter exhaustion, without being sustained by food proportionate to the demands of the excessive waste and rapid growth of this period, all this explains in the clearest possible manner why so many young lives become an easy prey to tuberculosis in America. The invasion of the bacillus, indeed, is a simple coincidence in their already deteriorated constitutions. The coincidence, too, is to be found in the fact that the epoch of the greatest activity and spread of tuberculosis (fifteen to forty-five years) corresponds exactly to the ages of the greater contingent of Italian immigrants, as I have already pointed out at the start. Of the 233,546 Italian immigrants who arrived in New York in 1903, 81 per cent., or 197,267, were between the ages of fourteen and forty-five, and only 11,246 had passed the age of fifty.

The irrefutable statistics of Nagäeli inform us that at this period of life one-half the urban population is infected with tuberculosis, and that more than one-third of the deaths which occur are due to phthisis. This is precisely what we find to be true, even in a more marked degree, of the Italians in North America.

Touching the interval between the arrival of the immigrant and the appearance of disease:

Average Time From Arrival to Symptoms	1 to 3 Yrs.	3 to 6 Yrs.	6 to 10 Yrs. or More	Total
Of the women	85	340	146	481
Of the men	74	87	158	319

The women figure for the greater number in the period of three to six years; the lesser period (from one to three years) holding preferably with the young girls employed in tobacco factories, the seamstresses at home, and the young tailors.

In regard to certain regional elements.—The analysis of the 800 cases under review shows a very high percentage of tuberculosis among the Sicilians and those from the southern part of Italy in general, as compared with immigrants from central and northern Italy. The same, I am sure, would be true of all statistics which, instead of a small

*"The Italians in North America"; "The Prevalence of Tuberculosis Among Italians in the U. S." Milan, 1906.

group, would embrace immigrants from the entire peninsula.

The 800 hundred cases are subdivided in my classification as follows: Northern Italy, 96 cases (Genoese and Lombards in excess); Central Italy, 82 cases (those from Lucca and Piacenza in excess); Southern Italy, 315 cases (those from Basilicata, Calabria, and Molise in excess); Sicily, 307 cases (provinces of Girgenti and Catania in excess).

The great preponderance of Sicilian and Southern Italans must be interpreted simply as a parallel to the larger contingent of immigration from the south of Italy in the last ten years, rather than as an indication of special susceptibility to tuberculosis in these provinces.*

However, the fact remains undisputed, nay, confirmed, by daily observation that the peasant women from Calabria and Basilicata, together with those strictly primitive ones from the provinces of Girgenti and Caltanisetta, give in New York a very high percentage of tuberculous diseases compared with any other regions of Italy. They, in fact, more than the others, throw themselves headlong into the business of the making of cheap clothing, and rapidly fall away, working fourteen to sixteen hours a day in most confined quarters, stinting themselves in the matter of food, in dress, and in everything else.

Other direct injuries to the health of the Italian women referable to urban congestion, besides tuberculosis, have to be briefly enumerated and accepted as some sort of evidence of a general character, rather than positive facts of statistical deduction. The most frequent of these are: (1) Anemia and chlorosis in all its forms and stages. (2) Amenorrhea and dysmenorrhea, from arrested or defective development of the generative organs. (3) Retarded menstrual function. The average Italian girl in New York menstruates after the fourteenth and sometimes in the fifteenth year of age, while in Sicily the average period is at eleven or twelve and in the northern provinces at thirteen and fourteen years.† (4) Poor muscular development and loss of muscular tone due to lack of exercise and ill-ventilated rooms. One of the most frequent results of this muscular atony is a general displacement and fall of the abdominal organs (movable kidney, enteroptosis, etc.) with which 85 per cent. of the Italian women that present themselves for examination at gynecological clinics are afflicted. (5) Gastric and intestinal disorders (constipation, dyspepsia, etc.), the direct result of the ptosis just mentioned and of polluted atmosphere in close quarters, with all the attending symptoms of autointoxication (headache, irritability, emaciation, etc.). (6) Skin diseases, especially scabies, ringworm, eczema. (7) Finally specific diseases, as we have come to understand this vague term, meant to include lues and all venereal diseases. These are spreading with alarming rapidity among our immigrant population, are sapping the vitality of our young men and women and planting the seeds for the degeneracy of the race. In view of their extreme importance, I hope you will allow me to say a few words about them, overcoming the feeling that naturally exists in regard to this scourge and the moral repulsion you may feel against its discussion here. The death rate from venereal diseases among persons under forty-five years of age in the registration area of the United States in 1900 was higher for the Italians than for any other element of the white population; among persons of forty-five and over the Italians ranked fourth.

If we view these diseases in the light of their infectious and contagious character, we see at once the close relation they bear to congestion of population, and then we realize that we are confronted in this respect with a peril just as great as tuberculosis, that we cannot afford to ignore. "Those maladies are not necessarily venereal, nor always associated with guilt and immorality." It is in this tragic sense that I wish to bring them to the attention of this gathering, because the ravages we see among our immigrants are many times the result of innocent contamination in the homes of the poor and overcrowded.

"Gonorrhea and syphilis insontium," the scourges of the innocent, are more prevalent than people suppose. The literature has 9,058 cases of extragenital syphilis mostly innocently acquired (L. D. Bulkley). When people live huddled together at the rate of five and six in a room, it is impossible not to come in touch with the utensils, linen, bedding of persons infected with the disease, and in this way harmless children and honest women contract the virus without their knowledge, with no sin of their own. I shall not tell you of the hundreds of silent tragedies enacted in some poor, honest Italian family, where the presence of a chance boarder or a lodger brought the poison to the home. I shall not tell you of the cases of a child (fallen under my observation) who lost his eyesight in one night for having rested a while on the cot of a transient boarder. Nor of the hundreds of young girls of five and ten reeking with pollution accidentally communicated to them through bedding and towels and lack of sanitary conveniences in overcrowded tenements. And what about the thousands of innocent Italian women who have had their vital organs sacrificed and their health forever wrecked, after joining their long-departed husbands, only to be unknowingly contaminated by the deadly poison! This is already telling on the second generation of Italian women in America, who, in contrast to the phenomenal and proverbial fecundity of their mothers, are showing either "one-child-sterility" or absolute sterility.

Here is a problem that the Conference on Congestion of Population cannot afford to ignore and must not be ashamed to face. Despoil your mind of past prejudices in regard to these maladies: take off the adjective "immoral" from their name—because there is no question of immorality where innocent lives are constantly sacrificed — consider them as they are, contagious, highly infectious diseases, class them with smallpox, scarlet fever and diphtheria, and wage a merciless campaign against this domestic evil, that will free, if not mankind, at least the innocent and the honest from the worst blight that health could ever suffer.

The luetic scourge and the venereal diseases in general are chiefly diseases of cities, and it has been

*The geographical distribution of tuberculosis in Italy shows, on the contrary, the very opposite condition, in that the death rate from this disease is lowest in Sicily and the southern provinces in general, especially along the eastern coast (14-16 per 10,000 in the Province of Messina) and highest in the northern part, as in Leghorn, Milan, Genoa, and Venice (30-32 per 10,000). (Prof. G. Sormani.)

†According to Dubois and Pajot the different ages at which menstruation appears are: Warm climate, 11 to 14 years; temperate climate, 13 to 16: cold climate, 15 to 18.

Age at which menstruation appears in girls of the rich and the poor, in Italy. (Marro: "La Puberta," Turin, 1901.)

Years	Rich	Poor	Years	Rich	Poor	Years	Rich	Poor
10 years	1.3	1.7	14 years	20.0	21.4	18 years	1.3	...
11 "	13.3	5.3	15 "	8.4	30.3	19 "	1.3	...
12 "	18.7	7.1	16 "	4.0	16.0	20 "	...	...
13 "	29.3	8.9	17 "	2.6	8.9			

estimated that there are no less than 50,000 new cases of specific infection in New York every year. In the absence of compulsory notification, it is impossible to measure its extent, but you would be amazed to know how many have had some form of specific infection when you take the history of patients. Among Italian immigrants, especially among the women and children who come from rural districts where the disease is practically unknown, the infection that takes place when they arrive in New York is in 40 per cent. of the cases innocently acquired. Many mothers of the poor who take children from institutions to nurse them have also been inoculated with the poison. I have personally known of a case, where the infection, not soon recognized on account of its extragenital origin, was communicated by the mother to four of her children, to her husband and one sister.

Those, in a large measure, are the evils caused by congestion, and these the physical results of overcrowding on Italian women and children. The moral effects are just as great and serious. The homelessness of the tenement and the absolute absence of privacy of family life, make the abode of the poor one of the greatest perils of modern civilization. Already the children of the Italian immigrant have cut loose from paternal authority, do not resemble or imitate the fathers in the purity of the home and the strength of family ties, and they are contributing a large share to the juvenile courts and reformatories.

They are only the results of bad and vicious environment; they are temporary evils of a race climbing upwards and the inevitable set-backs of a people trying to adjust themselves to new surroundings. In other words, they represent conditions of a transitional stage, that will right themselves.

Let us arrange for a better distribution of the immigrants *not after* they have reached Ellis Island, but *before* they decide to leave their motherland, by informing them of the wonderful resources of this vast continent, outside and beyond the large cities; let us educate them to the principles of hygiene and life, when they are settled here, and above all, let us distribute the work in appropriate areas outside of the city limits, so that proximity of the factory should not be as it is now, in a large percentage of the cases, the chief reason for their congesting the cities. Let us, finally, promote the building of model tenements at a low rent that will not absorb 33 per cent. of their income, and stimulate the philanthropy of the rich in this direction, and when we shall have given the people clean, healthy homes, full of light and sunshine, we shall have accomplished the physical and moral regeneration of the masses; we shall have given them that to which every human being is entitled, health and happiness.

214 East Sixteenth Street.

THE FIFTH NERVE IN RELATION TO OPHTHALMIC CONDITIONS.*

By SAMUEL HORTON BROWN, M.D.,

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In presenting this subject, it, perhaps, becomes me, first, to apologize for the trite character of the facts that I shall bring before you, but as the object is merely to renew or awaken interest in those features of ophthalmology that are seldom touched upon, I feel justified in inciting this academic discussion.

*Read before the Wills Eye Hospital Ophthalmological Society, January 6, 1908.

When it is considered that all the afferent impulses connected with ocular structures, with the exception of those directly concerned in the special sense of sight, and perhaps trophic impulses, are carried by the fifth nerve through its large branch, the ophthalmic, the necessity of a proper understanding of its distribution becomes at once obvious. Turning for a moment to its anatomical consideration. (Hardesty's description in Morris's Anatomy, 4th edition, 1907), we find that "the sensory root of the trigeminus may be traced through the Gasserian ganglion into the cerebellum and into the terminal nucleus of the pons. After leaving the semilunar (Gasserian) ganglion, in pursuing its course toward central structures, it gives off T-shaped fibers which divide into peripheral and central branches. The central branches divide into ascending and descending branches on entering the brain-stem and find their nuclei of termination in a dorsolateral column of gray substance, which consists of the upward continuation of the gelatinous substance of Rolando of the spinal cord. Opposite the entrance of the nerve the column becomes somewhat thickened, constituting the sensory nucleus of the trigeminus, the part below being known as the nucleus of the spinal cord. The branches of the entering fibers bifurcate and terminate about the cells of these nuclei. The descending branches are longer and, passing downward, form the spinal tract of the trigeminus, which may at times be traced as far as the second cervical segment of the spinal cord. The ascending branches are short and terminate, as a rule, in the sensory nuclei."

"The axones from the nucleus of termination are distributed to the nuclei of its motor portion of the same and opposite sides; to the nuclei of the motor cranial nerves, and to the thalamus of the same, and chiefly the opposite side. The sensory nuclei are connected with the somaesthetic area of the cortex by the fibers of the medial lemniscus (fillet) and with the motor nuclei of the other cranial nerves by the medial lemniscus."

While the motor root of the fifth nerve is not directly connected with any ocular functions, it may be well to trace its origin in order to show the close association with the nuclei of other cranial nerves. "The nucleus of origin of the motor root of the trigeminus is composed of two portions. The principal nucleus lies on the dorsomedial side of the sensory nucleus. It gives rise to the greater part of the motor root and its fibers are distributed to the muscles of mastication. Above the principal nucleus and along the line of the locus cœruleus extends the nucleus of the mesencephalic (descending) root. The cells of this nucleus are thinly scattered as high up as the posterior commissure of the cerebrum and the mesencephalic root arising from them gradually increases as it passes through the encephalon to the superior level of the pons, where it joins the fibers arising in the principal nucleus. The distribution of the fibers of the mesencephalic root is not clearly settled. The motor nuclei of the fifth nerve are connected with the lower part of the somaesthetic area of the cerebral cortex of the opposite side by the geniculate bundle of pyramidal fibers, and they are associated with the sensory nuclei of other cranial nerves by the medial longitudinal fasciculus. Thus it will be readily appreciated how closely related are the central portions of this nerve with the central portions of other cranial nerves, sensory as well as motor, and it is scarcely conceivable, in view of this, that they do not have some common functions at least."

So much for the detail of the central distribution

of the nerve. As we all know, the peripheral distribution is through three large branches, the ophthalmic, the maxillary, and the mandibular. The ophthalmic is exclusively sensory, and before it divides into frontal, lacrymal, and nasociliary (nasal) nerves, it receives communicating filaments from the cavernous plexus of the sympathetic and likewise communicates by three branches with the third, fourth, and sixth nerves. This affords a structural explanation of some of the peculiar associated extraocular muscle-palsies and other muscle phenomena, such as twitching of the lids, blepharospasm, etc. Later in its course, through the medium of its nasociliary (ganglion) branch it communicates with the third (oculomotor) nerve and filaments from the cavernous plexus of the sympathetic. The long ciliary nerves are branches of the nasociliary (nasal) branch, while the short ciliary nerves are derived from the ciliary ganglion, which receives its sensory root from the nasociliary (nasal) nerve. Thus it will be seen that sensory impulses except those directly referable to the sense of sight are carried by the fifth nerve, most by the ophthalmic, a few by the maxillary branch. Ocular pain is made possible only through the fifth nerve. The other nerves arising from the fifth nerve are distributed to certain of the muscles of mastication and to the teeth. Through the superficial communication with the facial nerves, pain arising from diseased conditions of the face may be referred to the eye and *vice versa*.

Having disposed of the anatomical conditions, it is necessary, for argument's sake, if for no other, to enumerate the conditions that have been observed to illustrate the relationship assumed at the beginning of this paper. Beginning with the skin of the eyelids, perhaps the most common is herpes zoster ophthalmicus, a clinical variety of ordinary shingles. This follows the peripheral distribution of the fifth nerve and not uncommonly involves the cornea with destructive results. Very occasionally, according to De Schweinitz, atrophy of the optic nerve and paralysis of the oculomotor nerve have followed this affection, showing the trophic influence of the fifth nerve.

Leprosy, an uncommon condition with us, often begins about the eyelids, and is characterized by cellular deposits about and within the nerve, thereby producing anesthetic areas. This anesthesia in leprosy is not confined to the eyelids, but likewise involves the cornea. Anesthetic areas over the distribution of the ophthalmic nerve in the course of hysteric affections are within the range of possibility, but it is doubtful if such details have been recorded. A peculiar hysteric affection has been reported by C. Markus (*Ophthalmoscope*, January, 1907), which was manifested by tonic contraction of the right frontalis, resulting in a continuous elevation of the right eyebrow. This was not compensatory as is seen in ptosis. There was twitching of the left supercilii and the right pupil was slightly larger than the left. The patient was the subject of almost continuous left-sided headache.

Tonic cramp of the orbicularis (blepharospasm), due to the irritation of foreign bodies in and inflammation of the conjunctiva or cornea is by no means uncommon and owes its production to irritation of the terminal filaments of the fifth nerve. Not only does this reflex action find its expression in this tonic spasm, but pain, photophobia, lacrymation, and redness in anterior ocular structures may be attributed to it. The relation of conjunctival disorders to the fifth nerve is no better illustrated than in the case reported by T. H. Butler (*Ophthalmoscope*, May, 1907), in which mydriasis accompanied conjunctivitis. This was doubtless caused by the reflex arc produced by the communication between the fifth nerve, the sympathetic, and the third nerve. The condition known as snow-blindness, conjunctival asthenopia, etc., is in all probability intensified by some neuropathic factor involving the nerve under consideration, since exposure of other mucous membranes to the same conditions would not be productive of such annoying symptoms. Conjuntivitis has been attributed to teeth disorders by Förster, Kempton, and others in certain cases and relieved by the extraction of the offending teeth.

While most of this apparent relation is speculative, it is possible to point to a tangible connection between the trigeminus and many forms of corneal ulceration. Indolent ulcers, dendritic ulcers, ulceration associated with carious teeth, neuroparalytic ulcers, etc., are acknowledged to be dependent upon the disturbance of the trophic influence of the fifth nerve. In neuroparalytic ulceration we find anesthesia of the cornea as in lepra, herpes corneæ (Horner), and glaucoma. Here the condition is secondary to a severance of the trophic impulses while in other ulcers we find neuralgic pains and increased sensibility dependent upon an increase of sensory impulses. Trophic changes are well illustrated in those corneal conditions associated with Hutchinsonian teeth and rachitic teeth. The influence of the fifth nerve in this connection is obvious.

H. Powers (Trans. Odont. Soc. Great Britain, London 1883-1884, XVI, p. 56) years ago in a detailed study of the relationship existing between the teeth and the eyes called attention to the occurrence not only of corneal ulceration but also glaucomatous symptoms, mydriasis, myosis, paralysis of the extraocular muscles, failure of accommodation, and exophthalmos in the course of dental disease. On the other hand, Stevens, in 1877, reported a case of obstinate toothache relieved by wearing cylindrical lenses, an experience which is by no means novel at this date.

In connection with affections of the iris, it may be assumed that pain is directly due to involvement of the fifth nerve, since it is the sensory nerve of that structure The possibility of the fifth nerve being the intermediate factor in those cases of mumps attended with iritis is worth investigating. True iritis has been shown to have produced neuralgia directly referable to the teeth by Galezowsky (*Journal d'Ophthalmologie*, tome i) and others. Cyclitis secondary to dental disease has been observed by Juler. The ciliary nerves as a factor in the pathogenesis of sympathetic ophthalmia is still entertained by some observers (Schmidt-Rimpler) despite the great vogue the toxin theory is now enjoying.

Glaucoma with its corneal anesthesia, neuralgia, and trophic changes in the optic nerve, certainly is attended with involvement of the fifth nerve, but whether the disturbance of the trigeminus is a primary condition has yet to be proved. Donders inclined to the belief that hypersecretion superinduced by irritation of the fifth nerve, was the cause of the disease. While this theory is no longer entertained, it is interesting to note that the influence of this nerve was the subject of thought at this period. Those cases that have obtained benefit from the Jonnesco operation incline one to regard this older theory of the influence of the trigeminus with some favor in view of very close association of its fibers with those of the sympathetic within the orbit. Badal in 1882 advocated stretching of the nasal nerve for the relief of ciliary pain and

the procedure has since been applied to the treatment of glaucoma by Trousseau, Abadie, Lagrange, Ulry, Ginestous, and others. As recently as September, 1906, Villemonte (*Recueil d'Ophthalmologie,* September, 1906) revived the operation making claims for its value in secondary glaucoma, keratoiritis, ulcerous keratitis with secondary glaucoma, chronic glaucoma, and secondary glaucoma occurring in the course of hemorrhagic retinitis and neuroretinitis.

Among the less frequent causes of lenticular opacities may be mentioned the irritation of the fifth nerve incident to dental disease. Such a case has been recorded by H. Sevill (*Lancet,* 1884, p. 709) although it may be regarded with scepticism. Chorioiditis and vitreous opacities have been observed to follow dental disease by M. Juler. Perhaps the greatest influence of the fifth nerve as regards dental disease is to be observed in those cases in which there is disturbance of the extraocular muscles. Spasm of the eyelids (S. J. Hutchinson, *Medical and Surgical Reporter,* 1885), ptosis, and strabismus (Hancock, *Lancet,* 1859) have been recorded. The accommodation has been reflexly affected by dental disease as is shown by Herman Schmidt's (*Archiv für Ophthalmologie,* XIV) analysis of ninety-two cases of dental disease in which seventy-three instances of deficient accommodation were noted. Reflex blindness has been attributed to the fifth nerve in certain cases associated with dental disease (Brubaker; Allport, *Journal of the American Medical Association,* 1883, p. 637; Dewitt, *American Journal of Natural Sciences,* CX, 1868, p. 382).

While the views of different observers vary greatly as to the real influence of the trigeminus in the cases cited, it remains certain that the close association of the nerve, both centrally and peripherally with the other nerves must of necessity have some close association functionally or pathologically, and it is only with the purpose of reviving an interest in the possibilities, suggested by the anatomy of the nerve, that this essay is written.

1901 Mount Vernon Street.

A PIECE OF CATHETER VOIDED DURING URINATION.

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In calling attention to the following case which recently came under my observation I do so not only on account of its interest because of the rarity of such an occurrence, but also for the practical lessons it teaches.

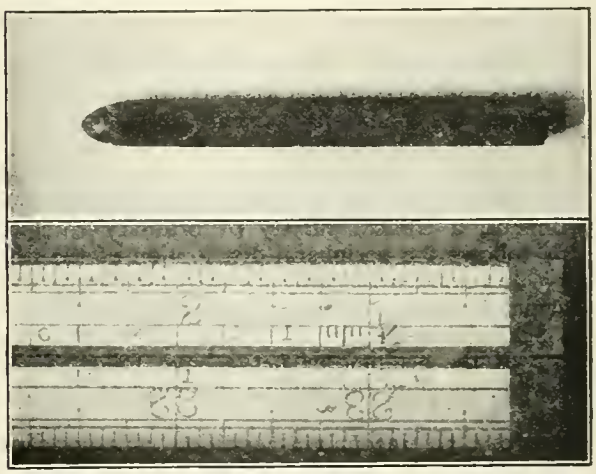
The patient was a man twenty-three years of age, who came to the Vanderbilt Clinic complaining of painful and frequent urination, which he had been suffering from for the past nine months. He denied ever having had gonorrhea, but had acquired syphillis five years previously. For this he had been treated for six months at the Lock Hospital, London, and since that time there had been no manifestation of the disease.

He had been obliged to urinate about every hour during the day and two or three times at night. Urination was very painful, but the urine was passed freely and easily. So far as he was aware there had never been any blood in the urine. A short time before coming to the Clinic he had made four or five visits to a physician, who at first prescribed some remedy, assuring him he would soon be well. On the last two visits the physician had passed a catheter and irrigated the bladder. Following these treatments his symptoms had become worse, and when he again consulted the physician he was told that he had something growing in his bladder and an operation would be necessary.

On his first visit to the Clinic the urine was cloudy from pus and contained shreds. An examination of the prostate showed it to be somewhat large and more tender than normal. The condition was considered too acute at that time to permit of cystoscopic examination; he was therefore ordered an alkaline diuretic mixture and hot sitz baths night and morning. On returning one week later the condition was reported to be about the same. He was told to return a few days later, when an examination of his bladder would be made, if possible.

Five days later he returned, stating that on the previous day, while urinating, he had passed a piece of catheter, which he had brought with him. The illustration is from a photograph of this, in actual size.

I examined him for the first time two days subsequently and found his urine clear, only containing a few flakes and shreds. The frequency of urination was somewhat diminished and the pain was less, though the frequency was still more than normal.



The piece of catheter measured two and one-fourth inches in length and was of No. 16 F. scale. An examination of the piece showed it to have been apparently little used, as it retained its original color, not having become discolored or stained from long usage. At it was desirable to retain the specimen in its original condition, no attempt was made to test its friability.

The case was to me unique at the time, not being able to recall to mind the record of a similar case, although Gouley states that "fragments of catheters, pistol bullets, and other small objects have been passed from the bladder into the urethra to be carried away by the urinary current." I have since come across two cases recorded in the Medical Record, one by Dr. C. C. Ransom, in which the patient in catheterizing himself broke off a piece of webbed catheter six inches long, and finally succeeded in extracting it himself by passing another catheter and telescoping the broken piece. In this case it seems quite evident to me that the catheter must have been lodged in the urethra. The other case is recorded by Dr. W. B. Davis; the man passed the piece during urination, after being ordered to eat a large quantity of watermelon and retain the urine for some time.

The patient was recently shown at the American Urological Society and none of the members had seen a similar case. There was some doubt expressed by one of the members as to whether the catheter had been broken off in the bladder, and that possibly it had been retained in the urethra, the urine passing through the catheter. This, of course, might have been the case, and to learn, if possible, if this was so, I questioned the patient as to the manner in which the piece had been passed out, but he was unable to give me any information on that point.

If all the facts are as the patient stated them it serves very well to illustrate how important it is in purchasing catheters to buy only those of the best quality. Cheapness is an item not to be considered. It must also be remembered that all articles of this sort deteriorate quite rapidly, more especially if not in constant use, on account of the oxidation which takes place. A catheter which has remained for some time unused should always be thoroughly tested before being passed into the urethra to satisfy oneself that it is sound.

If any one should be so unfortunate as to have such an accident occur, the best course to pursue would be to inform the patient of the fact, and if the physician could not remove the piece himself, send him to some one who could.

As to the best method of treatment in such a case, if the piece was lodged in the anterior urethra an attempt might be made to remove it by manipulation of the urethra from below and behind the fragment, the urethra being well distended with olive oil. Calculi have in some instances been removed in this manner. At the present day, when nearly every one is using the endoscope, a resort to such measures would be unnecessary, as the foreign body could be easily seen and grasped through a good-sized tube and easily extracted.

If the fragment was lodged in the bladder, a cystoscopic examination might be of assistance, and if the piece was quite small it might be extracted with the operating cystoscope; though, as a general rule, I should be opposed to the use of such an instrument, both on account of the traumatism which might result, and also because, in my experience, it is extremely difficult to grasp the fragment. External urethrotomy would be the method of choice in such a case, when the piece could be grasped and easily removed.

A great many have probably seen very fair-sized stones which have been passed, and there is no reason why a piece of catheter of the size shown should not be voided, provided it gain entrance at the internal meatus. But this would probably very seldom occur and it would be worse than useless to wait for such an occurrence in the majority of cases.

Whether the piece was broken off in the urethra or had lodged in the bladder, the patient may be considered as having been very lucky.

INUNCTION OF IODOFORM IN TUBERCULOUS PERITONITIS.

By SIDNEY F. WILCOX, M.D.,

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Iodoform has long been recognized as the most powerful agent for the local treatment of tuberculosis. It acts directly on the bacillus, but in order to obtain its bactericidal effect it must be brought into direct contact with the organisms.

As a dry powder, iodoform is as inert as so much sand, and it is only during the process of change from iodoform to iodine that its power is exerted. It is not as iodoform that it acts, nor as iodine, but in the stage of transition, or in the form of nascent iodine.

To induce this change the iodoform must be brought into direct contact with such liquids as have the power to break it up and make it available. Pus has this property; the liquid contents of a so-called tuberculous abscess has it also, and that is the reason for the activity of this agent when brought into contact with these liquids. This is true whether the iodoform is introduced into sinuses of pus cavities, either as a powder or in suspension in oil or glycerine, or in an ethereal solution.

The introduction of iodoform into a sinus or closed sac is easily accomplished by packing in the dry powder in the first instance or its introduction as an ethereal solution or in suspension in oil or glycerine after aspiration of the fluid. Here the iodoform which is left after the absorption of the oil or evaporation of the ether is in actual contact with the diseased tissues and exerts its destructive effect upon the bacilli. This I have been able to demonstrate in many cases of tuberculous joint disease, with the result of obtaining complete cures even in the advanced stages.

In cases of tuberculous peritonitis it would not be possible to bring iodoform powder into actual contact with the disease focus without an operation (as has been done) and it was with the idea of rendering iodoform easily absorbable through the skin that I was led to make up the solution which I employed in the two cases given below.

The only easily obtainable solvent of iodoform that I know is ether, which takes it up in the proportion of one part to ten or twelve. This solution is unstable and is not adapted for inunction because the ether evaporates immediately leaving a deposit of dry iodoform on the surface. An iodoform ointment is made by stirring the powder up with vaseline, but in this case the powder is simply in suspension and not in solution, although by inunction a certain small amount of the iodoform may be rubbed into the skin with the vaseline, and good results have been obtained by the use of this mixture.

It seemed to me, however, that if the ethereal solution of iodoform could be added to an oil it would remain in solution and so be much more readily taken up, and as ether and oil unite in almost any proportion, I simply made up an ethereal solution of the drug and poured it into the bottle of oil, with which it made a perfect solution. The proportions may be varied, but the one which I have employed the most is: Iodoform, ʒij; ether, ʒijss; add olive or cod liver oil to make ʒviij. This is applied by inunction to the abdomen night and morning.

Case I.—About eighteen months ago a delicate looking girl of fifteen years was brought to my clinic at the New York Medical College and Hospital for Women. She was anemic, had never menstruated and had marked enlargement of the abdomen which had given rise to unjust suspicions of pregnancy. The abdomen was as large as that of a woman six months pregnant. The enlargement was symmetrical, but was flatter in the recumbent position than in the case of an enlarged uterus. Dullness was present, but it changed location from day to day, although the presence of free ascitic fluid could not be determined. It is probable that the fluid trickled slowly between adherent folds of intestines as she changed position. She had no cough or evidence of pulmonary involvement, but her mother had died of consumption.

Shortly after admission to the hospital she had a run of fever with some spots on the abdomen, which led to the idea of possible typhoid, but it quickly subsided under treatment, although the abdominal enlargement continued to increase.

Finally, a diagnosis of tuberculous peritonitis having been made, I decided to open the abdomen to give her the benefit of the well known good effect of simple incision in such cases. Through a median incision I reached the peritoneum, which was greatly thickened and intensely red. On attempting to open it I found it so firmly adherent to the other structures that I abandoned the attempt after having simply split the thickened membrane without opening the abdominal cavity in the slightest degree. The wound was closed and healed within a few days. Then I began the inunction of the iodoform solution mentioned above, and after a few weeks the abdominal enlargement entirely disappeared. She improved in health, her menses came on, and she looked like a well girl. I had not see her for nearly a year, when she came to see me a short time ago. I did not have time to make a thorough examination then nor have I seen her since, but there is no abdominal enlargement: she is in pretty good flesh, but for the last two months the menses have not appeared and she is not feeling well—and I fear there is a possibility of impending pulmonary trouble—especially as she has been working where the hygienic conditions are not good.

Case II.—This is a case of a boy four and one-half years of age whom I had had under my care for eighteen months for Pott's disease of the spine. He had also during that time developed a tuberculous mastoid abscess which had been operated on and cured by Dr. F. H. Boynton. The nurse called my attention to a very marked enlargement of the abdomen, and on examination I found free ascitic fluid. The same method of treatment was prescribed as in Case I, and within a short time the fluid disappeared, the abdomen became flat, and the general health improved. It is stated by authorities that some cases of tuberculous peritonitis in children get well spontaneously. Admitting that as a possibility, I do not believe that such a probability existed in these cases. Nor do I believe that the operation in Case I had anything to do with the cure.

Some time before I employed the solution here mentioned my friend the late Dr. H. M. Dearborn consulted me about a case of irregularly lumpy enlargement of the abdomen. I did not see the patient, but judged the condition to be one of tuberculous peritonitis and advised the use of iodoform rubbed up in vaseline, by inunction. This was used with a resulting cure.

Three cases are of course not a sufficient number upon which to base a definite conclusion, but these results indicate a method of treatment which may be of value. It seems to me that benefit *might* be obtained by inunction of the ethereal solution in cod liver oil or olive oil over the chest in cases of pulmonary tuberculosis or possibly even in tuberculous meningitis. I will add that in one case in which the knee joint became enlarged and tender about two weeks after I had made a resection of the hip joint, the solution was applied daily with the result of complete subsidence of the symptoms.

41 West Fifty-second Street.

Cremation in Prussia.—The Prussian Government is about to abolish the existing Ministerial ban against cremation. This subject has been under active discussion for about twenty years, members of the Conservative and Clerical parties steadily refusing to grant the concession.

The Tomb of an Ancient Egyptian Physician.—Garstang's recent work on the "Burial Customs of Ancient Egypt," gives a scientifically complete record of the contents of the sepulcher of an Egyptian physician, and in this case of a personage who flourished under the twelfth dynasty, *circa* B. C. 2000. The deceased, whose tomb is described, was named Nefery, and in all the numerous repetitions of his name upon the two coffins provided for him is termed "a physician." That he either came of a wealthy family or amassed wealth by the practice of his profession is proved by the expense that was lavished upon his burial, his funerary furniture being one of the most complete sets of such appointments found in other than princely tombs at Beni-Hassan, where he was interred. Various and many as were the objects deposited beside his body, only two of these can in any way be considered as connected with his vocation. These are a set of writing implements, consisting of a writing tablet and a pen box, the latter furnished with a number of reed pens ready for use. The writing tablet, which, together with the pen box, was placed upon the lid of the outer of Nefery's two coffins, was coated with stucco and then painted, and the surface so carefully smoothed by some polishing process that it was probably possible to remove any temporary memoranda made thereupon as soon as their purpose was fulfilled. At one end of the pen box were two inkwells in which the remains of a red and of a blue-black ink can be detected. Unfortunately no written notes survive upon the palette. Among the objects found in the tomb are some beautiful models of Nile boats, one having twenty rowers; also an imitation of a granary and many figures of domestics and laborers. The inner coffin, or sarcophagus, bore some quite new texts to scholars of the most archaic Egyptian religious books and explained that Nefery was a devotee of Osiris. The body had been laid upon its side wrapped in folds of linen cloth and was not mummified. The head was encased in a painted cartonage. This physician's tomb has been rearranged, as it was when first reopened, in the Cairo Museum, where it is the subject of much interest.—*The Lancet.*

Hemoglobin and Iron in the Blood of Infants.—Luigi Giordani details examinations made of the blood of infants suffering from various diseases, as to the amount and composition of the hemoglobin and iron in it. The iron found in the blood is supposed to be mainly in composition with the hemoglobin, but there is also some iron not contained in the hemoglobin. A part is in the plasma, due to the destruction of the blood corpuscles, and another part is under the form of albumin or nuclein in the leucocytes, derived from the metabolism of feruginous foods. The liver contains much iron, which is thrown into the circulation at various times. From the eighty-six cases examined by the author, in twenty-two there was increased amount of iron, in thirty the hemoglobin was in greater amount. Tuberculosis acted on the hemoglobin and its compounds to diminish them. There was a large amount of iron found in nursing infants, especially in the extrahemoglobinic form. A certain amount came from the liver, while some came from the new formed blood corpuscles. The iron and the hemoglobin do not always bear a constant relation to one another.—*Gazzetta di Roma.*

Experimental Atheroma and Ovariotomy.—L. Lortat-Jacob and Ch. Laubry detail experiments made on animals to produce atheroma, and to ascertain the relation of the removal of the ovaries to its occurrence. Their conclusions are given thus: 1. Certain physiological conditions, such as sex, age, and lactation, explain the negative results obtained in rabbits in attempted production of atheroma by injection of adrenalin. 2. Castration of the animals favored the production of atheroma in the females. 3. In those animals that had had the ovaries removed there was a marked accumulation of fat instead of atheromatous lesions produced.—*La Tribune Médicole.*

MEDICAL RECORD.

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POLYCYTHEMIA.

CONDITIONS involving quantitative and qualitative changes in the white blood corpuscles have received a great deal of attention ever since the improved technique elaborated especially by Ehrlich and his pupils has enabled us to recognize the various types of these blood elements. In addition to what may be called symptomatic changes in the leucocytes, such as absolute and relative leucocytoses and leucopenias, a distinct class of diseases of the blood itself, the leukemias, has been discovered. The ultimate factors underlying these conditions have not as yet been found, though the real seat of the disease has been demonstrated to be in the blood-making organs of the body.

Quite recently Osler has collected a number of cases of disease similar to the leukemias in type, but involving not the white but the red corpuscles of the blood. It is probable that Vaquez, in 1892, had published the first recognized case of this affection; since then some twenty-five cases have been reported, characterized by a great numerical increase of the red blood cells accompanied usually by cyanosis and enlargement of the spleen. In Nos. 7, 8, and 9, Vol. VII. of *Russkii Vratch* Dr. G. P. Rubinstein communicates one more case of the disease, and at the same time subjects to a careful analysis the data obtained by the earlier observers. He finds that of the three elements usually entering into the clinical picture of the disease, that is, polycythemia, cyanosis, and the enlargement of the spleen, but one may be considered as constant and characteristic, namely the polycythemia. The cyanosis has been absent in three reported cases of the disease and in a case of Dr. Strigenko not yet reported. This so-called cyanosis, moreover, is quite different in character from the appearance produced by the diseases of the heart and lungs. The color of the skin is not bluish-black but rather of a purplish or violet-red tinge, depending, as it does, not upon the backing up of the blood in the veins but upon the great increase of the hemoglobin and upon the dilatation of the capillaries caused by the increase in the corpuscular elements of the blood. The appearance really simulates a hyperemia of the skin, differing from the usual acute condition by returning but slowly after the application of pressure and by involving such sites as the tongue and the vocal cords. The second element, the enlargement of the spleen, has been absent in a number of reported cases. That it has no causal relation to the disease may perhaps be concluded from the fact that in one case of polycythemia (Caminotti) the condition of the blood was found to be unchanged seven years after the removal of the enlarged spleen.

Polyglobulism, however, forms the essence of the disease, and all questions of the etiology of the affection are concerned with the explanation of this phenomenon. The change in the corpuscles is mostly numerical in type, although a few normoblasts are found in the circulating blood. The number of red cells observed has been from six to twelve million per c.m., which forms a curious commentary on the views of Reinert, who has concluded from mathematical and theoretical considerations that the greatest possible increase of the red cells in man could not exceed some nine million cells to the cubic millimeter! The white cells are also somewhat increased in number, the polymorphonuclear forms showing both relative and absolute increase; most of the cases have likewise shown a few myelocytes and mast cells. The essential pathological lesion has been found to be a marked hyperplasia of the erythroblastic apparatus of the body, expressed in the transformation of the usual yellow medullary contents of the bones into an active red marrow. This pathological finding immediately classes the disease as an analogue of the leukemias, and in recognition of this the author proposes a new name for the condition which may be translated from the original Russian by the term "*erythemia.*" In the one case the leucoblastic apparatus is involved in the lesion, in the other the erythroblastic portion is the one affected. The seeming differences in the types of the changes observed in the two corpuscular elements of the blood may be explained, according to Rubinstein, by the existence of but one normal type of the red cell, which of course limits the possibilities of variation, and by the fact that the evolution of the red cell is much more rapid than that of the more highly organized leucocyte. The differences observed are thus conditioned by the marked physiological demarcation between the elements affected in the two conditions. Whether the ultimate causes underlying these diseases are the same or not remains to be cleared up by future observations.

Dr. Rubinstein's analysis sums up very clearly our present knowledge of the subject, and the term proposed by him is preferable to polycythemia, which may remain to designate symptomatic increase in the number of red blood cells; it is certainly more acceptable than the pseudo-complimentary eponyms, such as "Vaquez' disease" and "Osler's disease" that are sometimes used in describing this rare affection.

THE ARMY RIDING TESTS.

THERE is a neglected medical side to the army horsemanship tests which have been filling so much space in the newspapers. As every physician knows, the heart can stand only a certain amount of internal hydrostatic pressure, and any excess results in acute dilatation. If the person is young and the stretching is not excessive the heart may recover in a few minutes or hours as it is elastic in that sense, but in those who are beyond the age of 35 or 40 there is apt to be permanent dam-

age. It is almost a daily routine of some consultants to advise men over 40 to abstain from excessive muscular activity. The medical profession some years ago put a stop to the bicycle craze which ruined so many old men, and it is responsible in part at least for popularizing such games as golf, which can be safely played in extreme old age.

From time immemorial the muscular exertions in armies have been performed by young men—mere boys—and even they can not stand the stresses of a long war—no human being can. But it is found that boys, though they have the proper muscles and hearts, are not possessed of sufficiently matured brains, and even if they had the brains, they have not the experience or training to enable them to do the mental work. For thousands of years it has been found necessary to have mature, even elderly, leaders commissioned for their mental abilities and relieved from all the muscular strains which only young men can perform. This distinction between officer and soldier is a physiological necessity and arose as a matter of experience, for warfare is impossible in any other way. Never, except in prehistoric savagery when armies cannot be said to have existed, have the leaders been supposed to be able to do the actual fighting. Yet recently the War Department has been bent upon exacting of officers over forty exertions which are proper for youthful men only.

The latest proposition is to compel all officers to take a ride of thirty miles for three successive days, and on each day covering five of these miles on foot leading the horse. It is safe to say that not one of the elderly officers who fought the Manchurian campaign was ever required to do anything approaching this in severity. If it had been exacted as a test beforehand it is certain that the war would not have been fought, for officers would have been lacking. Marshal Oyama and his generals could not have endured it, judging from their pictures and such descriptions as have been published. If it is required here, our army will be deprived of many of its valuable officers fit for campaigns, and many of those who do take the test will be ruined for the less strenuous exertions of actual war. In other words, the test is beyond human endurance, except for freaks or cowboys less than 40 years old. Even the former test was too severe and rumor credits it with having done more or less damage to some of the officers. Training is designed to fit men to stand the strains of war with the least harm, and to expose them to the dangers unnecessarily is as foolish as exposing them to gun fire to get accustomed to being fired at. But in this case, the officer will seldom if ever be subjected to such strains even in war, and it is amazing that they are suggested. There must be something wrong with the army when medical science is so ignored.

CONSERVATIVE GALL-BLADDER SURGERY.

While it is certain that removal of the gall-bladder often seems to affect the general health in no appreciable way, it would yet be rash to assert that the gall-bladder does not serve a useful purpose. The fact that a diverticulum from the stump of the cystic duct or along the course of the common duct occasionally develops after cholecystectomy is at least an indication that the gall-bladder may be of service to the economy. Nevertheless the prevailing teaching to-day is in favor of cholecystectomy in many diseases of the biliary passages. In the *American Journal of the Medical Sciences* for April, 1908, Dr. Deaver has taken up the question of cholecystectomy, pro and con, giving in detail the reasons why it should not be performed as frequently as is advocated by many surgeons. He admits that it is indicated in hydrops with obliteration of the cystic duct, in new growths, chronic empyema, gangrene, and perforation of the gall-bladder, yet warns against the removal of the bladder when the cystic duct is not permanently occluded or the walls seriously diseased. He does not believe that cholecystectomy should always be performed in acute suppurative calculous or noncalculous cystitis, while in acute catarrhal calculous or noncalculous cholecystitis he regards it as distinctly contraindicated. He reminds us that drainage is the essential feature in all truly infectious diseases of the biliary passages and that the use of the gall-bladder for this purpose, whenever possible, is safer than the deeper operations, namely drainage of the common duct or hepaticus. When there is a permanent obstruction of the common duct requiring drainage he points out how much easier it is to perform a cholecystoenterostomy than a choledochoenterostomy which would be necessary if the gall-bladder were removed. The remote as well as the immediate mortality from drainage of the gall-bladder is less than that which attends its removal, which fact is offered as another excellent reason for not ablating it. He does not consider the possibility of recurrence of stone an objection to cholecystostomy; this may also happen after cholecystectomy. In all doubtful cases he advises drainage of the gall-bladder rather than removal, even at the expense of getting a mucous fistula.

There is no doubt that while many surgeons agree with Deaver, many of the annual hospital reports and large gall-bladder statistics indicate that cholecystectomy is too frequently performed. Deaver's remarks are gratifying in that they display a tendency toward conservative surgery. He emphasizes that the judicious surgeon should regard nature, should assist her as far as he can, and should therefore not ablate a gall-bladder which is still functionally active or which may later become functionally active. What applies to operations on the gall-bladder applies with equal force to other surgical procedures, and signs are not wanting that the pendulum has reached the limit of its swing toward the operative side of surgery, and that its return movement has begun.

The Physiological Action of Tobacco Smoke.

A great many investigations of this subject have been undertaken, and results have been reported which were widely different in more or less important respects. Usually considerable stress has been laid on the manner in which the combustion of the tobacco was effected, and an important rôle

in the production of the physiological action has been ascribed to the pyridin and allied substances formed as by-products during the process. An unusually painstaking series of observations of this nature is described by Lehmann (*Münchener medizinische Wochenschrift*, April 7, 1908), who comes to the conclusion that, after all, it is the nicotine that gives rise to the well-known effects of smoking, whether it be a cigarette, cigar, or pipe that is used. By one set of experiments it was determined that the carbonic oxide, hydrocyanic acid, and sulphuretted hydrogen of the smoke were inactive under ordinary conditions, and it was then found that of the pyridin, ammonia, and nicotine only the latter was practically important as a toxic substance. The symptoms of acute tobacco smoke poisoning and the amount of nicotine actually absorbed are in accordance with what is known of the toxicology of the alkaloid, and factors which cause a greater amount of nicotine to be absorbed in a given time also increase the symptoms of intoxication. This view has already been expressed, though probably on a less firm experimental basis, and the objection has been made to it that children who smoke the leaves of plants entirely free from nicotine also suffer from symptoms quite similar to those caused by the real weed. Lehmann has analyzed the smoke from such sources and finds that it contains minute quantities of some alkaloid resembling nicotine, which though apparently not toxic for adults, might be sufficiently so to affect children. A point that is left unexplained, however, is why two cigars that chemically have about the same nicotine content may none the less be very different in strength so far as the smoker is concerned, a fact that would seem to indicate that something more than mere nicotine absorption enters into the question.

The Duties of the Physician.

No more noble tribute to the medical profession has perhaps ever been penned than that placed by Robert Louis Stevenson as an introduction to his collection of poems, "Underwoods." It is true that unusual self-abnegation and altruism are required of the really fine practitioner, and as Nothnagel has said, "Only a good man can be a good physician." Another Viennese physician once wrote: "The patient seeks aid which the physician must know how to bring. He must take away the results of the sins of the parents, of ignorance, and of excess. He must alleviate the consequences of poverty, want, and misery, of grief and of despair. The effects of heat and of cold, of the air and the water, of food and occupation, of poison and violence, of contagion, pestilence, and old age, he must ward off and render harmless. He must always stand ready, cheerful, and undismayed, a support to human infirmity, a guardian of life, a source of health and of the highest earthly happiness." In a recent address delivered in Berlin Prof. His quotes the following from a letter which Sonderegger wrote to a friend who asked whether he should have his son study medicine: "There is on earth nothing greater or more beautiful than man, and the study of mankind is the most difficult and exalted subject of thought and action. Human development and ambition, human life and ills, all are in the highest degree remarkable and touching. But you must bring with you keen eyes and acute ears, a great gift for observation, patience, and yet again patience for endless study, a clear, critical mind, and an iron will strengthened by opposition, but yet a warm and tender heart, comprehending and feeling every sorrow; a reverent spirit, and austerity that is superior to sensualities, money, and eminence; furthermore, a decent appearance, polished demeanor, and adroit fingers, health of body and soul; all of these must you possess if you would not be either an incompetent or an unhappy physician. You must stagger under the crushing burden of unending knowledge, and yet preserve the lightheartedness of the poet; you must know all the arts of charlatanism, and yet remain an honest man; once for all, medicine must be your creed and your politics, your happiness and misery. Therefore, advise no one to become a physician. If he still wishes to do so, warn him against it, often and earnestly; but if he persists in spite of all, give him your blessing, if he is worth it, for he will need it!" These words are very flattering, and they are also true as expressing an ideal, and it is right and proper for the physician to strive to be all this and even to hope that he may attain to it in time. But he needs modesty, as well as a reverent spirit and an austerity that is superior to sensuality and riches. There are other professions and callings which demand the exercise of self-denial and patience and sobriety and honesty and all the other virtues; and the physician, when he feels an inclination to contemplate his own goodness, should be careful to preserve his sense of humor, as a help in maintaining a proper balance.

News of the Week.

Warning Against a Possible Swindler.—Dr. A. T. Bristow of Brooklyn writes to warn physicians against a man pretending to be a graduate of Berne, who has obtained one of the writer's cards and is using it as an introduction to other physicians from whom he tries to beg or borrow money.

Darwin Celebrations.—The New York Academy of Science and Columbia University are making plans for a celebration in honor of the one hundredth anniversary of the birth of Charles Darwin to be held on February 12, 1909. As this is also Lincoln's birthday and a public holiday appropriate ceremonies can easily be arranged for. The hundredth anniversary of Darwin's birth and the fiftieth anniversary of the publication of "The Origin of Species" is to be celebrated by Cambridge University on June 22, 23, and 24, 1909.

Child Labor Bill for District of Columbia.—A bill prohibiting child labor in the District of Columbia has been reported to the House by the Committee in the District of Columbia, and it is hoped that this will be taken as a model by States proposing to enact similar measures.

Hospital Saturday and Sunday.—The Distributing committee of the Hospital Saturday and Sunday Association has announced that the total amount collected was $82,452. After deducting the amounts for specially designated hospitals there was a balance of $71,000, which has been apportioned among forty-one different hospitals, on a basis of the amount of free service given by each institution. The Montefiore Home and the Mount Sinai Hospital each receive about $7,000, and St. Luke's Hospital, Lebanon Hospital, Roosevelt Hospital, New York Lying-In Hospital, and Post-Graduate Hospital each between three and four thousand dollars.

McKinley Home to Become a Hospital.—The home of President McKinley, at Canton, Ohio, has been transferred to the diocese of Cleveland and will be converted into a Roman Catholic hospital.

Another Roentgen Ray Sufferer.—The list of those who have suffered serious injury as the result of their devotion to Roentgen ray work has been increased by the case of Mr. Ernest Harnack of the London Hospital. Mr. Harnack has undergone three serious operations in the last six months, two fingers and all the lymphatic glands of the left arm having been removed, as well as three fingers and part of the dorsum of the right hand, so that how far, if at all, he will ever be able to resume his work is doubtful. Dr. Hall-Edwards who is incapacitated as the result of similar injuries has been granted a Civil List pension of £120 a year, and the sum of £1,000 has been collected for him by public subscription.

Cocaine Vender Arrested.—Owing to the fact that the use of cocaine had incapacitated several men at the Norfolk, Va., naval station the matter was taken up by the authorities and evidence has been secured against one of the venders of the drug who has been arrested.

Laboratory Table for Research at High Altitudes.—By the conjoint action of the National Academy of Sciences and of the trustees of the Elizabeth Thompson Science Fund a table has been secured permanently for the use of American investigators desiring to work at the International Scientific Station on Monte Rosa. This station offers facilities for work in physics, meteorology, and physiology, but any appropriate research may be carried on there. Applications for appointment should be addressed to Dr. Charles S. Minot, Harvard Medical School, Boston, Mass.

A Pure and Wholesome Milk Supply for Chicago Babies.—Recently the first step toward giving Chicago babies a pure milk supply was taken by Commissioner of Health Evans. Prominent dairy companies held a conference with the Commissioner, and these suggestions were talked over: A plan by which a special supply of milk from a dairy that is under the strictest supervision might be obtained daily for the babies; a scheme by which a certain number of cows—good milkers—might be brought to Chicago and kept here, their milk to be distributed to the babies each day.

Bubonic Plague.—Flores Ontaneda, a well known scientist of Guayaquil, Ecuador, has died as the result of a laboratory infection with plague bacilli. New cases of the disease are being reported daily in Guayaquil. The despatches from La Guayra, Venezuela, assert that the disease epidemic there is not plague, though the reports are somewhat contradictory.

Reception to Professor Schäfer in Washington.—On April 23, Professor E. A. Schäfer, F.R.S., of the University of Edinburgh, delivered a lecture on "Internal Secretion" before the Medical Society of the George Washington University, Washington, D. C. The lecture was followed by a smoker. On April 22, a dinner in honor of Professor Schäfer was given at the Shoreham Hotel by representative educational and medical men of Washington. Brief speeches of welcome were made by President Needham, George Washington University; President Buell, Georgetown University; Dr. Barchfeld, member of Congress; Surgeon-General Wyman, United States Public Health and Marine-Hospital Service; Dr. White, Superintendent of the Government Hospital for the Insane; Professor Shields, Catholic University of America, and Professor Franz, George Washington University, to which Professor Schäfer fittingly replied.

A Farewell Dinner to Prof. August Martin of Berlin will be given at the Hotel Astor on June 10. Dr. Wm. M. Polk will preside. Tickets at the price of $7 each may be obtained from the treasurer, Dr. H. J. Boldt, 39 East Sixty-first street.

Dr. Richard Mills Pearce, Jr., of Albany has been appointed professor of pathology and director of the laboratory of pathology of the University and Bellevue Hospital Medical College. Dr. Pearce was resident pathologist at the Boston City Hospital, 1896-9; instructor in pathology at Harvard, 1899-1900; demonstrator and later assistant professor of pathology in the University of Pennsylvania, 1900-3, and since 1903 has been director of the Bender Hygienic Laboratory at Albany; director of the bureau of pathology and bacteriology, New York State Department of Health; professor of pathology and bacteriology, Albany Medical College.

Dr. Max Verworn, professor of physiology in the University of Göttingen has been appointed by the Prussian Ministry of Education Kaiser Wilhelm professor at Columbia University for the year 1908-9.

For Another Maternity Hospital.—The Grand Jury has filed a presentment commending the administration of the institutions on Hart's Island and Blackwell's Island. Improvements in some of the buildings are recommended, as well as the erection of another maternity hospital.

Mt. Sinai Hospital.—The George Blumenthal, Jr., fellowship in pathology for the current year has been awarded to Dr. Reuben Ottenberg of New York City.

Association of American Physicians. — The twenty-third annual meeting of this organization will be held in Washington on May 12 and 13, 1908, under the presidency of Dr. James Tyson of Philadelphia.

American Medical Editors' Association.—The annual meeting of this society will be held at Chicago on May 30 and June 1.

American Laryngological Association. — The thirtieth annual congress of this association will be held in Montreal, Canada, May 11, 12, and 13, 1908, under the presidency of Dr. Herbert S. Birkett of Montreal. The secretary and treasurer is Dr. James E. Newcomb, 118 West Sixty-ninth street, New York City.

Kentucky State Association of Railway Surgeons.—This organization will hold its fourth annual meeting in Louisville, May 12 and 13, 1908. The secretary and treasurer is Dr. J. B. Kinnard, of Lancaster, Ky.

The New Jersey Homeopathic Medical Society will meet on May 7 at Princeton, N. J. President Woodrow Wilson of the University will address the society.

Tennessee State Medical Society.—The following officers were elected at the meeting of this organization held in Knoxville on April 16: *President*, Dr. Benjamin D. Bosworth of Knoxville; *Vice-President* for East Tennessee, Dr. C. T. Carroll of Cleveland; *Vice-President* for Middle Tennessee, Dr. J. W. Brandon of Clarksville; *Vice-President* for West Tennessee, Dr. W. T. Blanton of Union

City; *Treasurer,* Dr. W. C. Bilbro of Murfreesboro.

Plymouth District (Mass.) Medical Society.—Officers as follows were elected at the annual meeting of this society held in Brockton on April 15: *President,* Dr. Fred J. Ripley of Brockton; *Vice-President,* Dr. Charles S. Millet of Brockton; *Secretary and Treasurer,* Dr. A. C. Smith of Brockton.

Tolland County (Conn.) Medical Society.—At the one hundred and sixteenth annual meeting of this society held in Rockville on April 21 the following officers were elected: *President,* Dr. James Stretch of Stafford; *Vice-President,* Dr. I. P. Fiske of Coventry; *Secretary and Treasurer,* Dr. E. P. Flint of Rockville.

Rock Island County (Ia.) Medical Society.—The following officers were elected at the meeting of this society held in Davenport on April 14: *President,* Dr. T. J. Lamping of Moline; *First Vice-President,* Dr. W. H. Ludewig of Rock Island; *Second Vice-President,* Dr. M. S. Dondonville of Moline; *Secretary,* Dr. H. L. Youtz of Moline; *Treasurer,* Dr. A. E. Williams of Rock Island.

Hampden District (Mass.) Medical Society.—The annual meeting of this organization was held in Springfield on April 21 and the following were elected as officers: *President,* Dr. George L. Woods of Springfield; *Vice-President,* Dr. C. W. Jackson of Monson; *Secretary and Treasurer,* Dr. R. S. Benner of Springfield.

Death of Professor Schroetter.—Professor Leopold Schroetter, Ritter von Kristelli, died suddenly on April 21 after delivering the inaugural address at the International Congress of Laryngology in Vienna. He was born in Graz in 1837, and had held numerous academic and hospital positions, and was the author of many books and papers, mainly on laryngological subjects. He was in attendance on Emperor Frederick at the time of his death.

Obituary Notes.—Dr. Charles J. Towne of Essex, Mass., died on April 15 at the age of sixty-seven years. He was born in Stoddard, N. H., and received his medical education at Dartmouth. He first practised in Richmond, N. H., but four years later removed to Townsend, Mass., where he remained until about thirty years ago, when he came to Essex.

Dr. A. G. Oyen of Petoskey, Mich., died on April 18 at the age of fifty-seven years. He was born in Macon, Mich., and in 1883 received his medical degree from the University of Michigan. He had practised in Petoskey for twenty-two years.

Dr. Henry T. Legler of Oakland, Cal., died at an advanced age on April 15. He was born in Dresden, Germany, but early came to this country and had practised in California for many years. For ten years he was County Physician of Alameda County.

Dr. Ezekiel Morrill of Concord, N. H., died on April 18 at the age of seventy-one years. He was born in Chester, Ohio, and received his medical education at the Castleton Medical School and the Cleveland, Ohio, Homeopathic Medical School. He served as surgeon in a New Hampshire regiment during the Civil War, and then practised for a time in Salem, Mass. He removed to Concord in 1874, and was elected to the New Hampshire Legislature in 1905.

Dr. Edward Dowd, recently of Babylon, L. I., and also of Winnetoon, Neb., died on April 27 at Danville, N. Y. He was a graduate of the University of Iowa Medical Department.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described with remarks on their appropriate treatment.

————, Louisiana.
January 18, 1908.

Dear Doctor:

To-day I went to see Dr. ———, who has always been our physician, to ask what I should do to get relief from a distressing symptom that has fastened itself upon me during the past year, and he advised me to consult you. Before making the journey to New York I should like to give you a brief outline of my infirmity and to ask you what hope you can hold out to me that I shall again be well and happy. I say it is during the past year that the most disagreeable symptom has come, but in reality I have had symptoms for a longer period than that. It is only latterly that it has begun to interfere with my work and to menace my joy of life. It is difficult for me to describe my condition: While I am at work in my study, intent (though perhaps not wholly) upon some problem that interests me, my breathing seems to stop. The more I concentrate my attention the greater is the disturbance of respiration and this, of course, distracts me. I try to push it out of my mind, as it were, and to get down to the matter before me, but, as soon as I succeed in doing so, my breathing hitches or stops. I then begin to experience a sensation of nervousness and obscure apprehension and I have to give over my occupation and go out-of-doors or get diverted in some way. There seem to be variations of the disturbance of breathing. For instance, I want to know the time; I look at my watch but before I am sure of the exact time, *i. e.* while I am coming to a conclusion, the breathing seems to stop. While reading I am often nervous and I have to practice breathing in a sort of surreptitious way in order to read. While drinking water I have to stop at the end of a swallow and then start again.

Then I have difficulty in making up my mind or at least in convincing myself that I have done certain acts. After writing a letter and having addressed the envelope, I will look many times before being convinced that I have signed and addressed it properly. I lock the door and then am not satisfied that it is fast; and the same thing is true of the windows. The minute that my hand leaves the door or fastening I am assailed with doubt.

I have always thought this was a species of nervousness; now it is associated with fear, want of confidence, lack of certainty, and mind wandering. When I have done something I am not sure of it, and the effort to make sure of it disconcerts me thoroughly. The fear not to use the right foot when starting and when going in and out of doors, and of not giving and receiving things with the right hand annoys me a great deal. I argue with myself and convince myself that it is "Miss" and not "Mrs." but as soon as I have apparently convinced myself the conviction deserts me and I must begin anew. After I have put the letter in the envelope I have to take it out and replace it time and time again before I am sure that it is in proper form, and after it is stamped and sealed and in the mail-box, I am worried to know whether it is properly stamped and sealed, and I have had to wait for an hour or more until the collector came to open the box.

I am very much bothered and worried at times

to know whether the paper on which I write is free from having been written on before, and I turn the paper on which I am writing over and over before I am convinced. Superstition as to time, things, minutes, and days, extreme conscientiousness as to exactness in every detail worries and perturbs me. When I start off with my right foot, though I see the moving of the foot I have no consciousness that the foot has moved, the act is finished while the mind is in doubt. When I am giving things out of the right hand, as soon as the thing is given the act is doubtful and I want the act repeated, though the repeating might not be more impressive.

I am afraid you will think I am crazy, and indeed, I often ask myself if it is not true that I am losing my mind. Apparently I am in possession of my faculties and my conduct is in conformity with such possession. Only a few persons know anything about my affliction, and I nurse the hope that I can, with the aid of your skill, rid myself of it without notoriety.

I suppose I should tell you something about myself before I proceed further to describe my complaint. I am 29 years old, unmarried, and a clergyman of the Presbyterian church. I do not officiate in this capacity for I hold the position of Assistant professor of history in ——— University, to which I was appointed after I finished my graduate work in that institution four years ago. I am fairly successful as a teacher when my health permits me to discharge my duties, but last autumn I was obliged to ask for leave of absence and come here to my former home to see if I could pull myself together.

This complaint that I have has been developing for some time. I can see now that certain feelings, doubts, and compulsory notions that I had as a youth were really forerunners of many of the symptoms that I have nowadays. As a boy I was sensitive, shy, and retiring, at least apparently shy and retiring. In reality I was not shy, for when in the presence of intimates only, I could assert myself. I was not very popular at school save with a few, but I believe now this was because of a certain preciosity which I looked for in others and which I am now glad to believe is uncommon. I was a pious boy and walked in the fear of the Lord. Indeed, one of my first worries was whether or not I had an adequate awe of the Lord. Another was what might happen to me if I told a lie. This latter led to a literalness of speech that gave me the reputation of being affected and pedantic. I blush now thinking of the period when I felt obliged to conform to the Biblical injunction that verbal intercourse should be limited to yea and nay. But these were only passing fancies as were so many others that I had, and which I suppose are common to an emotional, high-strung youth. Meanwhile I had a facility for learning which often gave rise to favorable comment. It must have been about my fifteenth year that I began to worry about nocturnal emissions. I didn't know what they meant and I was afraid to ask, as I believed they were peculiar to myself and in some way connected with personal inadequacy or insufficiency. I think now that the feeling I had was one of shame more than anything else, for I recall distinctly that I was very much embarrassed by and ashamed of the hair that had grown on different parts of my body, and I got myself very much wrought up considering what would happen if anyone found out about it. I was always inclined to blame myself for anything that happened that I didn't understand. Perhaps I should convey my meaning better were I to say that I was self-deprecatory, yet I was by no means unappreciative of my ability to do things, nor did I falsely estimate my judgments, but some way or another, when anything happened to cause a disagreeable feeling tone, as it were, I felt that it would not have happened, if I had been like other persons.

About this time, *i. e.* when I was about 16 years old, I got very much concerned about the meaning of things which everyone takes for granted, such as why do two and two make four, why do things look real, and so on through a long list of interrogations. I can't begin to tell you of all the silly ideas that came into my head and kept me from having that joy of youth and health which my companions had. I think, however, that if my parents had had any notion of what was going on in my mind they would have seen that what I needed most was to stop trying to solve the riddle of existence, and to try to live without questioning. I am willing to do that now, and I have disciplined myself to stop being an interrogation point. I wish my father had either sent me off to school or made me do all sorts of things that would have developed within me a taste for sport or athletics. But he was absorbed in an invention which he was trying to perfect and which would revolutionize the cotton business, and apparently had little time for his family. My father was rated a brilliant man and the reason why he did not win out was that he was not "practical."

While I was in college I seemed to have got rid of my vagaries and I look back upon that period as one of great happiness. I formed some intimate friendships and many pleasant personal relationships, and it was with the greatest satisfaction that I saw the roadway of life leading back to ——— (the University town), after I had taken orders. But now I am in despair. You can have no idea of how incompetent I feel to throw off the trammels of this incubus that has fastened itself upon me. It is useless to tell me to learn to think straight, to use my will-power, to divert myself. I have done all this with my whole strength and I am no better. In fact, here I am apparently in perfect health, and to all intents and purposes of sound mind, yet incapacitated.

"My fortune standing in the precipice
'Tis counsel that I want and honest aids."

Yours truly,

——— ———.

P. S.—It has occurred to me that I should try some sort of mind cure. What do you think of it? Do you think I can look forward with any confidence that I shall get well? You know "the miserable have no other medicine but only hope." ———.

New York, February 12, 1908.

Dear Sir:

In reply to your letter of the 18th inst., I am in somewhat of a quandary whether I shall tell you the name that we physicians give to the disorder from which you suffer, or whether I shall endeavor to put before you certain rules of life and conduct, conformation to which may restore you to a life of usefulness and comparative happiness. If I do the first, you may be led to look up the writings upon the subject, and applying the statements to be found therein to yourself, to take a distorted view of your disorder, and possibly reach the conclusion that the way out of the wilderness is so intricate and obscure that you will not come safely to the end. You know, I am sure, that few things

warp our judgment so much as illness, and especially illness within the mental sphere. There is a custom that few physicians transgress, and that is not to undertake to treat themselves when they are ill—it matters not the nature of the ailment. The physician whose training and life-habit it is to deal with disease, finds that this is the safest and most expeditious course to pursue in order to regain health, and it is probable that the layman can safely follow his lead. I shall therefore be very frank with you in the discussion of your infirmities, and endeavor to put before you the nature of your disorder in such a way that you will comprehend it. Nothing aids the physician so much in his fight with disease as intimate acquaintanceship and full understanding of the nature of the disease, and when he comes to deal with a disorder whose cure requires not only the cooperation of the patient but also his most intelligent initiation and aid, it is of the greatest value that the patient should have a fairly clear conception of it as well.

The symptoms which you describe have probably been known to physicians since the beginning of medicine as a practice and as a science; not that we find them mentioned in medical literature of the ancients, but because we frequently read in the biographies of men whose names have become more or less immortal, of many of the symptoms that you describe. Men and women of genius, men and women who write their names indelibly upon the scroll of time, are usually individuals of nervous temperament, of neurotic constitution, of neuropathic diathesis, and although it is in spite of and not by virtue of this that they achieve fame and add to the luster of their times and to the welfare of the world, nevertheless it would seem that the greatness of their endowment nearly always carries with it the drawbacks of such a temperament. I do not by any means intend to convey the idea that men of genius need necessarily have symptoms such as those that you relate; fortunately for them and for us,—as inhibition is never the strong point of genius,—they do not.

It is only latterly, however, that physicians have realized that symptoms such as those that you relate are the expression of a neuropathic diathesis or constitution which has not been properly disciplined, by hygienic measures, that is to say which has not been developed toward a normal condition by the most approved modes of treatment during the formative years of the individual's life. During the past few years much study and attempt at interpretation has been made of these symptoms, with the result that following the lead of a French physician, Janet, many of us look upon these symptoms as indicative of an hereditary, constitutional, idiopathic (meaning thereby one that develops without apparent antecedent cause) disorder of the nervous system. When I use the word nervous system in this sense I mean the entire nervous organism, a large part of which is made up of the brain. Therefore it is called a psychoneurosis and to this psychoneurosis the name Psychasthenia is given. The name is not particularly appropriate, as it indicates only that there is a weakness of the mind. One reason why it has seemed the more appropriate perhaps is that neurasthenia, which indicates a weakened or exhausted condition of the nervous system, has found its way into everyday speech and conveys a more or less definite meaning. In fact, the advent of the term psychasthenia has had much to do with narrowing our conception of neurasthenia and making the condition to which it is applied a well-defined one.

You will gather from what I have said that psychasthenia is like the poets,—born, not made. It is quite likely that anyone may develop certain definite fears, some obsessions, stereotyped modes of worry, of doubting, of questioning, etc., the possession of which does not necessarily mean that the individual has psychasthenia, but an individual whose usefulness becomes impaired by a group of mental and emotional symptoms made up of obsessions, imperative concepts, fears, doubts, anguish, compulsory movements, enfeebled will-power and disturbed peace of mind and who develops these symptoms comparatively early in life without adequate cause, and who, like yourself, has his vocation disturbed and his career seriously threatened, may legitimately be said to have psychasthenia. But you ask, "Why should I have it and from whence does it come?" You have not outraged any of Nature's laws, you have not been so unfortunate as to encounter accidentally any of the salient factors from which disease flows. Psychasthenia comes like your birth—without your will and without your leave. It, like a few other constitutional disorders of degeneracy, such as migraine, hysteria, and epilepsy is but a manifestation of a disturbance in the great synthesis that goes to make the individual. In other words it is an evolutionary defect.

The problem that we neurologists most frequently have to confront, is how to arrange the life of the burdened individual who consults us, so that his career shall not be a failure and the sum-total of happiness which should be his shall not be curtailed. Unfortunately, we do not get the individual, as a rule, until very late in the day, until after he has fully matured and is a creature of fixed habit. We are in the position of a skilled watchmaker who has been handed a chronometer of which every part seems to be perfect, but still it will not do the work for which it was intended, or, at least if it does the work, it proves erratic and unreliable. The watchmaker gives very little satisfaction if he says that a certain bit of steel used in the construction was not adequately tempered, or a certain coiled spring was not properly annealed, he must do something that will make the watch keep time reliably and in order to accomplish this he must almost always attack it fundamentally; he must take it to pieces and proceed from the very foundation. A somewhat similar course must be pursued by the physician who essays to treat such constitutional disorders as psychasthenia. He must attack the individual fundamentally; he must dissect his character; ferret out the primordial origins of his false-beliefs, analyze the remote antecedents of his first obsessions, go back to the early times when it was admitted that effect naturally followed cause, and perhaps more important than all, try to put clearly before the individual examples of real humility and show him his own inconsequentiality. He must convince himself that there are certain unavoidable things in the world which everyone of a neurotic, emotional temperament finds disagreeable, but that in reality they make very little difference to any one save the individual himself, and that the safest and surest thing for him to do is to cultivate the habit of indifference towards them. In other words you must get yourself and the world, or your environment in the right perspective. Except to a few, you are of no importance whatsoever. You must realize that save to the few persons that constitute your family, your welfare does not concern anyone. Treat yourself if you can as the world treats you, as too commonplace to be noticed!

Adopt this attitude towards your symptoms, or if you must attack them one after the other, consider that you run the risk of accentuating them by giving them too much consideration. To be be quite normal one must emulate the young child or the animal and be unselfconscious. You know there was a time when even the germs of these distressing ideas and sensations that you now have did not exist. Therefore, endeavor to determine what their antecedents were, and having found them treat them as an enemy; have no commerce with them save to effect a truce. It is largely a matter of self-cure, particularly for a man who like yourself has the dual advantage of intelligence and a trained mind. You will be assisted in the matter by a course of appropriate reading, carefully selected and faithfully carried out. An adequate philosophy is, in reality, what you are in search of, and I should recommend to you a careful study of Aristotle and Epicurus. You can find amongst the writings of the latter this statement: "We should not be hampered by foolish fears from attaining the goal of our existence—happiness. Pleasure is the highest good; not the pleasure accompanying a passing sensation, but pleasure as a permanent state,—that state of deep peace and perfect contentment in which we feel secure against the storms of life. The pleasures of the mind are preferable to voluptuousness, for they endure; while sensations vanish away like the moment which procures them for us. We should avoid excess in everything, lest it engender its opposite, the permanent pain resulting from exhaustion." You will, I am sure, find the teachings of this philosopher, if approached in the right spirit, of the greatest comfort to you.

If you can take the point of view that Aristotle took, that the mind does not originally possess ready-made ideas but the faculty of forming them, it will help you very much in getting rid of these obsessions that have fastened themselves upon you like barnacles on the bottom of a boat.

What shall you do directly to help yourself? You must make a firm resolution that you will at certain times in the day dislodge them from your mind by force of will alone and each time make the dislodgment complete. A repetition of this will make for the ease with which they are successfully dissociated and the length of time which they remain away. You will find, moreover, the greatest help from translating your thoughts into some form of action, *i. e.* of not bottling up your thoughts and turning them over and over in your mind. In other words, if you are able to display your thoughts in speech, in efforts for the benefit of others, in anything that has a definite purpose, in sport, etc., it will be of advantage to you.

You have no doubt heard of cures that have been made by Christian Science and other modes of supernatural healing. It is in cases such as yours in which simultaneous bolstering of the will-power and obscuration of the Ego is required that they often accomplish more than we physicians are able to do. You will undoubtedly have suggested to yourself that there is a port of safety for you in the harbor of that cult, and I shall say nothing to you to discourage you from turning your sail in that direction if you can reconcile an espousal of the most nebulous and mystic parts of neoplatonism with your intelligence. I deem it fitting, however, to warn you against the rival camp which is now putting forward claims for recognition as a hygienic force. You have no doubt heard of an effort on the part of some Churchmen to combine the treatment of disease with their own legitimate work, that of public ministration in the Christian Church. There is nothing new under the sun! Nearly 800 years ago the Church and the practice of medicine were forcibly rent asunder by the first Lateran Council during the pontificate of Calixtus II. Things had reached such a pass that even the Twelfth Century wouldn't stand it. Though in this modern instance the advocates cannot be accused of "Ordinis sui propositum nullatenus attendentes pro detestanda pecunia sanitatem pollicentes," they claim to do that which they maintain that honest men of ability backed by the training of a lifetime cannot do, and they gratuitously assume that "if medical science is to regain the esteem of the world, it must take the ground that for the great majority of the ailments that afflict American humanity, the contents of the pharmacopœia are of very limited efficacy, that for these the directly curative agencies must be moral and psychical." The only agencies that they call to their aid are: Suggestion, Subconsciousness, which is especially amenable to control from without, Faith, and Prayer. So far as I can see, the only one of these that is not in hourly use by the physician is the last. It must be a much more efficacious agency than is generally believed if it alone accomplishes all that the Emmanuel Church movement advocates say that it does, for surely, being clergymen and not physicians, without natural predilection and without special training they cannot use the tools of our profession more skillfully than we can ourselves. Yet despite the poverty of their therapeutic resources their cures read like the testimonials that set forth the efficacies of "Father James' Medicine" and "Barnum's Safe Spleen Cure." About 70 per cent. of alcoholism, says their reverend spokesman in a recent magazine article, is amenable to suggestive treatment—Credulity where is thy limit? Gullibility where is thy confine?

Christian Science represents an attempt at revival of the emanistic pantheism which was the fundamental conception of Neo-platonism. The Emmanuel Church movement represents an attempt at revival of a custom of the dark ages. I hold no brief for the members of my profession in this matter, but I have no hesitation in saying to you that it is purely a gratuitous assumption on the part of the reverend director of the Class for the Moral Treatment of Nervous Disorders, Boston, that medical science has lost the esteem of the world. This assumption is just as true and no truer than the statement that the "effort is scientific" (meaning the Emmanuel Church movement), or that "the movement is an attempt to weld into alliance the most progressive neurological knowledge and a primitive New Testament Christianity." If any such attempt is being made no evidence of it has been brought forth. As a matter of fact, the science of medicine and the art of therapeutics are to-day the envy and the wonder of the world. Once we conquer cancer and find an antidote for alcohol, we will know just how Alexander felt immediately before the sudden gush of tears that has become so famous. You might think from the lucubrations of the supernaturalists that the world is not only filled with folly and sin but with psychasthenia, incipient insanities, simulated epilepsy, hypochondria, anemic headaches, functional insomnia (whatever that may mean), melancholia, to enumerate only a few of the Christianity and Health Series. But as a matter of fact, as soon as our hospital train passes the psychoneurogenetic belt of

Boston and Chelsea in its journey out to meet the ailing and infirm people of the United States, these maladies and all the others which he mentions, but which I haven't copied, play comparatively a small part. Perhaps I have no justification in making this remark, having had only twenty-five years' experience with nervous and mental disease gathered from all over the country, and no experience whatever in clerical matters.

Our stay in this vale of tears is but a preparation for the life above, unmeasured by the flight of years, and the amount of preparation needed by us is so great that I believe your cloth hasn't time to practise medicine. The truth of the matter is that a man like you should no more need an outsider's help to overcome his symptoms than he would to cure him of swearing or of boasting, of a belief in ghosts, or in spiritualism. You wouldn't send for a surgeon if, having a thin skin, you got a sliver in your finger. You would set to work to remove it yourself, and in nine instances out of ten, you would succeed. You may be sorry for yourself because you have a thin skin, but you soon learn to take precautions not to injure it. You need to look back and discover the beginnings of your various doubts, fears, obsessions, and aboulias, and root them up one by one. If you can't get the right perspective, come to see me. I advise you to return to your work. The disciplinary plan of treatment which I want you to go through can be done just as well, if not better, while you are at work than when you are idle, and it is always wise to regain your equilibrium in the atmosphere and environment in which you are going to live. Possibly when I see you I shall have something to say of certain physical measures, such as exercise, bathing, occupation, play, diversion, and their relation to mental and emotional equanimity, but as you say nothing about your bodily health in your letter, I shall hold these in reserve.

Yours very sincerely,

P. S.—Have you ever read the life of a first-class hypochondriac like Carlyle, or of a typical neuropath like Flaubert? It might be an excellent thing for you to do.

Correspondence.

THE OPTOMETRY BILL.

AN APPEAL TO THE MEDICAL PROFESSION OF NEW YORK STATE.

To the Editor of The Medical Record:

Sir:—The Legislature has passed a bill creating a profession of optometrists, and it is up to the Governor to sign or not to sign as the merits of the case appeal to him.

The bill, which is Senate Bill No. 1033, creates a board of examiners of "five persons who shall possess sufficient knowledge of theoretical and practical optics to practise optometry and who shall have been residents of the State actually engaged in the practice of optometry for at least five years." It provides that any person who has been engaged in the practice of optometry for two years next prior to the passage of the act, may receive a license without examination, upon recommendation of the board of examiners.

This bill is an invasion of the sphere of medicine in one of its most important branches, and confers privileges on certain people, which, in accordance with the wording of the act, they are utterly incompetent to exercise. The bill grants to opticians the right to adjust lenses to people's eyes in need thereof, and denies them the right to use drugs. Without the use of drugs, in certain cases, even the most competent physicians cannot properly adjust lenses to the eyes, especially in children, and great harm can be produced by attempting such practice without using drugs. The knowledge of optics alone, however extensive, does not render a person competent to do the work this bill would give opticians the right to do. To examine the eyes and adjust lenses one should have a knowledge of anatomy and physiology at least, but this bill provides only for a knowledge of optics. The many diseased conditions which may influence the eyes and vision are not considered at all. The ability to make a diagnosis is necessary to enable one to discriminate between visual defects due to diseases, and those due solely to optical errors, both of which often exist at the same time, and this ability requires more than a knowledge of optics. The passage of this act denotes gross and inexcusable ignorance on the part of members of the Legislature, or an utter disregard of the welfare of the community.

It is a most vicious type of special legislation in that it permits an examining board of five members to discriminate between opticians who apply for certificates of exemption. The recommendation of this board is necessary before these certificates can be granted, and this board can limit its recommendations to a chosen few. If the physicians of this State will go on record with the Governor, opposing this bill, it will never become a law, and it is hoped that they write at once, urging the Governor to withhold his approval.

Frank Van Fleet, M.D.,
Chairman Committee on Legislation, Medical Society of the State of New York.

Walter E. Lambert, M.D.,
Member Committee on Legislation, Medical Society of the County of New York.

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(Special Report to the Medical Record.)

TRYPANOSOMIASIS—SANITARY WORK IN HONGKONG—POISONOUS SNAKES IN JAPAN—INOCULATION OF BACTERIAL VACCINES—THE LIVER IN SCHISTOSOMIASIS—JELLYFISH STINGS—OIDIOMYCOSIS—ANIMAL PARASITES OF MAN—AUTOPSIES AT THE PHILIPPINE MEDICAL SCHOOL—INFANTILE BERIBERI—CAUSES OF THE REAPPEARANCES OF CHOLERA—DIFFERENCES IN THE STRAINS OF CHOLERA MICROORGANISMS.

Manila, P. I., February 28, 1908.

The first scientific session of the fifth annual meeting of the Philippine Islands Medical Association took place at 3 P. M., February 27, in the lecture room of the Philippine Medical School.

The actual work of the fifth annual meeting of the Philippine Islands Medical Association was opened by a clinic at the Army Division Hospital, which was given by the staff of that institution for the visiting delegates and members of the association. The clinic, which proved to be most instructive, was begun by an operation for abscess of the liver by Captain and Assistant Surgeon Thomas L. Rhoades. Unfortunately, however, the abscess could not be located, so that the operation was rather an exploratory one. The patients in the medical ward were then visited. A large number of cases of the various forms of intestinal infection were shown, more especially cases of amebiasis, bacillary dysentery, and uncinariasis. A particularly interesting feature was the demonstration of hook worms in jars partially filled with wet sand. Dr. Ruffner, who was in charge of the ward, stated that they had returned to the ipecac treatment for dysentery and had very successful results with the same. He administers a medium dose of opium, which is followed within a few hours by a maximum dose of one of the preparations of ipecac. This treatment is repeated as often as may be necessary. Dr. Whitmore showed a number of cases in which bacterial vaccine had been used with marked success, more especially cases of gonorrheal rheumatism.

The first paper, entitled "Human Trypanosomiasis in the Philippine Islands: First Reported Case," by F. H. Willyoung, from the Biological Laboratory, Bureau of Science, was read by title only. Mr. Willyoung had observed these trypanosomes in one of the slides which were taken primarily for the purpose of making diagnoses of leprosy. The particular slide in question, however, was not examined until he returned to the laboratory, where he noticed these trypanosomes, which were later tentatively diagnosed as *Trypanosoma gambiense*. At the time of the meeting Mr. Willyoung was in the provinces endeavoring to find the particular person from whom the specimens were taken in order that the same might be verified.

The next number on the program was a brief address by Dr. Francis Clark, Medical Officer of Health and delegate from His Britannic Majesty's Colony of Hong-

kong, in which he gave a brief outline of the sanitary work in Hongkong. He stated that they were combating plague now upon the theory that it is only conveyed by the means of rats and rat fleas, but that up to the present time they had been unable completely to eradicate this disease from Hongkong. He attributed the failure principally to the fact that some 4,000 or 5,000 persons travel daily between Canton and Hongkong, and as Canton is well known as one of the most insanitary places in the world, where practically all the major communicable diseases are encountered at all times, the direct result is that Hongkong is continually infected from that city. He related one instance in which plague occurred in a five-story building in a room in which, upon investigation, was shown to be the only one in the building in which the grating from the drain pipes had been removed and which in all probability had admitted infected rats into the apartment.

His remarks with regard to the disposition of night soil were particularly interesting in view of the fact that the removal of this refuse, instead of being a source of outlay to Hongkong, is a source of great revenue, being let by contract to the highest bidder, and brings as much as $70,000 ($35,000 United States currency) annually. Contrary to the general belief, Dr. Clark stated that this night soil is not used for the purpose of fertilizing vegetables, but is put into pits in the country districts, where it remains for six months or more, after which it is used for fertilizing mulberry trees, and, of course, there is no objection to this, because nothing edible is taken from the trees.

The next paper was read by Professor Taichi Kitajima, M.D., Infectious Diseases Institute, delegate from His Imperial Japanese Majesty's government, entitled "Poisonous Snakes in Japan." He stated that snake bite was treated by making a serum for the respective snakes by the same method as is used by Yersin in making anti-snake venom for cobra and other snakes in India.

The next paper, entitled "The Inoculation of Bacterial Vaccines as a Practical Method for the Treatment of Bacterial Diseases, with Special Reference to Infections with the Gonococcus," was read by Dr. E. R. Whitmore, Captain and Assistant Surgeon, United States Army. Dr. Whitmore's paper was of particular value, because he had previously shown his cases at the First Reserve Hospital, upon which he had used bacterial vaccine, and which showed most conclusively the excellent results which may be obtained by this method. He gave histories of a number of cases of furunculosis, and gonorrheal arthritis in which he had used the vaccine with excellent results. One of the most striking cases which he cited was that of a case of gonorrheal arthritis, which had been treated in the First Reserve Hospital for more than three months with all the therapeutic measures which are ordinarily recommended for this disease, but without effect. Dr. Whitmore then injected vaccine made from the patient's gonococci, and in less than twenty-four hours he showed marked symptoms of improvement, and was entirely free from pain, and had the first comfortable night he had had in many weeks previous. The second day the patient expressed himself willing to return to duty, and he was actually discharged within ten days from the time the treatment was given him.

The next paper read was that by Captain J. M. Phalen, Assistant Surgeon, United States Army, entitled "Notes on the Condition of the Liver in Schistosomiasis." He reported one case which was admitted to the Division Hospital January 16, 1908, and died the following day. An autopsy was performed three hours after death, but no macroscopical alterations were detected in any of the organs, with the exception of the liver and spleen, which were found to be moderately enlarged, the latter being somewhat adherent. The liver presented pale patches over its surfaces and minute whitish nodules which varied in size from a mere point up to the size of the head of a pin. On excising and crushing these nodules oval eggs were found measuring approximately 70 by 40 microns. Sections were stained with hematoxylin and eosin and with Bismarck brown, and upon examination were found to stain deepest in the center, which was composed of an indefinite mass of nuclei, red blood cells, and fibrin. These nodules were apparently walled off from the rest of the liver structure by connective tissue capsules. He stated that the difference in pathology between *Schistosomum japonicum* and *Schistosomum hematobium* depended upon the location of the parasites; the one in the venous and the other in the arterial side of the portal circulation, and, second, on the morphological difference in the ova.

The next paper was that by Dr. E. H. H. Old, Assistant Surgeon, United States Navy, entitled "Observations on a Series of Cases of Stinging by Jellyfish." Dr. Old reported nine cases which within half an hour after the persons were stung by the jellyfish, were affected with cough, serous expectoration, and in some cases this was slightly tinged with blood. The place at which the sting took place was generally a slightly raised and visculated, red area, which "wept." There were severe pains in the back and at the point at which the stinging took place. The patients also complained of nausea, and in some instances showed hysterical symptoms. Apparently a short rest in bed with some palliative treatment resulted in recovery. He reported one case in which death occurred within three hours after being stung.

The second scientific session was held at 10 A. M., on the morning of February 28. The first paper, entitled "Oidiomycosis in the Philippines," was read by Dr. Henry J. Nichols, Assistant Surgeon, United States Army. He stated that considerable attention has recently been directed to the group of diseases caused by closely related fungi, the life history of which resembles that of protozoa. This group includes local and generalized blastomycosis and coccidioidal granuloma. A comparison of the organisms isolated for this purpose lead Ricketts to conclude that they were all species of one genus, for which the general term oidiomycosis was suggested. He stated that blastomycotic infection of animals and man and possibly a coccidioidal infection in man were present in the Philippines. According to local veterinarians blastomycosis was specially prevalent during the years 1901 to 1903, when many horses were killed on the supposition of the presence of true glanders. He stated that Strong had found a case in a native and that Shattuck had noticed two cases out of thirty-four ulcers examined and that the last Army Board on Tropical Diseases had reported a case in a quartermaster's employee which was of two years' duration. The lesions occurred on the face and somewhat resembled ringworm. He reported one case of an obscure lung infection. The patient is an American, an enlisted man in the army, who, in the year 1899, while in the Philippines, developed an elevated sore on his left shin, which he attributed to wading in the rice paddies. The sore gave him considerable trouble and he went into the hospital, where he was treated for about six weeks, the sore being cauterized with carbolic acid and finally healed. Six months later he had an attack of chills and fever with cough and expectoration, and has never been entirely well since. He enjoys good health for a few months and then suffers a month or two from fever with pains in the chest and expectoration. An examination of the sputum was made and found to be blood streaked. Examinations for tubercle bacilli were invariably negative, as well as inoculations into a guinea pig. The blood was examined for malarial parasites with negative results. The sputum on sedimentation showed numerous round bodies from 20 to 30 microns in diameter, which were surrounded by thin capsules. They were easily distinguished from myelin granules or mucous or fat globules. A monkey was inoculated in the peritoneum, and after a month was chloroformed, and a fluctuating nodule about the size of an egg was found on the abdominal wall and adherent to the intestine. The pus contained many large cells filled with small round bodies not eosinophilic. Several subsequent inoculations of guinea pigs and monkeys showed the same bodies. This fungus has separate mycelia and aereal hyphæ and grows rapidly on glycerin or glucose agar and potato, but very slowly on ordinary agar. In bouillon a flocculent mass forms at the bottom of the tube. Sugars are not fermented. In these respects it conforms closely to the description of cultures of coccidioidal granuloma. The only difference is the production of green, yellow, and brown pigment on glycerin agar. One of the striking features of the pus from these inoculations has been the presence of raylike structures. The similarity of these rays to those of actinomycosis has been mentioned by Montgomery and Wolbach.

The next paper read was that of Dr. Philip E. Garrison, Assistant Surgeon, United States Navy, and Assistant Professor of Tropical Medicine, Philippine Medical School, entitled "The Prevalence and Distribution of the Animal Parasites of Man in the Philippines, with a Consideration of Their Medical and Economic Importance." Dr. Garrison gave a statistical summary of the parasites which were most numerous in the Philippines and showed that among the prisoners of Bilibid some 4,000 in number, were examined, and over 60 per cent. were found to be infected with one or more parasites, the commonest infection being with the ankylostoma, and he invited particular attention to the excellent results which had been obtained in reducing the general mortality and morbidity of the prisoners by treating all the infected persons for their parasites, the death rate being reduced from 60 to 15 per thousand.

The next paper was "A Report on the First One Hundred Autopsies at the Philippine Medical School," by Dr. Philip A. Gilman of the Philippine Medical School. Dr. Gilman's report was particularly valuable in that it showed

that over 50 per cent. of the victims showed well-marked signs of tuberculosis, and that more than 30 per cent. were found to have lesions of amebic dysentery. This latter fact was particularly interesting because it has heretofore been generally believed that the natives did not suffer to any extent from amebæ, but from the figures given in his paper it would seem that they are probably as much affected as the white men.

The next paper read was entitled "A Case of Infantile Beriberi, with Autopsy Report," by Dr. José Albert, Professor of Pediatrics, Philippine Medical School. The patient in question was three months of age and was one of the first that has been authentically reported from the Philippine Islands.

The next paper on the program was a brief address by Dr. Cheng Hao, delegate from His Imperial Chinese Majesty's government. He stated that China was at last beginning to adopt many of the sanitary measures which had been found so useful in other countries, and that in the next ten years considerable progress in this direction might be looked for in the Celestial Empire.

The next paper was that entitled "Some Considerations with Regard to the Cause of the Frequent Reappearance of Cholera in the Philippine Islands, with Statistics Beginning with the Outbreak in 1902 to January 1, 1908," by Victor G. Heiser, M.D., Director of Health for the Philippine Islands, Chief Quarantine Officer and Passed Assistant Surgeon, United States Public Health and Marine Hospital Service. Dr. Heiser stated that at first sight it would appear that by the diffusion among the masses of the plain, simple fact that cholera can be contracted only by introduction into the mouth of contaminated food or drink, the disease should have been eradicated from the Philippine Islands before this time; but he invited attention to the fact that the climate is favorable for the development of the cholera organism throughout the four seasons of the year; that the mass of the population are ignorant and inaccessible, and that much superstition exists; that one of the most popular beliefs is that boiled water is injurious; that the habit of eating large quantities of uncooked food with the fingers is almost universal; that on account of over 60 per cent. being inflicted with intestinal parasites it is shown that they are very liable to contract any other intestinal disease with which they may come in contact; that the people are physically weak and unresistant; that practically all the drinking water is obtained from shallow surface wells, from which it may be seen that the disappearance of cholera up to the present time could scarcely be hoped for. The main object of the paper, however, was to account for the reappearance of the disease several months after it had apparently completely disappeared. He stated that at least three outbreaks, viz., those of August, 1905, June, 1906, and August, 1907, were regularly preceded by suspicious deaths in which the symptoms closely resembled those of cholera, but in which the cholera organism could not be demonstrated, but that each succeeding case became more and more typical, both clinically and at autopsy, until finally the cholera organism could be demonstrated in the intestinal discharges. He stated that the outbreaks in the provinces of the Philippines seemed to be invariably traced to Manila, but that the cases occurring in Manila were not traceable to an outside source, in consequence of which it would appear that the disease must originate in this city. In view of the fact that the cholera organism so far as is known is only capable of being propagated in a wet medium, the only place in which it could exist would be the city water supply or in the city sewer system. In view of the limited number of cases occurring in the city of Manila, the city water supply may be dismissed from consideration, and it would appear that the sewer is the only place in which a constant wet medium could be had throughout the year. With this object in view, examinations were made of the city sewers and cholera organisms were detected in them. This led to the following hypothesis:

That the cholera organism is continuously present in some form in the sewer system of Manila; that at certain stages of its atypical form by passage through the human intestine or otherwise, it first is capable of producing a disease resembling cholera, but the organism cannot be recognized by the present laboratory methods; that successive passages through the human intestine produces a typical cholera vibrio; that possibly the disease disappears owing to the population gradually becoming immune by eating fish and other sea products which have been taken from cholera-infected waters, or drinking the water itself, all of which contain cholera organisms or their products which become attenuated by the treatment which such food products receive. An immunity of this kind appears probable from the fact that cholera organisms continuously passed through living susceptible intestines either increase or retain their virulency, which would cause the mortality among those attacked throughout an epidemic to remain the same. That the reverse, however, is the case, may be seen by referring to the history of the cholera outbreaks in the Philippines and in other countries (the rate at the beginning being from 90 to 100 per cent. and soon falling to 40 per cent. or below), so that the decline in the mortality would seem to be due rather to the acquired resistance of the individual than to the change in the cholera vibrio.

It appears probable that the cholera organism is conveyed either directly or indirectly from the sewers to easily contaminated articles of food or drink by the means of roaches, either by direct mechanical contact with their feet or bodies, or by the deposition of their intestinal excretions, thence to human beings; however, flies, water bugs, and other vermin, commonly found in sewers are also, no doubt, partly responsible. When it is remembered that cholera organisms can live in the intestines of such vermin for a number of weeks, it will be at once apparent that many cases of cholera, the origin of which has heretofore been obscure, will have at least a reasonable explanation. An outbreak of cholera such as occurred in Honolulu during the latter part of December, 1907, might also be explained by the landing of infected roaches.

As soon as proper health measures are put into effect to provide for the disinfection of the stools of infected persons, and the community gradually acquires a temporary immunity, the outbreak slowly subsides, and the disease does not again make its appearance in Manila until it is either introduced from the outside, or the cycle given above is repeated. It is conceivable that the immunity which has been referred to above is due to drinking city water, which contains an attenuated cholera vibrio, but this does not appear probable. The outbreaks in the provinces which are separated from Manila by open sea seem to be due to infected food, especially in view of the observation made by Dr. Cullen that the first persons attacked last year in northern Samar had all eaten a poor quality of dried fish brought from Manila.

The next paper, entitled "Studies in Cholera," was read by Dr. Harry T. Marshall, Biological Laboratory, Bureau of Science and Professor of Pathology and Bacteriology, Philippine Medical School. In this paper Dr. Marshall showed that there is a wide difference between individual strains of the cholera organism and that the virulency varied greatly. From a series of guinea pig inoculations which he made he stated that there are apparently deep set differences in the biological characteristics, and that there is a wide variation in the morphology and cultural characteristics in the various strains of cholera bacilli, and that so far as he has investigated the subject he has not found a single unalterable characteristic, variation being so frequent and complex that the question might be raised whether we are justified in regarding the cholera vibrio as an organism in the stage of mutation. By selection it is possible to develop cholera variants whose virulence is enormously increased and whose cultural characteristics are markedly different from those exhibited from stock cultures. A comparative study of the subject suggests that possibly the cholera vibrio is capable of living in the water supply of the Philippine Islands. Observations made upon patients in more than fifteen different instances after they had clinically recovered from cholera showed organisms in their stools, which indicated that they might act as cholera carriers for an indefinite period.

The next paper, entitled, "Tuberculo-Toxoidin and Immunization Serum," by Dr. T. Ishigami, Director of the Ishigami Institute for Infectious Diseases, Osaka, Japan, was read by title.

OUR LONDON LETTER.

(From Our Special Correspondent.)

A PROPOSED SPECIFIC TREATMENT FOR LEPROSY—SAWYER ON HEART DISEASE—EFFICIENCY OF DISINFECTANTS.

LONDON, April 10, 1908.

A CURE for leprosy! Alas that the expression should seem so absurd, but medical science is never hopeless, and those who heard Professor Deycke's lecture at the Tropical School admit that he has made a step in advance, though as to how many more steps remain to be taken they appear to differ. Dr. Deycke was the Director of the Military Medical School at Constantinople and has come here to seek permission to try in some of our dependencies a new treatment which he has devised. His researches, he said, extended over nine years of official work in Turkey in collaboration with his assistant, Dr. Reschad Bey. They began by trying to grow the lepra bacillus, but did not obtain it in the form seen in the disease. Yet they isolated from nodular leprosy an organism which they named *Streptothrix leproides*. The professor admitted that he

could not state with certainty the relations, if any, of this to the real *Bacillus lepræ*, but sure that it was not an accidental imparity, he ventured to inject a small quantity into a very severe case. Only a slight induration followed, but the patient declared it did him good and so earnestly begged for repetition that he was gratified with weekly injections. The leprous symptoms retrogressed so remarkably that in two months the patient declared he was cured and left the hospital. It would be interesting to hear his later history.

Large quantities of the new streptothrix were then cultivated and investigated, with the result of finding a well defined chemical, which they named nastin. This is the glycerin-ester of a high-molecular fatty acid. To injections of this lepers reacted in various degrees, some so excessively as to threaten life, others not at all. Further elaborate researches to account for and regulate these differences led to the employment of benzoylchloride in combination with nastin. This proved more certain and constant in its influence and eliminated the dangers of pure nastin injections, so that Dr. Deycke highly recommends benzoyl-nastin as an agent which acts directly on the lepra bacillus and it well adapted for general use as a remedy for leprosy. Not that it is an infallible specific, and to forestall mistaken conceptions Dr. Deycke pointed out the limitations and capabilities of his method. There are nodules, even in comparatively fresh cases, he told us, which respond but slightly or not at all to injections, while on the other hand there are large leprous formations which are done away with as promptly as are syphilitic eruptions by mercury. He thinks that we may count on arresting the leprous process and often more than that, except, of course, in the most advanced and hopeless cases. Photographs and lantern slides were shown in support of his opinion, and very remarkable they were. I will not trouble you with his theory as to the *modus operandi* of the benzoyl-nastin or nastin-benzoyl, but simply add that while some are saying it may be a step in advance, I think that, if corroborated, the step will be a very long stride indeed.

The Lumleian lectures at the Royal College of Physicians have been delivered this year by Sir James Sawyer, who took for his subject "Points of Practice in Maladies of the Heart." In his first lecture he took a brief retrospect of the progress made in the nineteenth century, particularly the later three-quarters, in which period no other branch of medicine had, he thought, made more brilliant advance. The methods of investigation had been multiplied, their applications refined and their results differentiated more and more. The older methods had not been superseded, but elaborated, and our views developed. We recognize the frequency of these affections and physiology has shown us that at the center of the circulatory system there lies and works the cardiac musculature, and near the periphery the musculature of the minuter arteries, and on these two instruments of power many influences are constantly acting and reacting. The heart in its complex functions, in health and its manifold derangements in disease, is the active center, the "prince of the commonwealth," as Harvey called it, in a vascular system of arteries, veins, capillaries, lymphatics, ductless glands, the blood, and tributary fluids. The circulating lymph is slowly moving, from the blood and back into it, bringing what it has gathered from every part. We now know the importance of the lymphatic inoculation; how great is the amount of lymph in the healthy body? Twenty-five per cent. of the weight, *i.e.* three or four times the amount of the blood. As to the ductless glands, Cyon has lately developed his hypothesis that the thyroid, adrenals, and pituitary glands regulate the cardiac nerves, and even that the action of the pneumogastrics is maintained by the secretion of the thyroid. But a wider view had to be taken, for this complex system was but one of the many other "systems" of the body, and not one of them but is always in touch with it. Therefore, a heart case, whether functional or organic, is never a heart case only. Our theory of yesterday was a neuromyogenic, with an allowance for contractile spontaneity in the heart's musculature, resting on metabolism. Recent researches give fuller knowledge of the play of this musculature, and its action and interaction with the cardiac innervation. The theory may be called myoneurogenic and is of the greatest importance clinically. Now we know that the initiation of the heart's beating is inherent in its musculature, and this is a remarkable safeguard for the continuance of the beat and even for its recovery after momentary suspension from shock, motion or otherwise.

In his second lecture Sir J. Sawyer passed on to consider the methods of physical examination. Inspection, he said, was a mode of minimizing errors of malobservation and of excluding those of nonobservation. In most healthy persons the impulse can be seen in its natural position. This spot, often called the "apex beat," as Waller has reminded us, is misnamed, for the apex really lies much deeper. It would be more exact to speak of impulse beat as the spot where the convex ventricular mass comes in contact with the chest wall, for the systolic bulging of the ventricle is the main part of the impulse. Inspection regards the physiognomy of disease.

As to this the lecturer spoke of cardiac distress orthopnea and Cheyne-Stokes respiration. From a study of the last he had devised a clinical test—placing a watch upon the middle of the sternum of a patient lying on his back and telling him to hold his breath. A healthy adult can do so for a quarter or perhaps a third of a minute. A patient with chronic heart disease may hold it for half a minute or longer, even if his breathing be hurried by cardiac apnea. It would appear that weak systoles of the right ventricle lengthen the time during which the breath can be held, perhaps because the blood-tension in the pulmonary circuit is subnormal and so is longer than normally in rising enough to compel inspiration. The test the lecturer found of use in degenerative, fatty, and sometimes in chronic valvular disease with failing compensation. He thought when the breath could be held longer than in health, there would be little or no blocking of the pulmonary circuit.

Under palpation the lecturer referred to the weakened impulse in adynamic diseases and concealment by emphysema, and the increase in force and area in hypertrophy. Dilatation, fatty change, effusion may lessen the impulse or render it imperceptible. Valvular thrill, at first thought to mark mitral disease, may be met with in any of the four valvular diseases of the left side of the heart and seems to need for its origin a rippling current in forcible motion. Anæmia may assist, as it can set up a minor thrill itself, but that is easily differentiated. True thrill always means valvular disease. But there is a gentle, systolic "tickling" thrill in nervous palpitation, coming and going with its own bellows sound (*bruit de consultation*), which might be called *frémissement de consultation*. It comes and goes in half a dozen beats—no *bruit*, no *frémissement*.

Turning to consultation, the lecturer held that no other department showed a progress more decisive, complete, and illuminatory. Every sound that the ear can distinguish had been recognized, traced to its origin, and its diagnostic and therapeutic indications made out. He then passed on to point out the advantages of the solid over the hollow stethoscope, especially in the investigation of heart cases. Though the hollow tube is so commonly used acoustics teaches that vibrations are conducted farthest and with least loss of intensity through solids firstly, next through liquids, and lastly through gases.

Sir J. Sawyer has modified somewhat the solid instrument, lengthening it to fifteen inches and leaving it unpolished, as that is warmer to the touch. Comparing the solid and hollow, he said one could hear well with a tube, as its walls were solid enough for conduction, but the pitch is higher and so more striking to the ear with the solid, which further brings out better the soft, short, low-pitched puffs of the systolic bellows sounds that characterize one kind of neurotic disturbance.

The efficiency of disinfectants concerns the public even more than the profession, and yet there is very little effort to prevent fraud. Professor Hewlett declared at a meeting in the Tropical School last week that the public is being continually defrauded by having foisted on it various so-called disinfectants which have no germicidal action at all. It is obvious that when such an article is used the danger of the spread of infection is increased by the reliance placed on an ineffective agent. The Rideal-Walker test has now been adopted by the War Office, the Admiralty, and other authorities. Dr. Rideal gave a demonstration of his method at the Tropical School (Sir P. Manson presiding). Vigorous cultures of typhoid were employed, the test consisting in a comparison of one portion exposed to the action of a standard strength of carbolic acid, and another to that of the disinfectant to be tested. The method has been recommended for adoption by the Committee of the Royal Sanitary Institute, appointed to inquire into the method of determining the efficiency of disinfectants.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 16, 1908.

Chronic Obstruction of the Duodenum by the Root of the Mesentery.—In contrast to the acute symptoms caused by the factor mentioned in the title of his paper, E. A. Codman calls attention to the fact that the same causes may produce trouble in milder and more subtle ways. His contentions are these: (1) That in the human being the transverse portion of the duodenum is more or less compressed by the root of the mesentery. (2) That slight anatomical deviations from the normal or certain

pathological conditions may increase this pressure to a varying extent up to the point of complete occlusion of the gut. (3) That when this pressure reaches a degree great enough to give more resistance to the muscular efforts of the duodenum than the closed pylorus, the condition becomes of pathological significance. (4) That thus anatomically the duodenal secretions are brought in contact with mucous membranes unfitted physiologically to withstand their corrosive action. (5) That the obstruction favors stasis in the duodenum and thus bacterial invasion of the tissues. (6) That if the above propositions can be proved they will materially alter the present conceptions of the etiology and treatment of a variety of pathological conditions, *e.g.* hyperchlorhydria, nervous dyspepsia, duodenal and gastric ulcer, pancreatitis, cholelithiasis, persistent vomiting after laparotomy and in pregnancy, and excessive fluid drainage from wounds in the common duct and duodenum. The paper is an elaboration of the propositions advanced in the foregoing paragraphs. The author reports one successful operative case in which a perforation existed in the common bile duct which was partially obstructed and says that the case is illustrative of a group of common duct cases which usually die from duodenal leakage through a patent dilated papilla.

New York Medical Journal, April 18, 1908.

Multiple Tape Worm Infection.—R. L. Wilson reports the case of a man of 39 years who was passing segments of tapeworm. He was given male fern with the usual dietetic restrictions, laxatives, etc., and passed a mass containing 13 heads and 319 measured feet of worms. The identification of the worms was based on the appearance of the heads, the size and shape of segments, the rosette uterus, and the appearance of the eggs. This finding was corroborated by laboratory examination.

A Retrospect of Phthisiotherapy.—H. F. Stoll has brought together in an interesting paper the various theories regarding the pathology and therapy of tuberculosis which have been recorded in the annals of medical science. His researches traverse the general progress made from the time of the founders of medicine down to the modern ideas of fresh air and sanatoria. As such studies almost invariably show, some of our modern "discoveries" are but the renaissance of conceptions which were exploited centuries ago and then abandoned.

Principles of the Climatic Treatment of Children.—F. L. Wachenheim says that we have two methods of applying physical therapeutics of all kinds, including climate. One consists in training or developing the diseased body or organ by exercise, the other in aiding the restorative powers of nature through reduced functional activity, or what we may briefly call, in the German fashion, a rest cure. The former is indicated when the body or any of its organs suffers from imperfect development or functionates poorly from disuse. A course of training, likely to be ineffectual or even dangerous in advanced life, is almost certain to yield excellent results in childhood, if applied with judgment to patients affected with such diseases as, for example, rickets or scrofulosis; it is very generally agreed that removal to a stimulating climate is of the greatest benefit to these cases. When, however, the body or any of its parts is already overstrained and for that reason unable to cope with the work that normally falls to it, a rest cure is called for. Here, likewise, the indication is more urgent in childhood than later, for in the young subject overwork entails far more danger of permanent impairment than in the adult, and, on the other hand, there is a much better chance of complete, or at least satisfactory, restitution if appropriate measures of resting be applied, a sedative climate being one of the very best of these. Climatic rest cures are especially indicated in such affections as nephritis and uncompensated cardiac lesions. The author notes that the restful temperature varies greatly according to age. Thus, say 78° F. is decidedly bracing for growing infants, and indifferent for children just able to run about, but too warm for older and active children. Young children stand severe cold badly and a cold mountain climate is hardly advisable before the tenth or twelfth year. An important matter is the relative humidity at high temperatures, for such conditions as call for free transpiration when we desire to relieve the kidneys by diaphoresis. Here a warm and moist climate is indicated as being the best mild diaphoretic known. The anemias of young subjects do best at the modern elevation of our Eastern mountains and the same is true of the victims of general malnutrition, rickets, scrofulosis, and chronic tuberculosis.

The Most Useful Specialty in Medicine.—J. M. Taylor says that every person, young and old, is capable of a notable increase in vital status by a revision of modes of life. This is particularly demonstrable as middle age approaches and tissue elasticity subsides. On this basis, there would seem to be, he says, ample work in any community for specialization in systematic amplification of efficiency. One difficulty is distrust and jealousy which discourage frank consultation and cooperation and another is the supineness of the profession in omitting to compel recognition of the high pecuniary value of expert advice in the conduct of life. In the process of enhancing vital powers there are diverse, well known, excellent resources, often wisely employed. These embrace such familiar measures as regulation of life on a hygienic basis, including all those factors which contribute to physical economies, to normal activities, as by open air life, dietetic care, correction of functional or constitutional errors by well chosen drugs, and the like. These are efficacious in proportion to (1) the judgment and care exercised by the adviser in searching out causes, and (2) to the degree of cooperation supplied by the individual. Success depends upon a thorough estimation of the specific needs of each person. The main principle is the importance of securing greater elasticity of the tissues and promptitude in the reactive times between controlling centers and outlying motor parts. Full organic competence is not sustainable unless the supporting structures are maintained in normal degrees of mobility. By securing greater elasticity in the less used structures we can accomplish improvements in many unexpected directions, among the chief of which is the securing of harmonious interreactions through systematic motor stimulations. The author lays special stress on the necessity of increasing the activities of the paravertebral tissues. By encouraging activities in these paravertebral muscles, and securing elasticity in the ligaments in the back, there follows a corresponding and correlated enhancement of all organic activities. This can be readily accomplished by systematic posturings, torsions, bendings, etc., alone or along with extensions of the limbs and systematic forced respiratory acts, whereby the junctures of the ribs and backbone are made more mobile. The key to erectness, hence of skeletal efficiency and visceral interrelationship with the maintenance of organic competency lies in the keeping of the thorax in a normal posture. To secure this thoracic normality requires intelligent motor education. By the simple device of training a patient to clasp the hands behind, pulling apart strongly and pushing the arms forcefully down, at the same time thrusting up the chin verically, these contractured tissues are forcefully stretched, perhaps for the first time in years. This act repeated, and with steady increments of force, widens the front of the thorax, educates the downpull of the erector spinæ muscles, and overcomes the common and damaging habit of stooping. Stooping always induces undue compression of the larger viscera.

Journal of the American Medical Association, April 18, 1908.

Malignancy in Warts and Moles.—The danger of the malignant degeneration of warts and moles is hardly sufficiently appreciated by either the medical profession or the public in the opinion of E. A. Babler, who reports a series of cases observed in the St. Louis Skin and Cancer Hospital. It is true that a wart or mole may never become malignant, but a study of the literature, together with his own personal observation, convinces him of the reality of the danger. In some cases a more or less constant irritation seems to be the exciting factor, and in others a slight injury, such as an insect bite or a cut received in shaving seems to start the growth into malignancy. Most of his cases had their origin in warts. One difficulty experienced is the reluctance of patients to permit operation early enough to check the morbid process. He fully agrees with Keen who contends that the moment warts and moles begin to increase in size they are almost always already malignant growths and should be treated as such. He protests against the practice of cauterizing warts on the face; they should be excised.

Hypertrophy of the Prostate.—A. J. Crowell holds that hypertrophy of the prostate is always or nearly always due to congestion or inflammation. He bases this belief on the frequency with which it occurs in comparatively young persons as well as on the pathology. He has seen it in a boy 8 years old and in a number of men between 30 and 40. Most of these patients gave a definite history of acute infection in early manhood, and while this is not absolutely essential, it is the most common cause. The reason why it is most frequent in the aged is twofold; First, each year lengthens the time for infection and continued inflammation with its increasing obstruction; and second, it occurs at that period of life when lack of tone and senile degeneration make themselves manifest. According to this view, pathological hypertrophy is a preventable condition in many cases, and the treatment is prophylactic, palliative, and operative. The prophylactic treatment consists in the use of heat, massage, dilatation, and various

medicinal remedies. The palliative treatment consists in catheterization, intravesical irrigation, vesical sedatives and urinary antiseptics. The operative treatment is palliative and radical. Palliative measures, such as cystotomy, are only resorted to in extreme cases when prostatectomy is not advisable. Prostatotomy or the Bottini operation are indicated in a limited number of cases—those in which the median lobe is small—and even these patients will do better with perineal section. For radical treatment he favors the perineal operation as being less mutilating and less serious, and especially as better preserving the sexual powers.

Occupation for the Insane.—E. Cohn remarks on the value of occupation in the treatment of the insane, as well as on the difficulties in providing it, which are experienced even in well-managed institutions. He describes the method which has best served him in meeting the problem, the main feature of which is a regular systematized program for each hour of the patient's day, and including arrangements for physical exercises, graded calisthenics, ward work, mental occupation in the form of games, reading, etc., all directed according to the patient's capacity and changed daily as much as possible to secure variety. Entertainments, music and all kinds of rational outdoor sports should be provided for, and every kind of special talent be utilized among patients and employees. Of course, hearty cooperation is required on the part of the attendants, but this is easily secured by proper enforcement of discipline. Attendants and nurses generally fall in readily with the arrangements as helping to render their duties less monotonous. A reasonable amount of "time off duty" should be allowed to better prepare them for their task. Attendants are liable to think amusements, etc., are to be used as rewards for good behavior, but this is a mistake; it is the irritable, restless, and depressed patients who are most in need of them, and the physician should be the judge.

Pernicious Anemia.—W. J. Stone reports a case of pernicious anemia in which the blood count had fallen to under 300,000, with marked poikilocytosis. The patient, a man, apparently fully recovered, having been in perfect health and able to do arduous manual labor for the past year. The treatment was mainly with sodium arsenite, grain 1/10 every four hours during his stay at the hospital, together with injections of normal salt solution for a couple of weeks. The case, Stone thinks, emphasizes the facts that such cases are not altogether hopeless, that the prognosis depends on the degree of red-cell regeneration in the bone marrow, the age of the individual and the potency of the hemolytic poison, and the further fact of the rapid specific influence of arsenic on blood regeneration in certain of these cases. Whether this is through direct stimulation of the bone marrow activity or through neutralization of the hemolytic poison, or both, remains undecided.

General Anesthesia.—O. J. Cunningham has devised an apparatus for the administration of nitrous oxide and oxygen with the ether sequence, which, he claims, possesses the following advantages: If necessary, oxygen can be given pure or mixed at any time during the anesthesia or afterward to bring about a quick resuscitation. A few breaths of oxygen will completely relieve the occasional laryngeal spasm of incomplete anesthesia without decreasing the amount of ether being used. A special feature is that the gases and ether vapor are accurately measured under all conditions, allowing a perfectly even administration, and thus adding to the safety of the patient and the convenience of the operator. By mixing oxygen in the proper proportions with nitrous oxide, complete narcosis can be maintained indefinitely and is used sufficiently long (from three to five minutes, occasionally longer) to permit ether to be administered gradually and slowly until complete ether narcosis is established. The swallowing of the ether-laden hypersecreted mouth secretions is thus avoided, with its consequent nausea and vomiting. The danger of aspiration pneumonia is also thus lessened. The reduction of body heat by the ether, which is liable to occur under the ordinary methods, even in a warm atmosphere, is avoided by the combined employment of three methods: 1. The ether chamber is in a bath of 22 ounces of water, at about 90° F., a little below the boiling point of ether. 2. Ether, and the corresponding refrigeration, is saved by the quick induction of complete narcosis by nitrous oxide and oxygen. 3. Only the inhalation passes over the ether and not both inhalation and exhalation, as is the usual rule. This saves half the ether ordinarily used and also reduces refrigeration. Rebreathing, with its decreased oxygenation and increased carbonic acid is practically impossible with this apparatus. The apparatus complete (exclusive of the gas cylinders) weighs 20 pounds and can be carried in a case smaller than the usual suit case. The expense of anesthesia by this method is not excessive, and there are practically, he claims, no uncomfortable after-effects.

The Lancet, April 11, 1908.

The Cell as a Factor in Phagocytosis.—H. A. Bayly has made 88 determinations of the tuberculoopsonic index on 44 women in labor with a view of endeavoring to ascertain whether fatigue lowered the power of resistance to infection by acting on the cell or the serum. With each patient's serum he made two determinations of the tuberculoopsonic index, in the one case using the patient's own cells and in the other using his own cells. He found, using his own cells, that in 39 cases the index was between 0.8 and 1.2. Of the remaining five cases three were above 1.2 and only two below 0.8, thus confirming Western's conclusion that fatigue does not lower the opsonic content of the serum. When the patient's own cells were used, however, the result was very different. In only 19 cases were the indices between 0.8 and 1.2; 25 were below 0.8 and none was above 1.2. Still more marked was the relation of the index found when the patient's cells were used to that found when his cells were used, for the index was lower with the patient's own cells in 38 cases and higher in only four, while in two the index was the same with both the patient's cells and his cells.

Renal Hemorrhage in Chronic Interstitial Nephritis.—J. T. Macnab gives a general description of the condition referred to and presents the histories of three cases. As to treatment he says that rest in bed, purgatives, and a diet consisting chiefly of milk, eggs, and bread-and-butter will, as a rule, be sufficient to stop the bleeding. Hemostatic drugs, such as calcium lactate or calcium chloride, may be tried, but are hardly necessary. Iron in some form will be useful during convalescence. Thirty-eight of the cases which the author collected were so treated, and with the exception of three deaths all recovered. The three deaths were in advanced cases, all of the patients having retinal changes and other signs of marked cardiovascular degeneration. Recurrence is extremely probable, for the cause, the chronic nephritis, still remains. One patient was explored for a renal calculus which did not exist, and died ten days later. Surgical treatment has been tried in a number of cases; where no changes in the fundi can be detected and the patient's general condition is good enough to warrant the administration of a general anesthetic, operation may be advisable to check bleeding which does not react sufficiently to medical treatment. Two methods of operation have been practised with some success. In the one, introduced by Edebohls, the capsule of the kidney is removed as entirely as possible. He even claims that this procedure has a curative effect on the nephritis itself. Four cases were treated in this way; in all the hematuria ceased for a time, but two relapsed within a few months. The other method is described by Fenwick. He believes that the blood escapes from the lower pole of the kidney; he therefore makes an incision into this part of the kidney substance without opening the renal pelvis. This causes a scar to form which obliterates the vessels reponsible for the bleeding, and so stops it.

Rational Treatment of Functional Dyspepsia.—R. Hutchison classifies the disorders of gastric function giving rise to symptoms of functional dyspepsia, as follows: A. Secretory, (1) excess, or hyperchlorhydria and hypersecretion, (2) defect, or hypochlorhydria and achylia. B. Motor (1) excess, or pyloric spasm, (2) defect, or atony and motor insufficiency. C. Sensory, (1) excess, or hyperesthesia, (2) defect, or anorexia and achoria. Details of treatment are given under each one of these subdivisions. The author says that any one of the foregoing disorders may occur alone, but two or more are frequently found coexisting and giving rise to a group of symptoms characteristic of certain clinical types of dyspepsia. For instance, it is common for an excess of secretion to occur along with some hyperesthesia of the stomach in some forms of so-called "acid dyspepsia," and to these there may be superadded some excess of motility in the form of pyloric spasm; or there may be a greater or less degree of motor insufficiency with or without some disorder of secretion in what is commonly spoken of as "atonic dyspepsia." This, at least, is certain—that, did our knowledge only permit of it, every case of dyspepsia could be analyzed into a disorder of one or more of the above functions of the stomach, and that accurate treatment depends upon the degree to which such an analysis can be carried out. Concerning general treatment of this class of cases as a whole, the author observes that inasmuch as disorder of the functions of the stomach is in most cases and in the last resort the expression of a disturbance of the nervous mechanism of the organ—that is, that dyspepsia is really only one way in which functional disease of the nervous system manifests itself—it will be obvious that treatment

directed to the nervous system is applicable in all cases. It is in this way that such therapeutic agents as rest, liberation from worry and mental work, change of air and scene, and many of the "hydrotherapeutic" measures exert their beneficial influence, and the use of such agents is in the strictest sense rational.

British Medical Journal, April 11, 1908.

Parotitis as a Sequel of Pneumonia.—G. B. Robinson's patient was a man of 42 years whose pneumonia terminated by crisis on the seventh day. Next day his temperature began to rise, and on the third day after the right parotid began to swell. Incision revealed no pus, but it appeared later. As toxic symptoms came on and drainage was insufficient, deeper incisions were made and various pus foci uncovered. The wounds healed in about a month after the onset of the swelling. The pus showed *Staphylococcus albus* but no pneumococci. The case was therefore probably due to oral sepsis. The author makes a plea for greater cleanliness and for care over the oral cavity in every case of illness, no matter what its nature.

Therapeutic Use of Normal Serums.—E. C. Hort reports series of cases treated with (1) local applications of serum, (2) internal doses of serum, (3) both methods combined with vaccines and (4) vaccines (internally) alone. The cases cover a wide range of lesions, such as fissures, varicose ulcers, bed sores, gastric and duodenal ulcers, pustular eczema, tuberculous hemoptysis and sacroiliac disease. His therapeutic results have been surprisingly good. Brief notes of some of the cases are given. The author says that in the cases of arrest by the serum of progressively destructive lesions caused by the tubercle bacillus, it seems highly probable that such arrest is due to an increase in the inhibitory power of the blood. This raising of the clinical index of the blood's inhibitory power is likely to prove to be the expression of the reaction of the organism to normal serum treatment in all cases of cell destruction, whether due to bacillary invasion or not. It is more than probable that the opsonic index, which after all is only a measure of ingestion prior to lysis of bacteria, will be found to be only a supplemental factor to the true antilytic index of response, which is a gauge not only of antilysis but of restrained lysis. It is conceivable that ingestion and subsequent lysis of bacteria may give rise to an undesirable escape of poisonous enzymes, unless restrained from running riot by antilytic action. Opsonic estimation is and can be only a partial indication of the organism's response to bacillary invasion or vaccine injection. An index of antilytic response may prove to be a far truer guide. The action of normal serum would appear to be a sum of the two opposing actions of an antilytic and auxilytic body. The protein constituent of the serum with which the antiantolytic body is in combination is still a matter of dispute.

Berliner klinische Wochenschrift, April 6, 1908.

The Antiferment Action of Human Blood.—Marcus describes tests and amplifications of the Müller method of determining the antiferment content of the blood. This consists in using leucocytes as a test object by mixing the serum and inflammatory exudate in different proportions and placing drops of the mixture on the surface of Loeffler's serum plates, which are kept in the incubator at 53° for twenty-four hours. If the antiferments of the blood have neutralized the tryptic ferment of the pus cells no digestion of the serum medium takes place, otherwise at the site of each drop a little depression is formed. Marcus has found that the method is a good one but suggests the modification that instead of pus, which is inconstant in composition and often difficult to obtain, a definite solution of trypsin be used as test object. For this purpose a 1 per cent. solution of the ferment is suitable, and he has found that the antitryptic power of the blood serum may be considered normal if when mixed with three times its volume of 1 per cent. trypsin solution it prevents the formation of hollows on the surface of the serum plates. Therefore, it is reduced if it can neutralize only less than this amount, and is increased if it can neutralize more. Observations on patients suffering from various affections, mostly chronic in nature, showed that the antiferment content of the blood is subject to variations, lymphatic leukemia especially being characterized by a very high amount of antiferment.

The Effect of the Reaction in Wasserman's Syphilis Test.—Sachs and Altmann have found in working with Wasserman's complement fixation test for syphilis that the reaction of the serum used is of importance. In ten cases tested, it was found that whenever the alkalinity of the complete mixture reached 1-800 to 1-3,200 N. NaOH the positive reaction was either prevented from appearing or else, in the case of very strong sera, was greatly reduced. On the other hand it was possible to cause a positive reaction to appear with nonreacting sera by the addition of a small amount of acid, so that the mixture had an acidity of 1-1,000 to 1-2,000 N. HCl. Two explanations of these facts are offered. Either syphilitic sera are distinguished from others only through a diminished alkalinity, or a diminished alkalinity is necessary for the changes observed to take place. The authors incline to the latter view as it was never possible to obtain a positive reaction in normal sera by the addition of acid.

Münchener medizinische Wochenschrift, April 7, 1908.

Testing Pus with Millon's Reagent.—Dreyer has tested the pus from seventy-three different cases with Millon's reagent in the manner suggested by Muller as a means of differentiating between tuberculous and nontuberculous processes. The procedure is carried out by allowing a drop of the fluid in question to fall into a small dish containing the Millon's reagent, which consists of a solution of mercury in nitric acid. Tested in this way ordinary pus forms a disc in the fluid which is readily broken up by means of a platinum needle, whereas tuberculous pus forms a pellicle which is dense and firm so that it may readily be lifted out with the wire, and if it is plunged below the surface of the fluid it makes a globular mass. After the lapse of a few minutes the Millon's reagent to which the ordinary pus had been added turns pinkish, but if the drop was of tuberculous origin this change is not observed. Dreyer found that the test was reliable, though in tuberculous cases the presence of a secondary suppurative process caused the exudate to give the reaction characteristic of nontuberculous material. The pus should not be tenacious, and must be obtained without the admixture of much blood. If the drop forms a dense membrane the process in question is undoubtedly a tuberculous one, but if the other type of reaction is obtained there must be present an infection with the ordinary pus producing organisms, though there is the possibility that the underlying condition is tuberculous. As the treatment, however, is the same whenever there is an acute infection, the method is valuable for practical purposes.

A Simple Method of Testing the Pancreatic Function.—Schlecht has found that the following method furnishes a satisfactory means of determining the functional efficiency of the pancreas. The patient's lower bowel is cleared out by means of an enema and he is then given a test meal. One or two hours later an active purgative is given, such as calomel, and then droplets of the resulting stools are scattered over the surface of serum plates and kept in the incubator for twenty-four hours at a temperature of 55° to 60° C. If trypsin is present in the stools it shows itself by the formation of minute hollows on the surface of the plate, while if the stool contains none, these do not appear. Tests on animals and on patients indicate that the procedure is reliable in its results, while it is also simple and easy to carry out. Further investigations will probably enable it to be used also as a quantitative method.

Surgical Treatment of Rhinophyma.—Gersuny recently operated successfully in a case of this nature, and the operation is thus described by the Vienna correspondent of the *Lancet*. The procedure was done under local anesthesia produced by a solution of cocaine of 1 per cent. strength, only a few grains of the alkaloid being used. The tumors were incised near their border, so that the underlying cartilage was exposed. Then the skin was undermined all around, and the tumor removed, thus leaving a free narrow edge of true skin everywhere. This free edge was fixed to the wound by a few sutures. The saving of this free edge is important, as it serves as a margin for the tip and the edge of the nose. Then the remaining wound was covered by flaps of epidermis taken from the extirpated tumors. The dressing consists of gutta-percha tissue fixed to the skin by means of chloroform. The dressing can be removed after four or five days. The chief advantages of this method are: (1) the natural appearance of the nose is preserved after the operation because there is no difference in color between the new skin and the surrounding parts of the face; and (2) the removal of the large masses tends to improve the vascular condition in the face, so that the often concomitant acne rosacea disappears or is much diminished. Seven patients have hitherto been operated upon by this method with very good results.

Book Reviews.

Pathology, General and Special. For Students of Medicine. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology in King's College, London; Lecturer on Bacteriology, London School of Tropical Medicine, Physician to the Seaman's Hospital, Greenwich; Examiner in Pathology, University of Aberdeen; Examiner in Tropical Medicine, University of London. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1907.

The present volume is a successful attempt to give, with quite enough detail for the medical student and practitioner, all the essentials of general and special pathology. There is no pretense made to include every hypothesis and theory that has ever been offered, nor does the author befog the reader with an unusual terminology; at the same time nothing is included that the student will have to unlearn. Most medical students require only such knowledge of pathology as will aid them in the practice of their profession, and the book under notice fills this bill most satisfactorily. The former edition was exhausted in a year, and the present edition, besides having undergone a careful and thorough revision, contains some new matter. The chief additions have been made in the sections dealing with heredity, the degenerations and infiltrations, neoplasms, inflammation, the infections, the heart, and arteriosclerosis. This book is a valuable addition to the present textbooks on pathology, and for the general practitioner it is one of the most useful; not the least among its many good points is the fact that its author is a physician as well as a pathologist.

Die Augenheilkunde in der Römerzeit. Von Dr. Rodolfo del Castillo y Quartiellers, in Madrid. Autorisierte Ubersetzung aus dem Spanischen von Dr. Max Neuberger, Professor an der K. K. Universität in Wien. Mit 26 Textfiguren. Leipzig und Wien: Franz Deuticke, 1907.

This fully illustrated brochure of 137 pages gives a very interesting history of the practice of ophthalmology by the Romans from the time of the rise of medicine under Augustus to its decline after Nero. In addition to available ancient literature, the author has made use of the legends that have been found on stamps, signets, tablets, and containers of various forms and sizes; of sculptures in relief, bronzes, and of various instruments and implements used in ophthalmic practice that have been unearthed from time to time during excavations that have been carried on in various places, for the data from which to present the subject. These objects of archeological interest belong to various museums, where they have been studied in this connection. About two hundred examples of stamps and signets are so held. Formulæ for a large number of collyria; methods of compounding; the materia medica then in use, and the therapeutics of ophthalmology are described quite at length. A chapter is devoted to the surgery of the eye, in which the various operations on the lids, lacrymal apparatus, and globe, as then performed, are described. The work is one of value and of great interest to those who desire to know something of the antiquities of ophthalmology.

Gallstones and Diseases of the Bile-ducts. By J. Bland-Sutton, F.R.C.S., Surgeon and Lecturer on Surgery to the Middlesex Hospital, etc. With 47 Illustrations. New York: William Wood and Company, 1907.

The contents of this book consist of the series delivered by the writer at the Middlesex Hospital, and have been published in this form with the idea of being useful to students. It constitutes a concise but valuable exposition of a subject which, notwithstanding its very voluminous literature of recent years, is still not sufficiently understood by the profession at large. A great number of cases of cholelithiasis go on unrecognized because of the lack of a general knowledge of their diagnosis in the earlier stages. Operative intereference here is now accepted as of as great importance as in appendicitis, and yet when we view the mortality statistics presented by the author, it seems to be a procedure, like most others of a major surgical character, not entirely free from grave risk. The book is written in Bland-Sutton's usual good style, and constitutes a very satisfactory manual for students. The only criticism to be made of the book is in the illustrations, which hardly measure up to those of recent years on similar subjects.

Tumors of the Cerebrum; Their Focal Diagnosis and Surgical Treatment. By Charles K. Mills, M.D., Chas. H. Frazier, M.D., Wm. G. Spiller, M.D., Geo. E. DeSchweinitz, M.D., and Theo. H. Weisenburg, M.D.

This book is made up of a series of seven papers, reprinted from various journal sources, of which the first deals with the focal diagnosis of operable tumors of the cerebrum, and is written by Dr. Mills. It presents an excellent résumé of the important differential points between this condition and other lesions of the forebrain. The same author also has a paper on the significance of Jacksonian epilepsy in focal diagnosis, and, in conjunction with Dr. Chas. H. Frazier, another on the motor area of the human cerebrum, its position, and subdivision, with some discussion of the surgery of this area. Cerebral decompression is treated by Drs. Spiller and Frazier, the ocular symptoms of tumor of the cerebrum, by DeSchweinitz, and conjugate deviation of the eyes and head and disorders of the associated ocular movements, by Dr. Weisenburg. These men have all had important associations with this line of surgical endeavor, and the book here noted affords in a convenient form the results of their united labors. A number of very excellent photographic illustrations add considerably to the interest of the book.

Zur Lehre von der Zwillingsschwangerschaft mit heterotopem Sitz der Früchte. By Fr. v. Neugebauer, Warschau. Leipzig: Verlag von Dr. Werner Klinkhart, 1907.

The question of a double pregnancy occurring simultaneously in different portions of the genital tract is a very serious one, because the prognosis is most uncertain, and the diagnosis, particularly in the early months, practically impossible. It would appear from the statistics collected by this writer that the condition is not an infrequent one, for he was able to obtain reports from the literature of 171 cases, which he presents as a very complete bibliography of the subject. This constitutes a most satisfactory exposition of the subject, and as such will serve as a valuable work of reference and information for those desiring greater knowledge of this interesting complication of pregnancy.

Die Behandlung der tuberkulosen Wirbelsäulenentzündung. Von Dr. F. Calot, Ubersetzt von Dr. P. Ewald, in Heidelberg. Mit 120 Abbildungen. Mit einem Vorwort von Prof. Dr. Oscar Vulpius. Stüttgart: Verlag von Ferdinand Enke, 1907.

Calot is the French orthopedist who, some ten years ago, announced a method of treating spondylitis which upset to a large extent the methods hitherto employed. He came boldly forward with the claim that the kyphos, which had been regarded as a necessary evil associated with the healing process in tuberculous disease of the spinal column, must not only be prevented, but, if already present, should be attacked as part of the cure. This revolution in the accepted methods of treatment did not last long, and the pendulum then swung so far in the other direction that only the most severe and hopeless cases of tuberculous spinal deformity were subjected to the radical measures which Calot advocated. The latter, undaunted, however, has brought out another work in which the technique of the treatment is somewhat modified and simplified in addition to such an extent that the methods can be applied by the ordinary practitioner without the use of elaborate special apparatus. The illustrations are excellent, and show exceedingly well the writer's method of applying the plaster jacket, which differs considerably in most of its details from that ordinarily employed. The German translator deserves a word of credit for the excellent reproduction of this important French work, and an English translation would undoubtedly meet with a favorable reception.

A Manual for Boards of Health and Health Officers. By Lewis Balch, M.D., Ph.D., Secretary State Board of Health of New York, Health Officer of Albany, Emeritus Professor of Anatomy and Professor of Medical Jurisprudence, Albany Medical College. Also the Public Health Law, constituting Chapter 25 of the General Laws, with all Amendatory and Supplemental Statutes, including those of 1907. Albany, N. Y.: Banks & Co., 1907.

This volume contains a practical statement of the duties of health authorities, and how they may be performed as required by the public health law of the State of New York. It is not a manual of hygiene, nor is it a legal work or an exposition of decisions rendered by the courts on health matters. The book will prove useful to all health officers and others concerned with boards of health. The article on the Practice of Medicine on pages 195 to 208 is a reprint of the old law on the subject and is now out of date. The general get-up of the book is poor; it could be improved by a proper system of pagination; there are far too many intercalated pages, and these represent different varieties of type and are also of varying lengths. In the index, too, if the numbers referred to pages (properly arranged) instead of to sections, it would be much easier to find any desired topic.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held March 26, 1908.

DR. W. S. STONE IN THE CHAIR.

An Asexual Monster; a Unique Specimen.—Dr. EDEN V. DELPHEY presented this specimen. Although the confinement was at full term, the child was only as large as a six months' fetus. The cranial bones were completely ossified. There was but one eye. The right palpebral fissure measured 17 mm., and the left 14 mm. The nasal processes of the supramaxillary bone and the nasal bones were hypertrophied and separated in the median line. There were but four fingers on each hand, and four toes on each foot. There were no external genitals. There were two ovoid elevations, empty cyst sacs, just over the site of the external ring, each about the size of an almond. The anus was patulous and in the anterior margin was shown a dimple marking the location of the urethra. There was but one kidney and no internal sexual organs whatever.

Carcinoma of the Vaginal Portion of the Cervix.—Dr. HERMAN J. BOLDT presented this specimen because of the question of doubt as to the justifiability of having done an extirpation of the uterus which arose after the receipt of the report from the pathologist. Clinically there was no doubt as to the breaking down ulceration present on the vaginal portion of the cervix being malignant. The woman was well advanced in the forties and had been having atypical bleeding and putrescent vaginal discharge for several months. When he received the report that the ulceration was not malignant, he was surprised and sent the same specimen to another pathologist, who reported that the cervix was invaded with nests of epithelial cells of the squamous variety. In addition there was a decided necrosis of the endometrium and endocervix, beneath which dense infiltration with polynucleated leucocytes had occurred. This showed that a report from a pathologist was sometimes not reliable if the pathologist did not take the time to examine the specimen carefully.

Adenocarcinoma of the Body, Complicated with Suppurative Tuboovarian Inflammation.—Dr. HERMAN J. BOLDT presented this specimen. The patient had had atypical bleeding for several weeks after a curettage. An examination of the scrapings showed adenocarcinoma. The patient made an uneventful recovery and was out of bed the day following operation. The operation was done by the abdominal route.

Hysterectomy Because of Intractable Bleeding.—Dr. HERMAN J. BOLDT presented two uteri. Both patients had had profuse uterine bleeding at times, and were never free from some loss of blood. The various treatments employed had been ineffectual. In one, a woman of 44 years, the scrapings were sent to the laboratory. The report was that the picture was suspicious of malignancy. The blood-vessel coats of both uteri showed pathological thickening; otherwise the changes showed a chronic endometritis. The ovaries in both cases showed chronic inflammation. Dr. Boldt had appended the pathological report on one of these cases, and hoped to induce operators to have each and every specimen that might be obtained by operation carefully examined; only by such means could they hope to learn more about gynecological pathology. Furthermore, by invariably adhering to this rule, they might occasionally save a life, because it would be found occasionally that a condition which they believed to be benign, was malignant.

Placental Polypus.—Dr. BOLDT presented this specimen. For three months subsequent to confinement the woman from whom the specimen was removed had had more or less profuse bleeding from the uterus. The tumor was attached to the fundus uteri. There was a suspicion that it might have been a deciduoma, but the pathologist's report did not confirm the suspicion. Within two days after the removal of the placental polypus the bleeding entirely ceased.

Dr. Boldt presented another specimen of placental polypus. The patient was told that she had carcinoma. She had aborted four months previously and since had been bleeding more or less profusely.

Cystic Tumor of the Round Ligament.—Dr. BOLDT presented this specimen. The patient had noticed for some time an enlargement in the right inguinal region which was diagnosed by her physician to be a hernia. She was admitted to the hospital for an operation on the pelvic organs, and he was requested to attend to the swelling in the groin. Dr. Boldt made no definite diagnosis. On cutting down upon the small tumor it was found to be continuous with the round ligament. The cyst wall was composed of fibrous tissue, loosely held together; in the meshes of the connective tissue were masses of leucocytes. The lining of the cyst was of fibrous tissue, and there were but few blood-vessels.

Specimen of Tubal Abortion.—Dr. BOLDT presented this specimen. The patient had aborted two weeks before entering the hospital, and had been bleeding continuously ever since. When Dr. Boldt saw her she was blanched, entirely pulseless, but in possession of her mental faculties. A rather superficial examination showed that the vaginal portion of the cervix was not succulent, the uterus was not enlarged or softened in consistency. The woman complained of severe pain when the vaginal portion of the cervix was moved forward. This was a symptom that he had observed for a number of years, and had learned to attach some importance to it. He did not know of anyone who had called attention to it besides himself. The pelvis was filled with an indefinite fullness. The Fallopian tubes could not be palpated. At operation the abdomen was found to be filled with blood which gushed out like a fountain, so soon as an exit was made for it. It was evident that the left tube was the seat of the faulty implantation of the ovum, and it was removed. The ovary was removed for the purpose of studying it histologically. The questions that were asked were: Was it ever desirable to delay operation in extrauterine pregnancy if the pulse was very poor? Yes, in exceptional circumstances. Could the diagnosis between tubal abortion and tubal rupture always be made? No, not from the clinical symptoms. Did an hematocele always form if tubal abortion occurred? No. In the case he reported the symptoms were just as serious as they were in an extensive tubal rupture, and death would undoubtedly have taken place from acute anemia, had the patient not been promptly operated upon. Did death ever take place from intraperitoneal hemorrhage because the operation for the removal of the gestation products had been delayed? Yes. He had had three such instances. In one case a diagnosis of extrauterine pregnancy was made and the patient was sent to the hospital. He intended to operate on the following morning. The woman suddenly went into collapse and died. An extensive tubal rupture had taken place into a preformed hematocele, and broken through into the peritoneal cavity. A second case was one in which the diagnosis was thought to have been colic from indigestion, or appendicitis, but which was diagnosed by Dr. Boldt as tubal abortion. Immediate operation was advised, but before consent was obtained another hemorrhage occurred and the patient died. The particulars in a third instance he could not then recall.

Dr. WILLIAM S. STONE said that he could corroborate what Dr. Boldt had stated about women complaining of pain when the vaginal portion of the cervix was moved forward in these cases of tubal abortion.

Dr. C. C. SICHEL reported a case of ectopic gestation he had operated upon a year ago; in this case an extraordinary amount of bleeding occurred and the patient

died. There was a ruptured ectopic gestation of the interstitial variety, and he believed that, in those cases, an immediate operation was demanded.

Dr. C. F. Adams distinctly recalled a case at the Columbus Hospital, a patient being brought to the operating room with no pulse at all. When given ether she seemed to become worse but, with the use of saline infusion, the bleeding practically stopped. After giving four ounces only of the saline infusion, the pulse fluctuated again and after six or eight ounces were given she rallied to a marked extent. He removed the right adnexa which had ruptured. On the left side there was a hydrosalpinx, and this he removed as well. The time consumed in operating was about twenty minutes. At the completion of the operation the patient had a good color and was sent to the ward in good condition. He believed that had the saline infusion not been given she would not have rallied. She was practically dead before its administration.

Dr. Boldt believed that in those cases it was better to begin the infusion when the patient was placed on the table, and not to wait until the end of the operation.

Dr. Adams said this was done in the case he reported.

Carcinoma of the Uterus, Complicated by Pus Tubes and Adherent Appendix.—Dr. C. C. Sichel presented this specimen. The patient from whom this specimen was removed was forty years old, married, and gave a negative family history. Five years ago she had an attack of what was supposed to be appendicitis or salpingitis. She had been married six years, had two children, but no miscarriages. She began to lose weight June 1, 1907. About August 30 she had a fainting spell, and was admitted to the hospital one week later. She had a bad vaginal discharge, more profuse at the time of her menses. The abdomen was distended and there was pain on pressure in the lower right quadrant. The cervix was enlarged, bled readily, with a foul smell, and there were whitish elevated areas. The cervix felt hard, but the tissues did not break off easily. The uterus was bound down, being only slightly movable. A portion of the cervix was sent to the pathologist, who reported it to be an adenocarcinoma. At operation the tip of the appendix was found to be adherent to the right ovary. The appendix was removed and showed an old catarrhal condition. The tubes were enormously distended and bound down by adhesions. A panhysterectomy was performed and the abdomen drained. The patient was in a critical condition for some time, but after a long siege left the hospital and was lost sight of.

Case of Right Ovarian Cyst, Complicated by Appendicitis and Distended Gall-bladder.—Dr. C. C. Sichel reported this case. The patient was twenty-seven years old, a general houseworker, married, and gave a negative previous history. On September 30, 1907, the patient was suddenly seized with sharp, stabbing pain in the abdomen which was accompanied by a severe chill and fever, lasting about four hours. This passed off, but a second attack occurred on October 1, lasting twenty-four hours. The patient was admitted to the hospital on October 2, complaining of pain and tenderness. Her temperature was 99°, pulse 100, and respiration 32. There was some abdominal rigidity, but no tympanites. There was considerable pain over the right side of the abdomen. A diagnosis of small cystic ovary was made, complicating an appendicitis. At operation a slightly cystic ovary was found on the right side, which was removed. The appendix was found to be swollen and congested, with a few adhesions and a beginning infection. The appendix was removed. The gall-bladder was found to be distended and very tense; on further examination this tension was overcome and, as no stones were felt, the abdomen was closed and the patient made a complete and rapid recovery.

Dr. Eugene C. Savidge called attention to the fact that Dr. Sichel's first patient began to lose weight June 1 and entered the hospital September 1. This had a direct bearing upon the paper of the evening.

Case of Inverted Appendix, Reoperated, with Microphotograph.—Dr. Henry Dawson Furniss presented this specimen. The patient from whom the appendix was removed was a woman, forty-five years old. Six years ago she had an abdominal section when plastic work was done on the tubes and ovaries and the appendix was inverted after the method of Edebohls. Two years ago Dr. Furniss did a cecostomy for a mucous colitis in order that the whole of the large intestine might be irrigated. The operation was done in the same manner as a Kader's gastrotomy, the cecum being sutured to the parietal peritoneum, and a permanent catheter being left in the cecal opening. On December 23, 1907, to close the fistula, he cut down the cecum, separated it from the abdominal wall for an inch around the opening, the edges of which were then freshened. At the lower angle of the cecal opening was the appendix, projecting three-quarters of an inch into the cecum. This with its base was removed, and the cecal fistula closed. The microscopic section of the appendix showed nothing abnormal other than the inversion. From without inward was seen the mucous membrane, the submucosa with lymphatic tissue and lymph nodes in places, circular muscular layer, longitudinal muscular layer, and in the center a "core" of fibrous tissue. The blood-vessels were in the submucosa, but were more numerous and larger in the inner fibrous "core," representing the serosa and subserosa. It was claimed that often a portion of the appendix in these cases sloughed away, leaving a stump of from a quarter of an inch to more in length. Unfortunately, no longitudinal sections were made of this specimen to determine whether it was a stump, or only an appendix shortened longitudinally. From the clinical history of the patient he did not think that the inversion of the appendix had anything to do with the mucous colitis, for the colitis was present before the appendix operation and was no more severe afterwards. As the colitis had almost cleared up at the time the appendix was removed (second operation), it could not be said that the excision of this organ had any bearing on her subsequent history.

Dr. John O. Polak said that he had seen a number of cases of colitis subsequent to the operation of inverting the stump of the appendix.

Dr. Furniss did not believe that there was any relation at all between the inversion of the stump of the appendix and the mucous colitis. This patient had, however, a complete achylia gastrica, and had been on a vegetable diet with marked improvement of that condition.

Case of Operation Upon the Cervix Under Hypnosis.—Dr. Chas. F. Adams reported this case. The patient was forty-six years old, married twenty years, had three children and one miscarriage shortly after marriage. The last child was born ten years ago. Her first two confinements were normal and fairly easy. The third was very hard, and from that she dated her trouble. She had a great deal of headache, referred principally to the occiput, and some backache. She had quite a profuse leucorrhea. She had had occasional local treatments during the past seven years. An examination revealed a stellate tear of the cervix, very deep on the posterior lip, and extending directly backward, suggesting malignancy. The cervix was amputated on November 20, 1907, under hypnosis. The patient felt no pain whatever. Dr. Adams noticed that there was less relaxation of the parts and more hemorrhage when operating under hypnosis.

Dr. William S. Stone asked that Dr. Adams describe the technique of hypnosis more in detail, as well as the details immediately following operation.

Dr. Adams acknowledged that he had but little faith in hypnosis. Dr. Leonard, who applied this method, was now out in the West developing a gold mine. The patient was under operation for one hour. Hypnosis was applied one-half hour before the beginning of the operation. During the operation Dr. Leonard stood at the patient's head and mumbled something to her like "feel no pain; feel no pain." Although Dr. Adams had but little faith in hypnosis, he was surprised at the patient being so long under the knife and experiencing no pain whatever. In order to test the sensibility, he ran the needle into the perineum once or twice, but the patient did not budge. The hemorrhage was more profuse than ordinary.

Dr. Henry Dawson Furniss said that two years ago he had a patient, a young, undeveloped girl, who had persistent retching. He was able to put her to sleep in twenty minutes by suggestion; he kept her asleep twenty-one hours out of the twenty-four. At last he taught the family how to use hypnosis. She had a cyst of the ovary, and Dr. Edebohls, Dr. Polk, and others examined her while she was under hypnosis without giving any pain or causing any spasm. After she was operated on, she developed a cystitis from the use of the catheter. She was cystoscoped, and the ureters were catheterized without any pain whatsoever under hypnosis. Dr. Furniss said he had employed hypnosis in two other people, but had failed in others. With regard to hemorrhage in cervix operations, he had gotten most perfect hemostasis by using adrenalin 1-6000.

Dr. Stone asked where he injected the adrenalin.

Dr. Furniss replied that he injected it under the mucous membrane covering the whole area he intended to dissect, using not more than forty minims.

The Cancer Problem.—Dr. Eugene Coleman Savidge read this paper. (See page 717.)

Dr. Eden V. Delphey said that when the living body was subjected to the action of radioactivity either from the *x*-ray or radium, the cells, whose equilibrium was most unstable, were the ones first and most acted upon. These cells were the stratum granulosum of the skin, the endothelia of the blood-vessels, the lymphocytes, the cells of the glandular system, the cells of the nervous system, and those of neoplasms. This effect was produced in three different and distinct stages, viz, by stimulating to increased normal metabolism, by increased stimulation to erratic neoplastic growth, and by overstimulation to death and disintegration of tissues, either microscopical or en masse. One reason why the *x*-ray failed in the treatment of deep-seated neoplasms was that, while it might destroy the superficial portion, at the same time because the radio-resistance of the tissues weakened the effect of the rays, the deeper parts were stimulated to increased malevolent growth. As radium was inserted directly into the body of the neoplasm and its action was directly from within outward toward the circumference, and as it had a selective action upon the erratic cells, better results might be hoped for and obtained, provided the dosage could be so adjusted as to destroy the malignant cells and not stimulate the normal ones to erratic neoplastic growth.

Dr. Herman J. Boldt said that Dr. Savidge was probably under the impression that cancer was a systemic disease rather than a local one; that was the import he gained from listening to the paper. If carcinoma was a systemic disease it was difficult to understand how these sufferers were to be cured. If these neoplasms were attacked surgically in their early stages, frequently they could expect a radical cure. For instance, so far as carcinoma of the uterus was concerned, permanent cures might be expected in twenty-two per cent. of the cases operated on radically. On the other hand, a question was brought up in regard to cachexia; cachexia was a preliminary stage of cancer, and Dr. Boldt said he had yet to see a case of marked cachexia and the patient successfully operated on. There was not a single instance on record of a cure of cancer by operation when cachexia was present because of the neoplasm. Dr. Boldt had no doubt but that in time the cause of cancer would be discovered and its cure accomplished, and it might be along the lines Dr. Savidge outlined. The systemic condition of cachexia was consequent upon the local focus of disease.

Dr. Savidge closed the discussion.

Philadelphia Pediatric Society.

At a stated meeting, held April 14, Dr. Alfred Hand, Jr., exhibited a group of cases of "Heart Disease in Children." In some there was a previous history of rheumatism or chorea, while in others there was a history of some other infectious disease. In one the finger ends were clubbed, and an *x*-ray picture showed that the enlargement involved only the soft tissues, and not the bones. Dr. Arthur Newlin presented a case of "Brachial Palsy, Due to Compression by Forceps During Labor." The Patient was a child six weeks old, with total paralysis of the entire right upper extremity. Labor had been difficult and prolonged, and delivery was instrumental. After birth, there was paralysis of both upper extremities, but that on the left side soon disappeared, while that on the right persisted. Drs. S. McC. Hamill and Howard C. Carpenter presented a group of children, exhibiting the "Calmette, von Pirquet, and Moro Cutaneous Reactions for Tuberculosis." For instillation into the eye a ½ per cent. solution of tuberculin was employed, for subcutaneous inoculation a 10 per cent. solution, and for inunction a 50 per cent. ointment in wool fat. There was a certain parallelism in the reaction obtained by all of these methods. Instillation into the conjunctival sac was followed in cases presenting a positive result by redness, and, injection involving not only the conjunctiva itself, but also the semilunar fold and the caruncle. Subcutaneous inoculation gave rise to circumscribed inflammatory phenomena, while the application of the ointment to the skin was followed by the development of papules and vesicles on an erythematous base. The ocular reaction is not wholly without danger, phlyctenular keratitis, with ulceration, occurring in some of the cases submitted to the test. Dr. A. Parker Hitchens read a paper entitled "Anaphylaxis." He defined this condition as one of lessened resistance and increased susceptibility to the action of toxic substances. It has been shown that the introduction of small amounts of serum or of proteid from an organism belonging to one species into the circulation of an animal belonging to another species gives rise to a condition in which a second injection of the same substance in much less than the minimum lethal dose gives rise to speedily fatal results. This termination can be averted in some animals by practising ether narcosis before the second injection is made. A demonstration of these facts was made. Dr. B. Franklin Royer read a paper entitled "Hypersusceptibility to Horse Serum in Man." He cited a number of instances in which when second injections of diphtheria antitoxin were given to children toxic symptoms developed, as manifested by elevation of temperature, articular swelling, urticarial, and other cutaneous exanthems. Fatal results in man have never taken place after such second injections, the small number of deaths following antitoxin injections having resulted from primary injections, and for these an explanation is as yet wanting.

College of Physicians of Philadelphia.

Section on General Medicine.

At a stated meeting held March 9, Dr. E. Franklin Stahl exhibited "A Case of Probable Acute Lymphatic Leukemia." The patient was a boy about twelve years with marked pallor, distended abdomen, enlarged super-

ficial glands, enlarged spleen, enlarged liver, elevation of temperature. There was some interference with the entrance of air into the main bronchi, probably from the pressure exerted by enlarged lymphatic glands at the roots of the lungs. The differentiation was to be made from pseudoleukemia by means of a study of the leukocytes. It had, thus far, been possible only to make an estimation of the hemoglobin percentage, and this was found to be 30 per cent. The condition had not been noticed for more than six weeks.

Dr. J. Alison Scott exhibited "Two Patients Having Thoracic Aneurysms." One of these was an Italian, 65 years old, with a good family and personal history, who had complained of pain in the right chest, extending down the corresponding upper extremity. The veins of the anterior aspect of the chest and abdomen were enormously dilated and tortuous. Under rest and medicinal treatment the pulsatile tumor visible on the anterior aspect of the chest diminished in size, yielding dullness on percussion, and the expansile quality of the pulsation disappeared. The second patient was a colored man who for a time received relief from the operation of wiring and the passage of a galvanic current. Subsequently, however, the symptoms returned in aggravated degree and the tumor underwent increase in size. Dr. Scott exhibited also "A Specimen of Aneurysm Treated by Wiring and Electrolysis." In this case the patient lived for a couple of weeks after the operation and died, not from hemorrhage as a result of rupture, but from acute heart failure.

Dr. George W. Norris exhibited "A Patient Having an aneurysm of the Thoracic and of the Abdominal Aorta." Drs. J. C. DaCosta, Jr., and J. G. Beardsley presented a communication entitled "The Resistance of Diabetics to Bacterial Infections." The paper was based on a study of the opsonic and phagocytic indices in cases of diabetes mellitus, as compared with those in cases of diabetes insipidus, transitory nondiabetic glycosuria and in healthy persons, and it was found that the resistance to tubercle bacilli, to streptococci, and to staphylococci was distinctly lowered, as indicated by a lowering of the indices mentioned. Dr. R. Max Goepp read a paper entitled "A Case of Typhoid Fever Ushered in by an Attack of Uremia." No history of previous nephritis could be obtained and it was only after the symptoms of uremia began to subside that the diagnosis of typhoid fever became clear.

Diagnosis of Slight Cases of Scarlatina.—J. Deshaves says that scarlatina is frequently so slight that the symptoms are almost nil. There is an enanthem involving the boccopharyngeal region, an ephemeral eruption, and a desquamation of the tongue especially, preceding that of the skin. The lingual desquamation is the only characteristic point. It begins at the tip, there being a thick white coat, and extends toward the back of the tongue, leaving a red surface with prominent papillæ. This is the most characteristic symptom, and in its absence we cannot enforce quarantine. Vomiting is slight and like that of indigestion. The eruption is so slight and evanescent that it often appears and disappears in a night. It appears only on the chest, abdomen and back, and being covered by the clothing is not noticed by the mother. The fever is often very slight, and the sore throat not at all marked. But the tongue generally shows some characteristic signs. —*Le Bulletin Médical de Québec.*

Functional Relations of Fetal and Maternal Thyroids.—Giuseppe Fossati has observed a number of cases of thyroid enlargement in the mother during pregnancy in which the child at birth also showed enlargement of the thyroid. He believes that the thyroid does not functionate during intrauterine life. Only in exceptional cases does any function take place. These are cases in which disease of the maternal thyroid rendered it necessary to the welfare of the child while in the womb to have the thyroid secretion. In these cases such function does take place and the gland becomes enlarged. This enlargement disappears soon after birth. In other cases the enlargement of the thyroid seems to be an hereditary condition, and such thyroids do not decrease after birth.—*Annali di Ostetricia e Gynecologia.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 25, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	439	180
Diphtheria	344	39
Measles	1891	39
Scarlet Fever	929	64
Smallpox	—	—
Varicella	153	—
Typhoid Fever	33	11
Whooping Cough	14	1
Cerebrospinal Meningitis	12	7
Malarial Fever	—	—
Totals	3815	341

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending April 24, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Berkley	Mar. 28–Apr. 4	1	..
Los Angeles	Mar. 28–Apr. 4	5	..
San Francisco	Mar. 28–Apr. 4	7	..
District of Columbia, Washington	Apr. 4–11	21	..
Illinois, Chicago	Apr. 4–11	4	..
Springfield	Apr. 2–9	5	..
Indiana, Indianapolis	Mar. 29–Apr. 12	6	..
South Bend	Apr. 4–11	1	..
Iowa, Davenport	Apr. 1–30	11	..
New London	Mar. 28	1	Imported
Ottumwa	Apr. 4–11	7	..
Kansas, Kansas City	Apr. 4–11	12	..
Topeka	Mar. 28–Apr. 11	26	..
Wichita	Apr. 4–11	8	..
Kentucky, Covington	Apr. 4–11	3	..
Louisiana, Hornbeck	Dec. 20–Apr. 13	34	..
Lake Charles	Apr. 14	2	..
New Orleans	Apr. 4–11	14	2 imported
Michigan, Port Huron	Mar. 28–Apr. 11	5	..
Saginaw	Mar. 28–Apr. 11	4	..
Missouri, Kansas City	Mar. 28–Apr. 4	9	..
Ozark	Feb. 13–Apr. 13	17	..
St. Joseph	Mar. 7–14	23	1
Minnesota, Winona	Apr. 4–11	2	..
Nebraska, Fall City and vicinity	To Apr. 9	13	..
Nebraska City	Apr. 6–13	2	..
New York, Buffalo	Apr. 4–11	1	..
Niagara Falls	Apr. 4–11	3	..
Ohio, Chillicothe	Mar. 3–Apr. 15	18	..
Cincinnati	Apr. 3–10	13	1
Murray	Mar. 1–Apr. 3	25	..
Pennsylvania, Sayre	Mar. 14–Apr. 11	2	..
Tennessee, Knoxville	Apr. 4–11	1	..
Memphis	Mar. 28–Apr. 12	9	..
Texas, San Antonio	Apr. 4–11	20	..
Wisconsin, La Crosse	Apr. 4–11	6	..
Racine	Apr. 4–11	5	..
Spokane	Mar. 28–Apr. 4	12	..

SMALLPOX—FOREIGN.

Arabia, Aden	Mar. 16–23	..	2
Brazil, Manaos	Mar. 14–21	3	..
Rio de Janeiro	Mar. 8–15	87	9
Egypt, Cairo	Mar. 11–18	5	1
France, Paris	Mar. 21–28	5	..
Italy, General	Mar. 26–Apr. 2	98	..
India, Bombay	Mar. 10–17	..	44
Java, Batavia	Feb. 22–Mar. 7	10	..
Malta	Feb. 29–Mar. 21	23	1
Manchuria, Dalny	Feb. 9–15	1	..
Mexico, City of Mexico	Feb. 22–Mar. 7	..	11
Portugal, Lisbon	Mar. 21–28	4	..
Russia, Odessa	Mar. 21–28	5	..
Warsaw	Feb. 1–8	..	9
Spain, Almeira	Feb. 1–29	6	..
Vigo	Mar. 1–28	2	..
Turkey, Bagdad	Feb. 22–29	40	8
Constantinople	Mar. 15–22	..	3
Smyrna	Jan. 1–28	10	..
	Feb. 1–29	6	..

YELLOW FEVER.

Brazil, Manaos	Mar. 7–21	6	5
Para	Mar. 21–28	2	2

CHOLERA.

India, Madras	Mar. 7–13	..	4
Rangoon	Feb. 29–Mar. 7	..	2

PLAGUE—INSULAR.

Hawaii, Hilo	Apr. 6	..	1

PLAGUE—FOREIGN.

Africa, Gold Coast—			
Akkra	Jan. 11–Mar. 3	..	114
Brewa	Jan. 11–Mar. 3	..	19
Ninynyano	Jan. 11–Mar. 3	5	..
Tema	Jan. 11–Mar. 3	..	9
Australia, Brisbane	Feb. 1–8	2	..
Sydney	Feb. 24–Mar. 2	1	..
Brazil, Para	Mar. 21–28	1	1
Rio de Janeiro	Mar. 8–13	1	1
Ecuador, Guayaquil	Mar. 30	..	Present
Quito, vicinity	Mar. 21	..	"
Egypt, General	Mar. 10–17	19	7

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Original Articles.

DARWINISM AND DIABETES.

By R. G. ECCLES, M.D.,

BROOKLYN, NEW YORK.

In this year of grace, 1908, it would be a difficult task to find a biologist who is not an evolutionist. This does not mean that they all accept natural selection as the all-in-all of evolution, as do the Neo-Darwinians. The majority, however, believe with Darwin that the principal moulding force, and the one that has brought organic nature to its present condition of perfection, is the selecting one. As invariably occurs with all changes in belief this acceptance of Darwinism, in whole or in part, brings with it the necessary acceptance of far-reaching logical conclusions that must control ideas, regulate conduct, and direct research, in ways not at first contemplated in the change. It may seem a far cry from Darwinism to diabetes, but it is, nevertheless, one of extreme importance and great significance. Along with it go many other of the profound effects of selection ideas on medical science. We see relatively few of these to-day as compared with the overwhelming predominance that Darwinian ideas are likely to have on the medicine of the future. The sooner medical men follow botanists and zoologists into evolutionary methods of thought the better it is likely to be for their patients. The struggle for existence is a never-ending struggle against privation and disease. The struggle against privation is, itself, a struggle against a predisposing cause of disease. It is therefore apparent that *nothing in nature is more closely associated with every form of evolution than is disease.* All along the whole line of organic development the fit that have survived to people the earth have been those that have triumphed over disease and death in this fierce struggle. Every selected organic change has been one in which nature has acted as the physician and the change has been the remedy. Maladjustment, in an organism, always means physiological derangement —or perhaps it would be better to say rearrangement—and the resulting death, whether due to hunger, injury gained in struggling for the means by which to avoid hunger, or by direct bacterial or protozoan invasion, is invariably associated with disease. It needs but a momentary contemplation of any organism for an intelligent physician to perceive that it is defended at every point by some more or less effective protective appliance—protective against microorganisms. To a consistent believer in natural selection these can all have but one meaning. They are there because they have been selected as life saving. They are survivals in past struggles against disease. Their adaptiveness is evidence that the organisms possessing them have survived through such possession. But for these they would not be on the earth for us to study. Had not their forebears again and again, through millenniums of time, faced and baffled disease no such complex series of protective appliances could have been acquired. An accident might bring one, but such a connected and coordinate chain of them could not have arisen fortuitously. Either they were designed by a Supreme Mind or they have resulted from innumerable selections and been preserved together by heredity. No third alternative is thinkable. To the consistent Darwinian these defenses are what is left of battles waged against disease through past eons of time. Every physiological response of the body is part of the complex of fitness. The response to injury and to microbic invasion is as much an adjustment to the requirements of the organism as is that to hunger. The healing forces are as truly physiological as are those of assimilation and growth. To the consistent evolutionist pathology is no more and no less than readapted physiology. The plasticity and the reserve forces are, equally with the daily active forces, physiological. To some physicians this may savor of novelty, but to those who are keeping abreast of biological thought and discovery it will appear as but the statement of a most elementary principle. But it is not all of those who have unreservedly given adherence to this view who are willing to be as outspoken, frank, and unflinchingly logical about it as has been Sir Frederick Treves, Surgeon to his Majesty, Edward VII, of Great Britain. In the Inaugural Address before the Edinburgh Philosophical Institute, in 1905, he created no small amount of commotion by the emphatic way in which he presented this conviction. In words that are certainly free from any suspicion of equivocation he declared that "the processes of disease are aimed not at the destruction of life, but at the saving of it," and that "if it were not for 'disease' in the popular sense the human race would soon be extinct." He then went on to say that "for centuries there has been presented the strange spectacle of men of science struggling to the utmost to thwart, to curb, to annihilate a process of cure."[1] Unfortunately for the ailing, this strange spectacle is far from having ceased, although in one or two instances it has been checked. Those who persist in this strange spectacle are utterly oblivious of the fact that they are doing so and would probably indignantly deny that they are doing anything of the kind. In an interesting paper, entitled "Medicine Old and New," written by Dr. W. H. Dickinson, and published in the *Lancet*, we find the following reference to this same strange spectacle: "Nature and the physician played the part of the Government and the Opposition; whatever one did the other opposed. If purging occurred in the course of cholera, obedient to some natural law whereby poisons

are expelled, the physician was ready with his opiates and astringents to forbid the discharge. We have not to go back many generations to find that there were those who forbade water in cholera for no other reason which is known to us than that nature called for it by creating thirst."[2]

That there are limits to the power of nature to adapt itself to disease it would be foolish to deny. Natural selection has not yet brought complete and perfect adjustment to every kind of disease and injury. Where its opportunities have been inadequate we still have maladjustment. Only in cases where organisms unprepared to respond favorably have been destroyed is selection effective in bringing new or extending the power of old adjustments. Disease, favorable variation, and adequate selection are all necessary factors in enabling an organism to make a good response to an invasion of pathogenic microorganisms. As a consequence we have to deal with some "blunders of nature." Dr. Welsh, of Johns Hopkins University, states this idea in these words: "The agencies employed by nature may be all that can be desired; they may, however, be inadequate, even helpless, and their operation may add to existing disorder."[3] They are adequate where, in the past history of the species, they have been of sufficient selective value to survive during a reign of that or a kindred disease. They are inadequate, and may be injurious, where they lie outside the limits of selected adaptations. Future research will enable us to trace out the exact limits of these adaptations and inform us exactly to what extent and where it is wise for the physician or the surgeon to interfere. In the case of thirst in fever, so general is this demand that it would be absurd for an evolutionist to attribute it to chance, and still more absurd for him to class it as malevolent. To the disbeliever in evolution it may signify nothing or may mean anything according to his type of cosmogony. If it occurred only as an occasional event, in an occasional patient that suffered from fever, no evolutionist could consider it as being, with certainty, a useful response. Its constant association with fever, and its constant association with the needs of the body in health, are evidence of its having been selected and therefore beneficial. Experience has confirmed the view that it is beneficial in disease as well as in health. It meets a tissue want. Inflammation is an equally general response to injury, in all of its principal features, so that the consistent evolutionist must consider it conservative and more or less curative. Concerning it Prof. J. George Adami says: "Taking as our definition that inflammation is the response or reaction to injury, we are inevitably led to see that this response results in counteracting, or, more exactly, intending to counteract, the deleterious effects of the irritant; the inflammatory process tends toward repair. It may not result in repair, for, as we have pointed out in several instances, too often the reaction is either inadequate or excessive."[4] The rule is for injuries to heal and the exception for them to fail to heal. Each exception is a case in which the introduced irritant is excessive in potency within a narrow area, or excessive in quantity over an extensive area. In either case it is one that exceeds the curative power that natural selection, through heredity, has bequeathed. A multiplication of such cases, over a long period of time, would either extend the limits of the healing power or the species would disappear. Here a response of acquired vigor, through a favorable environment, would give the advantage needed, without a variation in the germ plasm.

We now come to the consideration of one exceedingly general reaction of organisms toward adverse conditions, that few medical men have attempted to interpret as conservative and beneficent. The present attitude of almost the entire profession toward it is pre-Darwinian. I refer to hyperglycemia and glycosuria. The same hopelessness now exists regarding these as existed regarding inflammation, fever, and thirst, when they were looked at from the same viewpoint. The presence of an unusual amount of sugar in the blood and its appearance in the urine is deemed a maladjustment. Almost the entire profession is of the opinion that the body, somehow, is at fault in permitting this apparent waste. To few or none has the idea suggested itself that this excessive outpour of sugar may be an attempt on the part of nature to remove some obstruction, cure some injury, or rid the body of some irritant. There are those who feel quite certain that an excessive use of sugar has established and is continuing the trouble. There are still others who hold that the real derangement is due to the body having lost its power to oxidize sugar. We learn that so high an authority as von Noorden "likens the giving of carbohydrate food to a diabetic to the pouring of water into a cracked vessel."[5] All have sought to reduce the amount of dextrose in the blood and some have gone to such an extreme that they have about starved their patients. Every effort of treatment, of explanation, and even of scientific research, has been prejudged and predirected by the assumption that the hyperglycemia is an evil to be curbed, a misdirection of nature to be readjusted. There has been no sober weighing of the facts under the hypothesis that it may be a blessing to be encouraged, an effort at cure not to be frustrated. The fact of our knowing that we do not know what the real trouble is has not appeared to hold us in that truly scientific mental condition of suspended judgment that eagerly seeks to "prove all things." Since the days of Susruta, the seventh century Hindoo who first called attention to the sweetness of diabetic urine, and since the time of Thomas Willis, who, in 1674, rediscovered the same fact in England, what new thing, except Dr. Dobson's chemical proof, in 1775, that the sweetness is really due to sugar, has clinical experience or scientific research taught us about diabetes mellitus? Bunge informs us of the fact that: "This is a subject which touches on all branches of physiological chemistry, and about which a complete library of books has been written, the references to which would alone form a good sized volume."[6] If diabetes is not the most written about subject in medicine it is certainly one of the leaders in this direction, and yet it is the one concerning which the same author says: "Up to the present pathological anatomy has led to no conclusion."[7] Concerning it Dr. Osler declares: "We are ignorant of the nature of the disease."[8] Dr. W. H. Thomson, of New York, tells us that, "with glycosuria we do not know whence it cometh nor whither it goeth; and, therefore, we can never be sure what its significance is."[9] With *"Ignoramus"* thus written in bold characters over it how long shall we remain willing to keep pushing our investigations along this old, non-remu-

nerating road? As if to give a proper finish to the whole Prof. Lusk assures us that "there is no known cure for diabetes."[10] Alas! All this is only too true. Generations of clinical experience with over half a century of original research have proven fruitless. Does it not seem as if it was nearly time to face around, give up the evidently false cues that we have been following, and try a new, untrodden road? Past experience, with fever and inflammation, ought to have rid our minds of the obsessing notion that any general symptom of a disease is an evil to be curbed. Why not try the Darwinian idea, for a while, and assume that the sugar is being wasted as a physiological reaction to overcome some present irritant of exogenous origin? If we scan it for a brief period from this viewpoint we will immediately be astonished at the determined way in which the bodily energies seek to supply that excess of sugar and seek to dam it back in the circulation. Every energy of the body seems as if called upon to accomplish this task, and as if life itself depended on their doing so. Every power of synthesis and of analysis at the command of the forces of metabolism is called into play in order to produce dextrose. The nervous system, the glandular system, the circulatory system, each and all work to this end.. Ordnance and gunpowder are no more in demand during the invasion of a country by an enemy than is the demand for dextrose by the entire bodily energies. Everything in the form of food that is supplied is worked up into dextrose. Even in the case of proteid, in which the conversion is a roundabout one, and the expenditure of energy must be great, dextrose is the product aimed at. When the supplied food is at an end the tissues at once proceed to the work of converting every cell reserve into dextrose. Prof. Lusk informs us that "It has long been known that diabetics eliminate sugar even after all administration of sugar has stopped."[11] Prof. Wells tells us that "This hyperglycemia is remarkable in that, at least in the advanced stages of diabetes, it persists even when the patient is receiving no carbohydrate whatever in the food."[12] Prof. Tigestedt says that "In the severe forms of the disease, to which pancreatic diabetes belongs, sugar appears in the urine even if no carbohydrates are given in the food."[13] Prof. Bunge declares that "the excretion of sugar continues, even though an exclusive meat diet be adopted."[14] The same author also states that "It was proved, by careful experiment in three severe cases, that the patient excreted more nitrogen than a healthy person on exactly the same diet."[15] It would thus appear that even the tissues are drawn upon in order to keep up the supply. If all this is perversion of function and merely aimed at keeping up a hopeless and fruitless waste, then nature must have bungled badly in her selections. For what would appear, from a reasonable interpretation of the facts, to be countless millenniums of natural selection, nature has failed to discover a correction of this evil. If the excess of sugar is of no use in the blood how came all of the organs to be working together to keep it there? Does natural selection ever work toward the accumulation of correlated maladjustments? If it does in this case then there is no reason for assuming that it does not and cannot do the same elsewhere. That it should or could do such a monstrous thing is utterly unthinkable. That would be equivalent to saying that it causes the unfit to survive while destroying the fit, which is a preposterous absurdity. Let us, for instance, take into consideration the case of the kidneys. Von Noorden says: "Let us think for a moment of the quantitative relationships. If we find 0.2 per cent. of sugar in the blood, that is already a respectable degree of hyperglycemia; in the total blood in the body there would be some 5 or 6 grams of sugar over and above the normal. The kidneys, if they were working normally, could easily rid the blood of this in less than one hour. But they do not do so. . . . There should be no such sugar accumulation in the blood if the kidneys were properly performing their function."[16] It did not seem to occur to Prof. von Noorden that this holding back of an extra amount of sugar might be a display of reserve physiological effort for the purpose of aiding that sugar as a curative agent. In bad cases they hold or dam the sugar back in the blood to the extent of 0.44 per cent.[17] Not only do they persist in keeping this sugar back but they do so in defiance of the most potent diuretic treatment. Von Noorden further informs us that:

"In diabetes the kidneys maintain their impermeability to sugar in the face of strong diuretics, even against the urine secretion called forth by theobromine and caffeine. In edematous patients suffering from severe diabetes these drugs often increase the volume of urine only, and do not influence the total quantity of sugar passed. I have several clinical examples of this."[18] To see this from the viewpoint of its being an effort at cure is to make it at once quite explicable. To view it in the opposite light is to be compelled to write it down a mystery. If the sugar is needed in the blood, in increased amounts, this action of the kidneys is seen to be a perfectably reasonable and useful one. If it is thus needed we can easily understand why the nervous system should establish conditions leading to the decomposition of the stored glycogen into dextrose. If needed there we cannot wonder at all the available chemical forces of the body being called into requisition for the purpose of manufacturing dextrose from anything and everything that they can attack. If that dextrose is all made to be wasted, regardless of adaptation to any useful purpose, something must be wrong with nature. It would have been bad enough in a breakdown of the physiological forces had the work in regard to sugar been lessened or stopped, but for every available power to be forced into line to supply this superabundance and to dam it back to the further injury of the organism is something that looks wonderfully diabolic.

Hyperglycemia is one of the most common of disease and internal injury symptoms. The English authority, Dr. Saundby, says: "The list of the immediate causes of diabetes is a very long one, but in most instances the relationship reposes on too well established a basis of clinical evidence to be rejected. . . . In the first place comes the long catalogue of injuries, such as railway accidents, severe contusions of the head, spine or abdomen, violent musular strains, and lightning stroke. . . . Numerous well attested examples have been regarded as sequels of enteric fever, diphtheria, tonsillitis (?), influenza, acute rheumatism, malaria, and syphilis."[19] Von Noorden tells us that, "Besides gross mechanical lesions certain poisons have

the power to produce glycosuria in animals. I may mention CO,CS_2, curare, morphine, strychnine, nitrobenzol, amyl nitrite, uranium salts, salts of mercury, hydrochloric and sulphuric acids, various narcotics, and preparations of theobromine and caffeine. The number grows larger every year."[20] It almost seems as if hyperglycemia inwardly served the purpose of serum to external slight injuries. Professor Lusk tells us that, "Hofmeister has discovered that the fasting organism is more susceptible to alimentary glycosuria than the well-fed one."[21] Since a fasting organism is more susceptible to attacks from pathogenic microorganisms than a well-fed one we would, on evolutionary grounds, expect this to be the case. If the sugar is protective, in any way, what more natural than that it should be poured out, by every animal after fasting, if the slightest degree of bacterial attack has occurred. If the sugar is not protective, and worse still if it is injurious, then its appearance after fasting is unexplainable. Here, too, we are reminded of the fact that in "diabetics during complete starvation sugar continues to be secreted in the urine in considerable amounts."[22] We are forced to inquire why, if the sugar is an injury, the cells, at the expense of their own substance, thus pour it out? Why do they manufacture sugar, out of that which is not sugar if it is an injury to them? Here is an apparently deliberate turning out of their way to do that which is said to be damaging. But hunger is not the only thing that is known to lower vital resistance to germs. Cold will do the same. Dr. Saundby tells us that "exposure to severe cold, and the ingestion of cold food (ices) or iced drinks"[23] is among the causes of glycosuria. A most remarkable thing about this action of cold is that it not only causes the pouring out of an excess of sugar into the animal circulation but it does the same in the vegetable world. Pfeiffer says: "It seems *very commonly* to be the case that when exposed to cold, plants contain a larger proportion of sugar."[24] (Italics mine.) Elsewhere the same author tells us that, "The fact that cold acts as a stimulus inducing an increased production of sugar in many plants is of great biological importance."[25] It is a well known fact that many kinds of seeds contain a glucoside associated with an enzyme so that immediately the seed is injured in the presence of dampness, sugar is formed to bathe the injured surface. Bunge tells us that when animals are chilled, experimentally, they convert their glycogen into an increased supply of sugar.[26] It is thus seen that practically all of animated nature reacts to the depressing effects of cold by a hyperglycemia. Just as the external injury of a plant is bathed by its healing juice so an internal one is treated by an extra supply of sugar. Just as an external injury in an animal is treated to an outflow of serum so an internal one is treated to an extra supply of sugar. There is still another common cause of reduced resisting power in animals, and that is fatigue. Here again the vital forces respond with a hyperglycemia. Surely so general a phenomenon must be replete with meaning and must, through millenniums of natural selection, have been thus saved through being of service to all forms of life. The evolutionist is constrained to say with Pfeiffer that it must be "of *great* biological importance." If it is a menace to life then we must conclude that nature has been badly put together.

A quarter of a century ago, when the writer was beginning the practice of medicine, all the text-books assured us that the proper way to treat cases of glycosuria, of every kind, was to withdraw all carbohydrates possible from the diet. The dextrose was considered the demon of diabetes, and every case of glycosuria was a case of diabetes. Since then many of us have learned, to our cost, that a rigid exclusion of carbohydrates is scarcely a proper proceeding. For some reason current theory has not been found to agree with the possibilities of practice. This, however, does not seem to deter authors from still advising what they are pleased to call "careful dieting." It would be rather difficult to know, at present, just what is meant by this expression. It has become exceedingly elastic in meaning. In "Diet and Disease" we are told that "careful dieting may prolong life and prevent the onset of complications. In these cases the carbohydrates are of no value as food, but they may be allowed now and then to satisfy the patient's craving for them. In order to check the glycosuria, not only the carbohydrates must be discontinued, but the amount of protein also must be reduced."[27] The authors just quoted do not seem to be aware of the fact that Kulz has shown that "in severe diabetes there is a smaller amount of sugar in the urine than would correspond to the carbohydrate of the food."[28] It is not, therefore, true that the "carbohydrates are of no value as food." The statement that the carbohydrates "may be allowed now and then to satisfy the patient's craving for them" reminds one very much of the time when soft-hearted doctors relaxed their stubborn rules sufficiently to let fever patients have a little water "now and then to satisfy the patient's craving" for it. We have already seen that if a diabetic is starved he will use up his bodily tissues in order to get sugar for the circulation. Is it not then rather hard on patients to restrict even the proteid, seeing that it means that the patient will get his excess of sugar anyway? It practically means a hastening of his death. All recent work on the physiology of assimilation has been teaching us that every change the food undergoes, from the mouth to the cell, is brought about by a connected series of stimulations. Each step introduces a stimulation that brings about the next step. The evolutionist cannot avoid seeing in this a linked mechanism that has resulted from ages of successive selections. Hunger and thirst are the beginning stimulations that compel the animal to supply the stomach with food and drink. Every person knows that there are many kinds of hunger having selective power over various kinds of food. The hunger for fat is quite unlike the hunger for bread. The hunger for bread is not to be confounded with the hunger for meat. We have a multitude of choices in the many stimulating flavors. One carbohydrate may, for a while, satisfy the longing for carbohydrates in general, but let any person try to live for a while in Japan, on Japanese food, and he will soon feel an intense craving for bread that nothing else can assuage. Until he gets it, every meal will leave a longing void. There is a choice, by the stomach, from among proteids, and likewise a choice from among fats. What the cells have adjusted themselves to the stomach calls after. If they need water they never call for sugar. If they need fat they do not call for sugar, although able to convert that

sugar into fat. The unbroken chain of successive stimulations is thus seen to be selective. Let that chain be broken, and then, instead of a call for a given type of food there comes first an indifference to it and later a repugnance. An excess of any one kind of food brings a sense of disgust toward that food. In various conditions of disease we refuse to eat certain kinds of food because we "turn against it." In extreme sickness the connections with the cells are all severed, except, possibly, for water. If, in diabetes, the connection between cell and sugar is severed we should expect a loss of desire for sugar and for the usual sugar-producing substances. Instead of this, however, we find the reverse. There is an increasing longing for carbohydrates, just as there would be if more was needed than was being supplied.

One of the most comical features connected with the tragedy of diabetes is the new attitude of the no-carbohydrate advocates in regard to cures for this affection. In the same work in which students have been told that "not only the carbohydrates must be *discontinued* but the amount of protein also must be reduced" we learn that "Mossé first advised the potato cure as a means of treating patients suffering with diabetes. His plan is to replace all carbohydrates by potatoes for a period of several weeks. . . . Mossé found a marked diminution in the glycosuria and polyuria while the patient was taking the potato starch, as well as a diminution in thirst and an increase in strength. . . . Offer has confirmed the observation of Mossé and von Noorden, too, extols this plan of treatment." [29] To the writer this looks like an unconditional surrender and that nature has whipped them into line by hard blows. Like the "fiction" in law they believe in keeping a wordy consistence with their past record but at the same time getting into full line, in practice, with progress. If the carbohydrates must be discontinued, where the patients themselves direct, the doctor must prescribe for them, as medicine, a food containing over 75 per cent. of carbohydrates, when its water is excluded. Using carbohydrate as a cure and forbidding it as a food looks a bit inconsistent. It would not be at all surprising to soon hear of a bread cure or even of an arrowroot cure. A recent verdict, however, on bread is that "It is the *bête noire* of diabetic diet. The patient, whatever his indifference to bread while in health, immediately acquires an irrepressible longing for it when it is interdicted. The ordinary white wheat flour contains 85 per cent. of starch and it is unfit food for a diabetic." [30] If potatoes have proven to be a good "cure" for diabetes it is hard to understand how bread can be so bad. It has a little more starch, it is true, but the difference is so slight that it could easily be overcome by a slight dilution of the flour as, for instance, giving Graham bread. The "irrepressible longing," which it took ages of natural selection to establish, evidently means nothing but whim to those obsessed with ancient notions.

In a report on the Progress of Medicine, in the *New York Journal of Medicine*, we are told that: "The sudden and complete withdrawal of carbohydrates from the diet of a diabetic patient is known to be dangerous." [31] Dr. W. H. White, of Guy's Hospital, London, states that, "too sudden a deprivation of carbohydrates may lead to coma." [32] It thus would appear that a change which suddenly lowers the sugar contents of the diabetic's blood tends to hasten coma and death. When the system is given time to produce sugar from proteid and to thus keep up the hyperglycemia no such calamity befalls. The work of tearing down the proteid and then reconverting it into dextrose requires time and effort on the part of the cells. During the delay of readjustment the body suffers and the patient becomes comatose. This forcing of the system to use proteid where carbohydrate is required is, itself, a sort of superimposed disease upon the diabetes. It necessitates a derangement of normal metabolism just as a disease does. The response to the enforced change in diet, like disease responses in general, is only possible because of the reserve power that natural selection has provided. Like all substitutes for normal processes, however, it has serious limitations. That this is so is seen in the fact that "A diet consisting exclusively of proteid is objectionable, because it gives rise to acetonuria and increases the danger of coma." [33] Even von Noorden acknowledges this fact when he tells us that, "Hirschfeld attributed acetonuria in febrile states to defect of carbohydrate in the food taken, and, as a matter of fact, febrile diaceturia and acetonuria are often observed to diminish after the administration of carbohydrates, as is also to be noted in acetonuria attending starvation or a diet of animal fat." [34] Can the unbiased reader take in such facts as these and not become suspicious of past lines of treatment as having been the very things that produced the dangerous and appalling symptoms that have all along been attributed to the sugar? The supplying of carbohydrates stops the coma, the taking of them away from the patient produces it. The carbohydrates of potatoes add strength and vigor to the sufferer and make him feel well. Diabetics, like normal human beings, can get along well only on a normal diet. An abnormal one only adds an artificially produced disease to the diabetes thus giving him two diseases to fight instead of one. To crowd upon them a diet that would make a well man sick is only to make a bad matter worse. Since they require dextrose to maintain bodily energy, the same as other mortals do, why put the system to the extra strain of synthetizing that dextrose from protein? Even if at the expense of great drain through the kidneys, since the bodily energies insist upon that way of doing things, the waste is less if the dextrose is supplied in the most easily available form. The claim that the body is incapable of using the dextrose when supplied has no bearing on the subject. The entire effort of the body is bent toward keeping it there, and we have already seen that more enters as food than passes off in the urine, even in severe cases. Let us now consider another fact having a bearing upon this. Dr. W. H. White, whose paper we have already quoted from, says: "We want an explanation of the strange disappearance of sugar when coma comes on. This may be of great practical importance." [35] That it is of great practical importance none will doubt when they have begun to view the problem from the Darwinian viewpoint. It means, and can mean nothing else, that in the collapse of the body the effort to hold a large amount of sugar in the circulation is withdrawn and glycolysis proceeds, unhindered. The physiological effort at saving the body from the impending danger of the real cause of the diabetes

is compelled to end by the more imminent danger of the coma perhaps brought about by false feeding. The engine of metabolism having been switched into the side track of proteid conversion is compelled to rush back into the true track, in order to avoid destruction of the entire body. The danger along the true track has become less than is the danger in the switch. Let us now, for a while, reconsider the danger that is supposed to exist in the sugar itself.

When the unknown irritant that is the real cause of diabetes shows no immediate signs of a hastily fatal termination how much harm does the sugar produce? Dr. Saundby says: "I have recorded an instance of persistent glycosuria in a man who appeared quite healthy, and at the present time, eight years after I first found sugar in his urine, *he is in good health,* although Fehling's solution is still reduced by his urine to a degree indicative of 1.2 per cent. of sugar."[36] With the blood loaded with sugar for eight years, and the patient maintaining apparent good health, it certainly does not indicate that the sugar is capable of doing much harm. Dr. W. H. White says: "Three months ago I saw a man, aged 62 years, whose urine had a specific gravity of 1.036; it contained much sugar, gave no ferric chloride reaction, and he appeared perfectly well. He said that sugar was detected in 1885."[37]. From 1885 to January, 1903, makes 17 years. To excrete sugar for 17 years and remain all this time in apparent good health, particularly at his time of life, does not indicate that sugar is a very bad thing to have, even an excess of, in the circulation. This clinical evidence is further confirmed by animal experiments. Exceedingly large quantities, as compared with the amount in normal blood, have been subcutaneously injected into dogs, without the slightest signs of toxicity. The experiments demonstrated that the animal body has great power in utilizing dextrose when administered in this way.[38] The fear of sugar, as sugar, is probably a vestige of the time when no one was allowed to sell it but the dealer in poisons, and he dared not dispose of it without a physician's prescription. The ghosts of such antiquated notions still continue to interfere with logical thinking even among many who think themselves entirely emancipated from them. If more evidence is still demanded in proof of the harmlessness of sugar the geographical and social distribution of diabetes ought to be sufficient. Find a place where sugar-cane is grown, and sugar consumed in abundance, and one is found in which diabetes is exceedingly rare or else is unknown. Find a region where carbohydrate food constitutes the bulk of that consumed and that place will be found to contain little diabetes. Discover a race that subsists exclusively on carbohydrate food and we discover one that knows no diabetes. Find a religion whose votaries must subsist exclusively on a vegetable diet and one will be found that knows little or nothing about diabetes. Now, on the other hand, the discovery of a class, people, or faith, where meats are largely consumed is quite likely to be one in which the death rate from diabetes is at its maximum. Such at least has, so far, been the results reported by those who have made a study of its geography. If we turn to Europe and America what do we discover? The very men and women whose daily food comes most nearly up to the standard of diet prescribed for diabetics are the very men and women in whom the cases of diabetes are most numerous and most fatal. They are the people whose daily ration is filled with fish, flesh and fowl, and in which but little room is left for bread or potatoes. The plain people who subsist on the more economical diet—a diet chiefly carbohydrate—know but little of diabetes. It is those who regale on table d'hote dinners who are the sufferers. They fill up on chicken and turkey, quail and partridge, venison and mutton, beef and oysters, fish and lobster, with only a minimum of carbohydrates. With an increase in the wealth of a nation comes an increase in the number of cases of diabetes, and *pari passu* with this, an increase in the consumption of proteid with a corresponding decrease in the consumption of carbohydrates. That others have observed this the reader has only to look up the literature on the subject to find the proof. In the United States the sugar-growing region is the one with the smallest proportion of cases.[39] Saundby tells us that "in Mauritius and British Guiana—countries in which the people are chiefly employed in the manufacture of sugar, in Africa where the sugar cane and other sweet fruits and vegetables form a large part of the diet of the natives, and in Ireland where the food of the peasantry is mainly vegetable, the disease is relatively rare."[40] Clemow tells us that, "The Jains, whose only animal food is milk and butter, escape it, and so also do the Sadhus, Yogees, and Chorboys of Muttra, who live almost entirely on sweets."[41] The same author adds: "In many countries outside India the natives live practically on nothing but farinaceous food, and yet do not develop diabetes; and in India itself the Jains, who live under similar conditions, escape it, and so also do Hindoo widows, who never touch animal food." The same author further adds: "It is, perhaps, a disease of civilization. Luxury, a sedentary life, a neurotic temperament, and town life all seem to favor the production of diabetes in the individual, and these are found in their highest development in the most civilized countries."[42] Edwards tells us that "Wealth and culture increase tenfold the predisposition to diabetes." Neither of these authors mention the fact that in all instances great proteid consumption and diabetes stick about as closely to each other as a shadow does to its substance. The Hindoo rich, coming from a people accustomed for ages to an almost exclusive diet of carbohydrates, show a lack of resistance that might be expected. The Hebrew, under oppression, forced by economy to subsist on carbohydrates and coming from an Asiatic carbohydrate stock, is likewise very susceptible. When rich he seeks to imitate his fathers, when leaving Egypt, by crying out for the "flesh-pots." This lack of immunity on the part of the non-exposed, suggests a possible infection, and, in another article, I will endeavor to show some facts bearing in this direction, while, at the same time, Cohnheim's enzyme activator, and the Islands of Langerhans, will be discussed, as to their relationship to the views here expressed.

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CEREBELLAR HEMORRHAGE: REMARKS ON THE FUNCTIONS OF THE CEREBELLUM.

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NEW YORK.

Hemorrhage into the substance of the cerebellum is very uncommon compared with cerebral hemorrhage, and victims of it rarely survive. The subject of the following remarks seems, however, to have had such a lesion and now displays characteristic features of disease of that remarkable organ, remarkable because, though destruction of it in animals produces most striking symptoms, these symptoms disappear after a brief time, compensation being afforded by the cerebrum, particularly by the sensorimotor cortex. In reality we know very little of the indispensable functions of the cerebellum. Its chief rôle apparently is to regulate coordinated movements, but it has other and very important functions, as may readily be inferred from the symptoms that result when it is experimentally destroyed in animals or when it is diseased in man. The middle lobe, the worm or vermiform process, is functionally more important than the lateral hemispheres, and removal of half of this middle lobe in animals causes similar disturbance to that produced by removal of a lateral lobe. The effects of unilateral ablation are manifest in disturbance of equilibrium, peculiar attitude, disordered sensibility, and ocular symptoms. In human beings injury and disease of the cerebellum cause similar symptoms, and also disorder of speech.

The disturbance of equilibration which experimental destruction of the vermis or a hemisphere causes, is manifest by a tendency of the animal to rotate on its own axis. When the right half of the cerebellum is removed the rotation is toward the right, and *vice versa*. This phenomenon is not always present by any means, but unsteadiness of station and profound incoordination of all voluntary movement always exist, and this incoordination is much less when the individual is lying. No true paralysis occurs in cerebellar lesions, but despite this, in animals experimented upon, there seems to be a motor paresis in the limbs on the side on which the operation has been performed, and Bruce has suggested that these motor disturbances may possibly find explanation in the disturbance of the opposite cerebral cortex which results from the unilateral ablation of the cerebellum. It is possible, however, that impulses from the cerebellum to the muscles of the limbs go by way of a pathway from the cerebellum through Deiter's nucleus to the spinal cord, and

Fig. 1.—Illustrating position and attitude of the patient while sitting

to the cutting off of such influences is to be attributed this paresis which has been so often noted.

The attitude which the animal assumes after ablation of one-half of the cerebellum is characteristic. The neck is curved, the convexity towards the side of the lesion, and the head is twisted so that the side of the face corresponding to the side of the lesion is directed upward. There is a spasm in the muscles of the limb on the side of the lesion, and the knee-jerk is increased on the same side, diminished on the other, but this diminution soon disappears and both knee-jerks often remain exaggerated for a considerable time. Bruce believes that he has been able to make out a diminution of cutaneous sensibility in animals whose cerebellar hemispheres have been injured, is most marked in the limbs on the side of the lesion. This has not yet been noted

in man with cerebellar disease. Displacement of the eyes always occurs from unilateral ablation, both eyes being turned away from the seat of injury, the eye on the opposite side of the lesion usually being more displaced than the one on the same side, and nystagmus is invariably present.

The results of experimental lesion and destruction of portions of the cerebellum, such as one lateral lobe including the flocculus or half of the middle lobe, are very soon compensated, and after a few months animals that have been operated upon present no abnormalities unless very careful examination is made. If the Rolandic area of the brain, however, is destroyed, simultaneous compensation does not result, the cerebellar symptoms continuing. In the human being injury to

Fig. 2.—Showing position and attitude of patient while standing.

the cerebellum early in life and arrested development of the cerebellum may not give rise to any symptoms in adult life, the functions of the cerebellum having been assumed by other portions of the brain.

The functions of the cerebellum are so well indicated by the symptoms displayed even now by the patient whose history I am about to relate that his story seems to me worthy of record. He is a survivor of that comparatively rare condition, hemorrhage into the cerebellum. The majority of patients who suffer this accident soon succumb, especially if the lesion is of sufficient size to destroy a considerable part of the middle or lateral lobe, for then the blood may penetrate by way of the middle peduncle into the pons, and then, reaching the surface, becomes subarachnoid; it spreads out in the tentorium, or it may burst into the fourth ventricle.

The symptoms ending cerebellar hemorrhage may develop suddenly, or they may be preceded by such premonitory manifestations as headache, dizziness and retraction of the head. Pain is almost invariably at the back of the head and neck. In a few instances premonitory symptoms, such as vomiting and rotation, have been described. In the case of my patient the symptoms were so abrupt in their onset, so complete in their early manifestations, and so persistent in their course that the diagnosis was made early.

The patient is a tailor, 48 years old, who, until attacked with the illness that still incapacitates him, was in good health. In youth he had had several attacks of gonorrhea, but he denies syphilis. He had been accustomed to use tobacco and alcohol, sometimes rather immoderately. There is nothing in his history that may be construed to have any bearing upon his present trouble, nor had he any premonitory symptoms of the disease, which attacked him in August, 1904. While walking he was seized with violent ringing in the ears and dizziness, and he fell to the floor, but did not at once become unconscious. The man to whom he had been talking says that he noticed a twitching of the patient's face. He was taken home in a semi-conscious state and soon began to vomit. This continued for upward of four hours. I have not seen the physician who treated him at this time, but from the family I learn that he was semiconscious, restless, incoherent, and that he had fever. At the end of the third day he was taken to a hospital, and for three weeks he remained in a semi-conscious state, at the end of which time he gradually emerged from it, developing delusions that people wanted to kill him, etc. While in bed he is said to have been very "restless." That is, it was difficult to keep him still, and when he moved about it was with so much abandon that he would fall out of bed, and therefore had to be restrained. His speech was unintelligible, and this may explain his reputed incoherency, but his mind may well have been disturbed. He complained of double vision and of a dull pain in the back of the head, which compelled him to keep his head forcibly extended upon the neck. There was no incontinence of the sphincters. Examination of the urine soon after he went to the hospital revealed the presence of sugar. This disappeared in about three weeks.

At the end of three months he began to move about, and then very striking staggering was noticed. He is said to have reeled and tumbled like a drunken man. He himself said that he felt dizzy and deeply conscious of the sense of disequilibrium. Soon after he regained consciousness it was also noticed that he laughed and cried in an uncontrolable way and frequently.

His complaints, on entering the Montefiore Home, of which he is an inmate, were difficulty in walking, impaired vision, a peculiar heavy sensation in the back of the head and forced position of the head, vertigo, and dribbling of saliva. Examination then showed a well-nourished individual who sat with his head drawn backward and toward the left, the face tilted toward the right. This is the position which the head has constantly assumed since the disappearance of the acute symptoms. When he attempts to relate his symptoms he displays a very peculiar voice and speech.

The voice, which is high-pitched, has lost its timbre and the articulation is explosive and staccato. While talking he has attacks of uncontrollable laughter and the saliva dribbles. When he arises his movements are irregular, and on standing with the feet together and the eyes closed he sways very considerably. On walking his gait is typically "cerebellar," he sways and reels, pitches and tumbles, but rarely falls. He walks as well with his eyes closed as with them open.

Examination of his eyes shows marked nystagmus in all directions and pronounced arcus senilis. The pupils are equal and react to light, distance, and cutaneous irritations. There is paresis of the interni and externi of the left eye, *i.e.* of the third, fourth, and sixth nerves. The optic discs are pale. The functions of the fifth nerve are undisturbed. Facial innervation is more active and pronounced on the right side than on the left, and the pharyngeal reflex is brisker on the right side than on the left. The function of the eighth nerve on the right side is normal; on the left hearing is somewhat diminished. The ninth, tenth, eleventh, and twelfth nerves are normal. The jaw-jerk is present, but not exaggerated.

There is no conspicuous diminution of strength in the extremities. There is distinct hypotonia of the lower extremity. The knee-jerks are lively, the right one a little more so than the left. There is diminished Achilles jerk on the left side. The cremasteric and planteric reflexes are normal. The triceps and wrist reflexes are equal, not exaggerated. There is tremor of both hands, more of the right than the left, and it is of the type known as intentional, *i.e.* it occurs on purposeful effort.

There is no disorder of touch, pain, temperature or stereognostic sensibility. Deep muscular sensibility is preserved throughout. There is no atrophy or deformity. There is pronounced inability for the patient to pronate and supinate rapidly either hand, more difficulty in the right than in the left (Babinski phenomenon).

When the patient lies down the ataxia in both upper and lower extremities is very much less than when he is standing and attempting to walk. Repeated examination of the urine always reveals a trace of sugar. The highest percentage he has had is 0.25, and, aside from an excessive amount of indican, there are no other abnormalities save a high specific gravity.

The signs which he presents to-day are not materially unlike those which he had when he came to the hospital and which have just been related. He is a fairly well nourished man who holds his head in a peculiar position, the chin tilted upward toward the right, the head drawn backward toward the left. Such position of the head, first described by Hughlings Jackson (*British Medical Journal*, November 4, 1871), and now universally known as "cerebellar attitude," is very suggestive of cerebellar lesion, and it has often been pointed out that the direction of the face in such cases is away from the half of the cerebellum that is the seat of the lesion. As he moves his eyeballs into extreme positions distinct nystagmus may be noticed. When the right eye is covered and the left eye moved into forced positions toward the left and right, it is noted that these movements are incomplete, indicating the former paresis of the third, fourth, and sixth nerves, the two latter especially. When he attempts to narrate the events of his illness a striking alteration of the voice is evident. The voice has lost its tone color, there is no coordination of pitch and force. He opens his mouth for the words to come forth, and there is an explosion, then the next word is uttered in a whisper or nearly so, that is to say, he has apparently lost the capacity to articulate and to phonate regularly and harmoniously in very much the same way that he has lost the capacity to cause certain voluntary muscular contractions and regularly to inhibit them, to maintain equilibrium, station, and gait. In other words, the speech disturbance which he has is of a nature not unlike that which is at the basis of his ataxia. In addition to the abnormalities of speech that I have just referred to, there is a plaintive, whining note which so many patients with cerebellar and ponto-cerebellar disease have, and which is probably the result of incapacity, voluntarily and quickly to inhibit impulses going from the speech area in the brain to the peripheral speech apparatus. Aside from these factors there is nothing noteworthy about the patient's facies save some drooling of saliva, especially when his attention is distracted.

When he attempts to pick up coins a tremor develops, which increases with the purposeful effort, and which is therefore spoken of as an intentional tremor. This is to be seen more conspicuously when he carries a glass to his mouth, or when he attempts to put the tip of the index finger on the end of his nose. The movements have a certain abruptness which is unlike the rhythm of many coarse tremors. This tremor does not seem to be increased by closing the eyes, and it is to be seen in his handwriting as distinctly as anywhere else.

When the patient walks about, the most striking feature of his infirmity becomes evident. He starts as though he were going very well, but he has not taken two steps before he inclines abruptly to one side, pitches, reels, and seems about to fall, when he gathers himself and stops for a moment to get steadiness and confidence, and then goes on again. When he stands, his pose seems secure enough, but the upper part of the body, and particularly the head, manifest oscillations which give the impression that the individual is struggling to keep his equilibrium, but he maintains that he is not, and his statement is much substantiated by the fact that when his feet are put in approximation this titubation is not increased.

When the strength of his muscles is tested it is found to be retained to an astonishing degree. The muscles of his upper extremities contract energetically and powerfully, and when he lies down and is made to flex and extend the thigh and leg under resistance, he does it with power that would be attributed to a normal individual. While he is thus lying down he displays a condition that has been studied by Babinski, and out of which study has grown a sign of much importance in the diagnosis of cerebellar diseases. When he lifts his lower extremities from the table and holds them in mid air they are motionless. Now, in the healthy individual who attempts to do this there is, after a few moments, a flickering in certain muscles of the thigh, and soon afterward quite irregular movements of the legs. Babinski has endeavored to show that volitional equilibrium must be considered in two aspects: First, static equilibrium, *i.e.* equilibrium of the body in a state of repose, and kinesthetic equilibrium, *i.e.* equilibrium of the body in a state of movement, and that a lesion of the cerebellum may apparently produce the paradoxical result of very ma-

terially diminishing kinesthetic equilibrium (*i.e.* producing the disorder of gait which is illustrated in this man), while at the same time accentuating or increasing static equilibrium (*i.e.* producing the remarkable capacity for fixation of the lower extremities such as this man has when he is lying on his back). Babinski has further demonstrated that persons with cerebellar disease have incapacity to make successive movements rapidly, such as pronation and supination of the wrist. The rapid succession of such movements, or of any movements for that matter, involves the faculty of arresting suddenly a motor impulse, *i.e.* a contraction in a muscle or group of muscles, as well as sending to other muscles a new impulse which will cause them to contract. This faculty is essential to kinesthetic equilibrium, and for some reason not yet explicable it is disordered in cerebellar disease. The best way to distinguish this capacity is to have the patient lay his hand flat upon the table and then rapidly to supinate and pronate the hand. Patients with cerebellar disease do it very slowly or not at all. This patient, for instance, does it about one-third as rapidly as the average individual. Ten years ago Babinski demonstrated an alteration of the plantar reflex, which was constant in all diseases of the central nervous system, that caused a degeneration of the crossed pyramidal tracts of the spinal cord, and which has been accepted as one of the most important signs of organic disease of the nervous system. This sign of cerebellar disease, to which he has given the name of diadococinesia (formed from two Greek words, meaning successive and movement), is no less valuable as one indicating disease of the cerebellum.

Sensibility for touch, pain, temperature, and stereognosis seems to be well preserved. There is distinct hypotonia of the left lower extremity and there is also slight hypotonia of the right. The tendon jerks, knee and ankle, are not particularly abnormal. They are all lively, but it would be unjust to maintain that they were pathologic, nor, indeed, are the superficial or deep reflexes throughout the body in any way disturbed. The only one of the special senses that is disordered is that of sight, and this diminution of vision is dependent upon changes in the optic discs, which are in a state of partial atrophy.

In conclusion, then, the disease of the cerebellum which this patient has, or, perhaps, one might better say the alterations in the cerebellum sequential to an accidental occurrence, viz., hemorrhage of the cerebellum, illustrates fairly well the functions of the cerebellum as they have been determined by experimentation. The position of his head, the alteration of speech, the profound disturbance of gait, the nystagmus, the intentional tremor, and the inability rapidly to perform successive movements, form a complex of symptoms whose significance is unmistakable. They are pathognomonic of disease of the cerebellum, not of the disease which this patient has. As a matter of fact, when patches of sclerotic tissue develop in the cerebellum, in the disease that is commonly called disseminated insular sclerosis, the symptoms may be quite similar to those which this patient has, and there are cases of cerebellar tumor in which the symptoms of intracranial pressure, such as headache and vomiting, are not conspicuous, which have parallel symptoms to those displayed by this patient. Indeed, if we were ignorant of the history of this patient, and particularly of the details of his attack two and a half years ago, we should not be justified in making the diagnosis that has been made. Under such circumstances, knowing as we do that the symptoms of disseminated insular sclerosis often come on abruptly, indeed so abruptly as to suggest an acute inflammatory process, such as acute myelitis or encephalitis, it would have been incumbent upon us to consider very closely the possibilities of that disease. In doing so, one fact, however, would have had great weight in excluding it, and that is that disseminated insular sclerosis rarely, if ever, occurs after the fortieth year of age. Although the disease sometimes apparently manifests itself in a recognizable way as late in life as this, invariably it will be found that symptoms bespeaking its existence have occurred many years before. The patient has apparently only a moderate degree of generalized arterial sclerosis, and no evidence of renal or cardiac disease. What predisposed his cerebral blood-vessels to brittleness and what caused one or more of them to rupture we can conjecture, but we cannot state.

REPORT OF NINE CASES OF FRACTURE OF THE CARPAL SCAPHOID.

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The following cases of fracture of the scaphoid, seen at the Roosevelt Hospital Dispensary, seem worthy of record at this time, while the treatment of this injury is still a matter of debate.

Case I.—C. B., aged 44, laborer, May 29, 1905. Fracture of the left carpal scaphoid; fracture of the olecranon. Five days ago the patient fell off a wagon on the flexed left hand; since then he has had pain in his wrist and has been disabled. The wrist has not been treated.

Examination: Crepitus. Sensitiveness over back of radial side of wrist in region of scaphoid.

Treatment: Plaster of Paris, slit up at sides, reaching to the end of the first phalanges.

May 31. Doing well. *X*-ray. Strapping for olecranon.

No further note appears on the history, and the patient cannot be found.

Case II.—C. M., aged 57, stationary engiuer, October 13, 1906. Old fracture of right carpal scaphoid; dislocation of right semilunar. Patient caught his hand in engine on August 16. He gives a distinct history of forced flexion of his hand upon a stationary forearm. The injury was followed by pain and swelling, and was treated on a diagnosis of sprained wrist. The patient worked for five weeks afterwards, and then was compelled to stop because the wrist became stiff.

Examination: The hand is swollen and in slight adduction. The wrist is thickened, especially on its radial side. Tenderness to pressure is present on the radial side of the wrist. Motion at the wrist is markedly limited and painful, and motions of the fingers are restricted. All the fingers seem equally involved. The *x*-ray shows fracture of the scaphoid and dislocation of the semilunar.

Treatment: Operation advised and refused.

Case III.—F. S., aged 27, boatman, October 20, 1906. Fracture of the left carpal scaphoid. Two days ago the patient fell on his superextended hand and injured his left wrist. Pain and swelling have been present since.

Examination: Hand swollen and edematous. Tenderness is marked over the wrist. Motion in the

wrist is painful. The hand is in radial abduction. Patient has secondary syphilis. The *x*-ray shows fracture of the scaphoid and probably dislocation of the semilunar. There is an old bullet in the radius, a relic of the Spanish war.

Treatment: October 22, ether. Plaster-of-Paris slit up side, reaching to phalanges, pinched in front and back over the scaphoid to prevent displacement. Hand put up in slight ulnar adduction. Crepitus over scaphoid could be felt under ether.

November 10, plaster removed. Extension free in fingers, flexion somewhat limited, especially of middle finger. Flexion limited in wrist. Treatment, strapping.

November 14. Some limitation in all directions

February 27, 1907. Practically perfect motion. No deformity. Patient is at work and says his wrist is as good as ever.

Case IV.—J. H., aged 20, driver, February 7, 1907. Fracture of left carpal scaphoid; sprain of right wrist. Patient fell off truck yesterday and injured both his wrists.

Fig. 1.—Case IV, right side.

Examination: Right wrist slightly swollen. No sensitiveness present, nor pain on motion. Left wrist swollen. Pain on motion, and limitation in all directions. Marked sensitiveness anteriorly and posteriorly over scaphoid. No bony deformity. Motion of fingers unrestricted. The *x*-ray shows fracture of the left scaphoid. No displacement.

Treatment: Plaster-of-Paris, slit up radial side, with dimples back and front over scaphoid.

No further note appears in the history, and the patient cannot be traced.

Case V.—C. G., aged 15, schoolboy, July 30, 1907. Fracture of right carpal scaphoid. Two weeks ago the patient fell on the right superextended hand. The injury was followed by swelling and pain in the wrist, and was treated with a diagnosis of sprain. Now the patient suffers pain when he uses his hand.

Examination: Slight swelling over the back of the wrist, just below the radius. Sensitiveness is present, most marked over the back of the scaphoid and in the snuffbox; not present in the palm. Crepitus. Practically no limitation of motion. No thickening. No displacement. The *x*-ray shows fracture of scaphoid.

Treatment: Plaster-of-Paris.

August 14. Plaster removed. No deformity. Slight resistance to adduction of wrist; other motions free. Motions in fingers unrestricted. Treatment, strapping.

August 23. Strapping removed. Massage ordered.

August 30. Steady improvement.

Fig. 2.—Case IV, left side.

September 6. Motion at the wrist still somewhat limited.

September 28. Flexion and extension slightly limited and cause pain when carried to extremes. Abduction also slightly limited.

February 14, 1908. District nurse reports perfect function.

Fig. 3.—Case V, right side.

Case VI.—G. M., aged 18, driver, October 16, 1907. Fracture of the left carpal scaphoid. Last night the patient fell, presumably on the superextended hand, and hurt his left wrist. Since then he has suffered pain.

Examination: Sensitiveness over the scaphoid, anteriorly and posteriorly. Swelling. Fingers free. All motions of wrist painful at extremes. The *x*-ray shows crack in scaphoid.

Treatment: Plaster-of-Paris, slit up.

February 1, 1908. Visiting nurse reports that patient had plaster on for three or four weeks, and then had it taken off at Harlem Hospital. Since then he has had no trouble whatever, and is at work.

Case VII.—P. F., aged 48, dockman, December 20, 1907. Fracture of the right carpal scaphoid. Patient fell off a ladder yesterday and struck on his right hand in the extended position. Pain and disability have been present ever since.

Examination: Tenderness over the scaphoid. Flexion and extension painful and limited. The *x*-ray shows fracture.

Treatment: Strapping.

January 31, 1908. Wrist is not swollen or deformed, but it is still somewhat painful. Patient has worked ever since injury.

Case VIII.—M. G., aged 18, August 31, 1907. Fracture of the left carpal scaphoid. Patient fell on the superflexed hand two days ago, and injured his left wrist.

Examination: Swelling and sensitiveness present over the scaphoid. All motions of the wrist painful. Fingers free. An *x*-ray picture was presumably taken, but no further record appears on the history, and the patient cannot be traced.

Fig. 4.—Case V, left side.

Case IX.—W. G. B., aged 54, driver, September 24, 1907. Fracture of the left carpal scaphoid. Five days ago the patient fell off a wagon and injured his left wrist. The hand was presumably in superextension. Treated for sprain.

Examination: Ecchymosis on front of the left wrist. Tenderness about the scaphoid. Motions in the wrist painful at extremes, but not much limited. No note appears as to what the *x*-ray revealed.

February, 1908. The wrist was put up in plaster-of-Paris. The patient did not return, but his wife says that he removed the dressing himself after a few days. Since then he has had pain in his wrist and has suffered some disability.

From these cases and from many others seen elsewhere, the following conclusions are arbitrarily drawn.

1. Fracture of the scaphoid is comparatively frequent, and is often mistaken for sprain of the wrist.
2. It often escapes detection and recovers without any treatment.
3. It is usually caused by a fall on the extended hand. It may be caused by punching with the clenched fist, or rarely by superflexion of the hand.
4. The one important symptom is tenderness over the scaphoid on the dorsum of the wrist in the "tabatière," or slightly internal to this spot. All the other classic symptoms of a fracture may be absent, except pain on motion.
5. If the fracture be accompanied by a dislocation of the semilunar, extension of the fingers, especially of the middle finger, will be limited and painful, and the disabiilty will be much greater.
6. The prognosis of simple uncomplicated fracture of the scaphoid is good; that of fracture with dislocation is less favorable.
7. A good treatment of simple fracture is immediate immobilization.
8. If the semilunar is dislocated, a piece of the scaphoid often goes with it.
9. If a dislocation is present, the dislocated bone must be replaced. If this is not possible, then it should be removed.
10. Roughly speaking, sensitiveness over the scaphoid, with a history of a fall on the extended hand, without much disability or swelling means simple fracture. If great swelling and disability are present, and the middle finger is held in rigid flexion, a dislocation accompanies the fracture.

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THE PULSE OF THE NERVOUS SYSTEM.

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Since the time Harvey discovered the circulation of the blood, the radial or other arteries have been the key to the circulatory system. The phosphates in the urine, although not discovered by so distinguished a man, and though their importance as an aid to diagnosis is but briefly referred to in text books, to the writer's mind, deserve the above title, "The Pulse of the Nervous System."

In considering the subject it must be understood that phosphates appearing in freshly passed urine, or phosphatic crystals found in the same, are not referred to; also that the earthy phosphates, although of importance, are in such small quantities that their presence will be but briefly noted. On the other hand the phosphates under consideration are known as the alkaline phosphates and are only precipitated by an alkaline solution.

The average quantity of phosphoric acid secreted by the kidneys in a normal state is 3.8 gms., which varies greatly in ordinary healthy individuals. They may be very low, and on the other hand they may be doubled or even quadrupled in the urine and yet no pathological condition be present. Phosphoric acid occurs in the urine in combination with the alkaline earths—earthy phosphates in the form of calcium and magnesium, insoluble in water, but soluble in acids.

The alkaline phosphates occur as acid sodium phosphate and potassium phosphate, soluble in water and in alkaline fluids. Turbidity of freshly passed urine due to phosphates, and the same occurring on boiling is always due to earthly phosphates, and when seen with the microscope the precipitate looks like microscopical sawdust, if such a term may be used. They never appear as crystals unless the acid magnesium phosphate is acted upon by ammonium when ammonio-magnesium phosphate crystals form, fern-leaf in shape, or after long standing the coffin-lid shape may also appear.

The phosphates in the system are derived from

the food, and their appearance in the urine is influenced greatly by the various articles of diet and also by certain drugs. Thus, there is a marked increase of phosphates on an animal diet, and such drugs as phosphorus, strychnine, and lecithin (which should be considered a food) increase them greatly, provided assimilation is perfect.

The amount of phosphates depends greatly upon the decomposition of nuclein and lecithin. Foster's Dictionary says "Lecithin is a class of bodies found in the brain, nerves, amniotic fluid, yolk of eggs, bile, spermatozoa, and certain vegetable substances."

Nuclein is a complex body found in the yolk of eggs and is present in all cell nuclei. More recent studies show that lecithin should be considered a food rather than a drug. It is a highly complex fat containing a nitrogenous substance in which phosphorus is present in organic combination. It is a constituent of every cell, its universality showing its indispensability to life. This being true it must at once appear that both are derivatives of one of the most important structures of the body, viz., the nervo-vital cells. Therefore there can be no argument other than that irritation of the nervous system will increase the output of lecithin and nuclein in the form of phosphates in the urine, providing these substances are there to be decomposed.

On the other hand, where there is no surplus of nuclein and lecithin, no matter how great the irritation, phosphates are always diminished. Textbooks tell us that elimination of phosphates is influenced by the food, by the time of day, and by certain diseases. To a great extent this is true, but when it is recalled what an important part the nervous system plays in all diseased conditions is it not fair to assume that the rise and fall in the phosphates are not due to any disease *per se*, but to influences exerted on the nervous system?

Furthermore we are all aware what position the nervous system takes in disease, how the calm and robust withstand disease, infections, etc., and rapidly recover, whereas it is exactly the reverse in the delicate and especially in the markedly neurotic.

In fact, in the writer's opinion the state of the nervous system as indicated by the phosphates in the urine is the keynote to all diagnosis, prognosis, and treatment. Facts must not be lost sight of that the nervous system controls every organ, every function, every tissue in the human economy. With such truths staring one in the face is it not true that impoverished vital cells, robbed of their force, can delay resolution, or on the other hand a perfectly normal cell impart tone to every tissue? But a step further: is it not as uncomfortable to be too warm as too cold? Suppose assimilation to be practically normal and each cell getting its proper amount of nuclein and lecithin, yet the urine shows that more phosphates are being eliminated than should be.

Certainly one thing is evident; a reserve force is being drawn upon. This increased decomposition shows but one thing, an abnormal destruction, and it will be found to be accompanied by the exaggeration of every symptom of the existing disease. All physicians know what nervous excitability means in the treatment of disease, and the continual overdraw means depletion of nerve force. A nerve cell deprived of its normal reserve force will manifest itself in the production of general systemic depression sooner or later, and such a condition we usually find following trivial complaints. Leaving aside true or organic conditions, let us consider what may be termed false or functional, or those where there is no pathological change, but which if allowed to run may lead to organic changes.

A functional condition is one where there is a deviation from the normal state, the cause of which is both direct and indirect, yet no pathological condition may exist.

The "direct" cause is removable by drugs, advice, etc., and the "indirect" is the nervous influence easily and quickly discoverable, the removal of which may postpone the development of a pathological condition. We are aware that the control of the blood-vessels is entirely through the vasomotor nervous system.

We know that inflammation is due to bacterial infection, that bacteria to grow and flourish must have a proper soil, and this we find in long-continued congestion. But from another standpoint there appears another directly opposite state of affairs: if tone cannot be conveyed to the chronically congested or inflamed parts on account of a lack of nerve force, the condition must remain stationary.

That lecithin and nuclein exist in the cells, in reserve, is plainly shown when a person in a state of pronounced nervous excitement for days or weeks does not take food to speak of, yet the phosphates in the urine are greatly increased. Let this condition continue for some time and it will be found that the phosphates are decreased far below the normal. Although there may be no anemia or organic condition present, systemic prostration varies to a degree where that person may have to take to his bed. Proof that the phosphates are derivatives of the nervo-vital cells is shown when the cause is removed or sedatives given. Almost immediately the heavy withdrawal is checked as is shown by the urine. For clinical purposes only an average approximate estimation of the phosphates need be considered. Accuracy is impossible in any case, for each one must be considered a law unto himself." For a person in apparent health there may be a very small amount found in the urine, whereas, in another in the same condition of health, from the viewpoint of external evidences, there may be four times what may be considered normal. Certainly where the phosphates vary so greatly there must be some cause, this being found in the state of the nervous system and discoverable in a very few minutes by an examination of the urine.

In a great number of specially selected cases where there was perfect tranquillity and no pathological condition, and examination of the urine showed a practically normal specific gravity, reaction, amount, total solids, etc., the writer would suggest the following as a practically normal phosphatic elimination, the earthy salts being included: Using a test tube holding about 30 c.c., 20 c.c. of urine is placed therein and 8 c.c. of Tyson's alkaline solution added.

The mixture should change to a milky character at once, varying in degree of density according to the amount of phosphates present, also according to the condition of the surroundings; for instance, more quickly when warm than when cold. The test tube should be placed to one side for ten minutes. The phosphates will sink rapidly according to their specific gravity compared with that of the fluid. That is, if they be normal and well formed they sink rapidly, whereas, if small, light, and immature, they fall very slowly, even at times remaining almost stationary, giving a general turbidity throughout the whole fluid. But in the majority of cases, if normal, in about ten minutes they will sink to the bottom, occupying a space that can be filled by 3 c.c. of fluid. The size and weight are important factors to be considered. At times they fall to what may be considered a normal index, but in appear-

ance the sediment is fluffy, light in color, and easily movable upon agitation. When normal or in excess, they settle like fine sand, heavy, and agitation does not disturb them much. In the former condition they must be considered deficient, even though they reach the normal index.

Phosphates precipitated by Tyson's solution appear fern-shaped, but the crystals vary as to size. The usual normal size is about five-eighths of an inch in diameter, but according to the condition of the nervous system they may be only one-eighth of an inch relatively when viewed with ½-inch objective. The size of the crystals is quite important as to proof of the amount, also the condition present. In cases where they are greatly increased, as where nervous excitement is high and the condition is in its incipiency, they may appear very small on account of the rapidity with which they are formed. Also, when they are small in amount from long-continued drain on the residual nuclein and lecithin, and when being precipitated practically from the food, they are small. This can easily be proven by watching a case. Watch them grow from infancy to manhood. In other words, take a case as above, remove the exciting cause, feed the patient on food and drugs rich in phosphorus and lecithin. Weekly examinations will not only show an increase in size, but an improvement in the condition of the patient.

Clinical Importance of the Pulse of the Nervous System.—As the radial or other convenient artery tells the condition of the circulatory system, so the phosphates in the urine tell us the condition of the nervous system. They go further than the pulse, acting as a barometer, for they tell of the past and foretell the future. The coming storm may be prognosticated and combated before it breaks in all its fury. Although there may be no external evidences, a large increase in phosphates means nerve and especially central irritation. No matter how or when this condition develops, if it continues, sooner or later the reserve will be exhausted and we shall find a neurasthenic with all the ills from which such patients suffer.

In the same way, by the phosphatic index, pathological conditions may be assisted to a marked degree. No one will deny the pronounced influences that a highly nervous state exerts upon a sick individual, although there may be no external evidences of the irritation of the nervous system. In others, resolution is slow or becomes stationary. The phosphates in both cases tell what influences the nervous system is having on the condition, first, by great excess, and later by a diminished amount.

Medication in nervous cases should be carried on only as the phosphates indicate, after the physician has learned to regard each patient as a law unto himself. Cases of lassitude almost bordering on prostration may call for sedatives rather than stimulation. Pain may be the nerves crying for food, and in many of the indefinite conditions treated for rheumatism it will be found that the above is the true cause and that where salicylates, etc., had no effect, drugs and food rich in nuclein and lecithin will at once relieve. In cases in which from over-irritation the nerves are crying with pain, drugs of an opposite nature will at times give the desired result. In conditions especially where there is prolonged illness, an estimation of the phosphates should be made every few days, for when a marked withdrawal of the surplus is shown the checking of this will often to a very great extent obviate the prolonged convalescence.

Conclusions.—Much of the suffering of to-day is due to an imperfect adjustment of the mental balance wheel.

Taking the phosphatic index is as important as taking the pulse rate, if not more so, and far more important than other procedures to which much time is given.

Bedside examinations can be made in ten minutes, using preferably the urine secreted between eight and twelve o'clock in the morning.

In disease of the nervous system which cannot be accounted for, and in the case of indefinite pains, the phosphatic index should be the guide for medication.

When a positive cause has been removed and the phosphates do not rise under appropriate food and drugs, one should look to the assimilation; it may be faulty.

Pregnancy, the third week after conception, and up to the third month, is positively shown by the condition of the fern-shaped leaves. If present, a goodly number are found stripped of their feathers; otherwise they are almost perfect.

Remember that the nervous system controls the whole economy, in health or disease, and if the cells are unduly excited, or rendered almost useless by heavy withdrawal of their reserve, conditions may be aggravated or cease to improve as the case may be.

43 West Tupper Street.

SOME CONSIDERATIONS IN THE MANAGEMENT OF BURNS AND SCALDS IN INFANTS AND CHILDREN.

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There are perhaps no cases more important, or which demand greater skill on the part of the attendant, than those of severe burns and scalds occurring in infants and young children. Many lives are menaced, nay even sacrificed, in addition to the numbers who grow up permanently deformed by a neglect of the minute details of management. These bad results, which are in many cases due to perfunctory treatment, are especially noticeable to one who has been engaged in extensive hospital and dispensary practice, where many cases finally drift to see if anything can be done to render less unsightly the ultimate deformities or disfiguring cicatrices. At this late date little or nothing can be done, the treatment must be preventive by proper management at the time of and immediately following the receipt of the injury.

Cheever of Harvard states that about three-fourths of all burns and scalds occur in children, and, when one considers the greater risk which they run, it would seem to be a fair proportion.

In considering this subject it is well to bear in mind, that the prognosis of burns and scalds in infants and young children is relatively much more severe than in adults. It is generally known that mere reddening of more than two-thirds of the body from this cause, or a burn or scald of the second or third degree involving one-third or more of the surface will usually produce death in the adult, while relatively less extensive burns or scalds in infants will at times lead to a fatal result. Infants and children are more apt to succumb to shock, and later, after reaction has set in, congestion of internal organs from vasomotor paresis may cause serious consequences.

Shock, according to Bryant, kills more than one-

half of the fatal cases. Infants, young children, and those in whom the senile degenerations are well marked, suffer more severely from this condition. Many deaths may be the direct result of fright, pain, or paralysis of the heart. Sonnenburg and others state that overstimulation of the superficial sensory nerves may produce death by reflex cardiac paralysis, and Crile in a recent lecture before the Harvey Society accentuated the great importance of this as a factor in the production of shock. From this we can readily see the necessity of doing everything in our power, both psychically and with an intelligent use of drugs and the physical means at our command, to allay fright and lessen these afferent sensory impulses. It is well to remember that shock may not fully develop in these cases until forty-eight hours after the receipt of the injury.

It is generally understood that the internal organs have an undue strain placed on them, owing to their being called on to do part of the work of the injured or destroyed skin. This is particularly so in regard to the kidneys, which often become extremely congested, the congestion leading, if prolonged, to serious consequences. An acute nephritis, or later even amyloid changes may result. In many cases we find an albuminuria, and at times a hematuria, and often where there is a high temperature both these conditions rapidly supervene. Ponfick first called attention to yellowish-brown casts in the urine and kidneys of these patients, which are caused by the presence of broken down red blood cells. The urine of those dying during suppuration contains certain abnormal end products from the body proteids; a series of bases of the pyridin type, cystin or a substance closely allied to it, and other proteid derivatives.

Several theories have been advanced to account for the stasis of the internal organs. Perhaps one which should be given much weight is that of Max Schultze, that the conversion of the red corpuscles into small globules after their destruction is the chief cause of this pathological condition. It is during the stage of reaction lasting from one to two weeks or longer, during which time there is usually an elevation of temperature, that internal congestions occur, which latter, if long continued, run on to inflammation or degeneration. In infants and young children also all the structures, the brain, lungs, heart, blood-vessels, etc., are more easily affected than in the adult. Convulsions are more common and may lead to death. In some cases at necropsy an engorgement of the vena cava and right heart has been found.

In children also the heat seems to have a more severe action on the blood corpuscles, the destructive changes being more marked. This is not strange when we consider the thinner skins of the corpuscles in early life. This destruction of the red blood cells has a very pronounced effect on respiration and metabolism, and, in addition to the great irritation of the nervous system, is a potent factor in the production of shock. This destructive change in the blood often leads to thrombus formation in the vessels.

The loss of body heat is a serious factor, and must be carefully guarded against by every means at our command. A sudden marked fall in temperature is serious, and later during the stage of reaction is of grave prognostic omen. Vomiting coming on shortly after the receipt of the injury is a bad sign.

Among the later and less frequent sources of danger are exhaustion from prolonged suppuration or other causes, erysipelas, pyemia, tetanus, or any intercurrent affection tending to lower the vitality which is already taxed to its utmost. In burns about the neck or throat edema of the glottis is not an infrequent complication. Perforation of the intestine as a result of a duodenal ulcer is not so frequent as generally supposed; although most textbooks seem to lay stress on this condition, it may be said on the strength of several series of autopsies by a number of careful observers, that this complication is very infrequent. Ulcers have been encountered elsewhere in the intestinal tract in a number of cases, but their direct connection with the injury is hard to prove.

Of all the regions of the body extensive burns or scalds of the abdominal or anterior thoracic regions present the most serious outlook. This is probably owing to their greater proximity to the vital organs, and the thinner parietal wall.

In giving a prognosis we must consider from what intense burns a child may recover. I have seen many remarkable recoveries; in many of the worst cases there in hope. To show what may be survived, I will refer to a case reported by W. W. Keen in the *Annals of Surgery*, May, 1907, in which an infant seven months old lay with its head on live coals in an open fireplace for a period of from twenty to thirty minutes, where the result was a necrosis of the entire osseous cap of the cranium. The ultimate result was epilepsy partially relieved by an operation for the relief of pressure from the contraction of tissues.

Before passing I would like to say a few words in regard to burns from electricity, which are becoming more and more frequent. Shortly after the injury the affected area becomes covered with a brownish eschar, and owing to some as yet fully undetermined pathological change these burns heal more slowly. The requisite strength of current to cause death in children is somewhere between five hundred and fifteen hundred volts. Death is the direct result of paralysis of respiration or of heart action. The constitutional symptoms are usually less marked in burns from this cause, and the pain is often not so severe. At the line of contact the skin is black, but the surrounding skin is dry and pale. The trophic disturbances are more marked; hence the reason for the more frequent and more extensive sloughing. The extent of these injuries is often misleading on first inspection owing to the fact that much damage may be done beneath the skin.

In lightning stroke, along the course taken we find various markings from burns of variable intensity, and these at times may assume fantastic shapes. There is more destruction of tissue at the points of entrance and exit. These markings are due to hyperemia and ecchymosis.

It is not the object of this article to enter into a full line of treatment that these injuries should receive, but merely to state a few of the essentials embodying some of the procedures which have furnished the author the best results. The one thing of paramount importance is to see that everything coming in contact with the wound is sterile; hands of the surgeon (gloved or otherwise), instruments, dressings, etc. The wound must be carefully freed from all foreign substance, dirt, clothing, discharge, blood, etc., vesications being carefully drained, as their content, serum plus fibrin ferment, on coagulating forms a good culture bed for the development of pathogenic bacteria. The formation of this fibrin ferment may determine an early rise of temperature before the period of sepsis if the latter should supervene. The wound must be care-

fully irrigated with an antiseptic solution and after using many different antiseptics I have found that of all aqua hydrogenii dioxidi is the most reliable. This seems to possess more of the requisite properties. It is a powerful oxidizant of organic matters, and an active coagulant of albumin. Pus is rapidly destroyed, the corpuscles being broken into detritus, and the solution comes into direct contact with the bacteria which it rapidly destroys. It is also slightly styptic, which renders it doubly serviceable where there is oozing from the surface. This antiseptic, however, is not suitable for prolonged application. I use a warm aqueous solution in a strength varying from 1 to 6 to 1 to 10, and after irrigating the wound thoroughly with this, I follow it up with an irrigation of warm normal saline solution or a 3 per cent. solution of boric acid. Boric acid solution alone I do not rely on, as it is inefficient as a germ destroyer, but it has considerable antiseptic power. Careful experiments of Sternberg (*American Journal of the Medical Sciences*, LXXXIV, 321), and E. Andrews (*Chicago Medical Examiner*, 1889, LVIII), have thrown much light on the effects of boric acid and its solutions on bacteria.

The next important factor in local treatment is protection of the wounded surface. Where the injury only involves the epidermis, the derma not being affected, after employing the antiseptic and irrigating solution, I often use a very thin ointment made fresh at the bedside with a pure sterile English oxide of zinc powder and pure olive oil rendered sterile by boiling, which can be made in any thickness desired, care being taken to have it perfectly smooth. To this may be added, if desired, 3 per cent. of boric acid. This spread in a thin even layer on folded gauze minimizes irritation, which, if pronounced, would injure the deeper layers of the skin. This dressing changed frequently in conjunction with the antiseptic irrigations is often all that is required in these superficial burns or scalds, and they heal rapidly. As a general rule burns and scalds involving the papillary layer do best when protected by means of rubber tissue or silver foil, placed in overlapping strips ½ to 1 inch wide, thus allowing the escape of discharge from the wound, and its being immediately taken up by the overlying layers of gauze, which latter in no part comes in contact with the wound surface.

The delicate structures of the newly forming skin or the developing granulation tissue easily suffer from the contact of dressings, and therefore the importance of using some nonadherent nonirritating material can be readily understood. During the process of repair the dead tissue is thrown off from the living by the formation of a dry slough; the ideal healing taking place when the slough is aseptic. Owing to the fact that, at the time of the injury bacteria are not only present on the surface where the antiseptic easily reaches them, but also often in the deeper layers of the skin, where it is difficult or impossible for the solutions to penetrate, the great difficulty and at times impossibility of maintaining an aseptic condition is apparent. We must keep in mind, that other things being equal, the more exuberant the granulations the denser the scar tissue resulting. Solutions of nitrate of silver applied to restricted areas and used with care and judgment are valuable here. Besides the deformities, contractions, etc, resulting from dense scar tissue, particularly if this tissue is poorly nourished, there may result at a subsequent period ulceration, or in rare cases even a keloid or epithelioma. Ulceration as a sequence is more apt to occur in children who are syphilitic or tuberculous.

I desire to accentuate the great importance of constitutional treatment in these cases. Great vigilance, foresight, and judgment are often required to bring the little patients through the periods of shock, reaction, and exhaustion, if the latter supervenes. They must be placed in a well-warmed though thoroughly ventilated room, carefully avoiding all draughts. Pain if at all severe, as it is in most cases, is to be controlled with some preparation of opium, and an intelligent use of this drug will be found greatly to lessen shock, and therefore will increase the chances of the patient. In infants and young children the preparation on which I mostly rely is the camphorated tincture, in doses of 1 to 15 minims, repeated at short intervals until quieted. In those cases, however, where it is difficult to get the patient to take anything by the mouth, or where the stomach is intolerant, I give minute doses of the sulphate of morphine, gr. 1-100 to gr. 1-20, repeated as required. The extremities should be kept warm, and all undue exposure of the body surface avoided. I have found that in many cases where shock is pronounced the continuous irrigation of the colon with a hot decinormal saline through a double flow rectal tube or large catheter is of great service, not only in raising the blood pressure, but in replacing the body heat lost from the denuded surface. Medicinal stimulants may be valuable, but their use during the early stages is secondary to the foregoing measures. When stimulants are given it is often best to administer them hypodermically.

During the stage of reaction we must carefully watch the emunctories, especially the kidneys, and any abnormal conditions should be promptly met by appropriate treatment. All irritability of the stomach should be carefully avoided. Vomiting coming on seems to be best met by combining a small dose of atropine with opium. We shall find that the patients do best by greatly restricting the amount of food during the first hours or days, the action of the stomach and intestines being carefully observed as we strengthen the formula or extend the dietary. Later, when the patient needs every supporting measure, and the stomach and intestines are tolerant, a liberal supporting diet is indicated. For making the patient more comfortable the Hebra water bed or one of its modifications is often of service.

1 West Sixty-eighth Street.

A REPORT OF FIFTY CASES TESTED BY THE CALMETTE OPHTHALMO-REACTION TEST FOR TUBERCULOSIS.

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The test as recommended by the originator, Calmette of Lille, is made by instilling into the conjunctival sac of the patient one drop of a one per cent. solution of Koch's old tuberculin. In patients affected with tuberculosis in any part of the body a reaction occurs in from three hours to three days. This may be only a slight irritation of the palpebral conjunctiva, with congestion of the caruncle and some complaint by the patient of a feeling of sand or grit in the eye, or may develop into a pronounced conjunctivitis with swelling and redness of the entire conjunctiva, edema, and discharge, as is seen

in well-marked cases of "pink eye." The reaction is not, apparently, connected with the stage or extent of the disease present. The most marked reaction observed was in a case in which sputum examinations have remained negative and no signs of a positive kind are obtainable on repeated examination of the patient. The tuberculin was used experimentally and a marked reaction followed. This with a one per cent. strength,—the one-half per cent. first employed having shown no reaction. On the other hand in a case in the late stage of the disease—that of a young man of 22 years with advanced lesions in both lungs, in the larynx, and in the pharynx—no reaction was obtained with three different instillations. The first test was made with the one-half per cent. strength, and, no reaction following, two more tests were made with the product of two different laboratories. Absolutely no reaction occurred.

In making the tests a preliminary series of six cases was tried with a one-half per cent. solution instead of the one per cent. advised by Calmette. This gave the reaction in four cases but failed in the other two in one of which a subsequent use of the stronger solution gave a positive reaction. It would seem, therefore, that the solution as advised by Calmette is more likely to be satisfactory.

In none of the fifty cases examined were there any unpleasant symptoms. Proper precautions should, of course, be taken in the use of this agent and in seeing that eyes unsuitable for testing purposes are left alone. So far as the writer has observed no undue excitement has been reported as following its use in any eye with which such precaution was taken, and the reports made so far include several thousand cases. The drop is put into the lower conjunctival sac, the lower lid being drawn out for the purpose and held for a brief time afterwards to prevent the material being perhaps too rapidly passed down the tear ducts. The agent is supplied in tablet form which is easily prepared for use by dissolving one tablet in fifteen drops of boiled water. If only an occasional test is to be made the pipettes, each containing a drop of the solution ready for use, would seem preferable. Care should be taken to avoid the possibility of getting a spicule of glass from the freshly-broken end of the pipette into the conjunctival sac if this plan is followed. I found the pipette a more troublesome plan, but on the whole a more reliable test than the tablets. The solution is put into one eye only, leaving the fellow eye as a control by which the less marked changes in the eye under observation may to some extent be adjudged.

Conclusions. 1.—The test seems to be a fairly reliable one; well worthy of wide and repeated trial at least.

2.—In some advanced cases no reaction will occur—a matter of little moment if the test proves reliable in early cases, whatever the reason for this peculiarity may be.

3.—Some allowance should be made for possible faults in the tuberculin as furnished at present. From the observations made on these cases I should regard the ophthalmo-reaction as good evidence of the presence of tuberculosis. In one of the cases a diagnosis made in this way was afterward confirmed by finding the baccilli in the sputum.

My thanks are due to the staffs of Fordham and of Lincoln Hospitals for their kind courtesy in furnishing me opportunities to make these tests and for much help in observing and recording the results.

A synopsis of the cases is as follows:

1. C. S. Man æt. 29. Possibility of tuberculosis in chest. No positive signs obtainable. Sputum negative. No reaction with one-half per cent. strength. Positive reaction at the end of twenty-four hours with one per cent. Lasted four days.

2. L. M. Man æt. 22. Advanced disease in lungs, larynx, and pharynx. No reaction, although three separate tests were made at intervals of four days.

3. N. G. Man æt. 23. Acute pneumonia, recovering. Has an evening rise of temperature to 103°. Positive reaction in three hours. Tubercle bacilli found in sputum afterwards.

4. W. H. Man æt. 39. Recovering from acute lobar pneumonia, right side. No reaction.

5. D. N. Man æt. 39. Alcoholic case with possible tuberculosis. No positive signs. No reaction.

6. P. M. Man æt. 54. Sputum positive; physical signs positive on the left side; an early stage. Marked, positive reaction in three hours. Lasted three days.

7. R. H. Girl æt. 18. Acute lobar pneumonia, beginning. No reaction.

8. A. O'C. Woman æt. 60. Suspected tuberculosis. Râles over both lungs. Marked reaction in three hours.

9. P. McD. Woman æt. 39. Both lungs involved; late stage; sputum full of bacilli. Positive reaction in three hours with a one-half per cent. strength; later a more marked reaction with one per cent. solution.

10. M. M. Woman æt. 21. Late stage. Both lungs far gone. Similar results as in the preceding case.

11. L. B. Woman æt. 31. Acute secondary syphilis. No suspicion of tuberculosis. No reaction.

12. M. D. Woman æt. 42. Chronic articular rheumatism. Negative.

13. W. B. Woman æt. 20. Cured case of pneumonia, left side. Negative.

14. P. G. Man æt. 40. Positive signs in lungs. Sputum positive. Positive reaction, but not until thirty-six hours after instillation.

15. M. M. Woman æt. 21. Recovering from pneumonia and pleurisy, left side. No reaction.

Cases 16 to 20 were in children from ten to twenty years of age, of a father who has recently died from phthisis after a long illness, the children living in the same home. All proved negative to this test.

21. C. E. Girl æt. 21. Hypertrophic rhinitis; persistent cough; good physique. No reaction.

22. P. P. Man æt. 32. Sputum positive; physical signs positive; early case. Positive reaction in three hours.

23. J. O'M. Man æt. 35. Sputum negative; suspected tuberculosis. Reaction positive.

24. Mother of the children in cases 16 to 20. Negative.

25. G. R. Man æt. 25. Suspected tuberculosis. Positive reaction twenty hours after instillation.

26. R. H. Man æt. 24. Case of tuberculous peritonitis. Abdomen opened by surgeon. Positive reaction after eight hours.

27. J. V. Man æt. 22. Tuberculosis of the hip. Positive reaction in six hours.

28. D. H. Man æt. 22. Right apex diseased, and there is an ischiorectal abscess. Reaction positive.

29. A. C. Negress æt. 28. Both apices involved. Reaction absent.

30. L. H. Negress æt. 22. Suspected case of tuberculous peritonitis. No reaction.

31. C. H. Aet 28. Pott's disease, with sinuses. Reaction absent.

32. M. S. Aet. 20. Glands enlarged in neck. Reaction after twelve hours.

33. S. A. Woman æt. 27. No reaction.

34. H. R. Woman æt. 28. Lues; active, tertiary lesions. Negative.

35. N. B. Æt. 24. Pulmonary tuberculosis; early; sputum positive. Reaction positive in eighteen hours.

36. C. F. Girl æt. 17. No suspicion of tuberculosis. No reaction.

37. E. R. Negro æt. 37. No definite diagnosis; suspected spinal trouble. No reaction.

38. S. L. Woman æt. 29. Tuberculous laryngitis; sputum positive. Reaction positive after eighteen hours.

39. G. S. Woman æt. 80. Bronchitis. No reaction.

40. C. A. Æt. 49. Malignant disease. No reaction.

41. W. H. Man æt. 25. Undoubted case of tuberculosis of the lungs and larynx. Positive reaction in four hours.

42. P. P. Man æt. 41. Advanced case of pulmonary tuberculosis; sputum positive. Reaction marked in three hours, lasting three days.

43. B. P. Full blooded negro æt. 49. Sputum positive; clinical signs positive; advanced case of pulmonary disease. Reaction positive after twenty-four hours.

44. J. T. Man æt. 26. Paraplegia, psoriasis; sputum negative. Reaction positive, eighteen hours.

45. S. S. Woman æt. 81. Very stout woman; fatty heart. Reaction negative.

46. M. M. Girl æt. 22. Suspected pulmonary tuberculosis. Reaction negative.

47. J. H. Laryngeal ulceration; syphilitic history. Reaction negative.

48, 49 and 50. Healthy adults. No reaction.

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SUCCESS AND FAILURE IN NAUHEIM CURES.

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Although Nauheim owes its present popularity in no small measure to a generally increased prevalence of heart affections, there can be little doubt that its widespread reputation is essentially attributable to the intrinsic merits of its waters, and to the balneological methods which have been evolved by observation and experience.

The three springs which in Nauheim are available for bathing contain from 2.5 to 3.5 per cent., approximately, of the chlorides of sodium, lithium, and calcium, besides some iron, and a considerable amount of free carbonic acid gas. Moreover, the natural temperatures are just about suitable for bathing, without any or much alteration.

The physiological action of these springs is supposed to be as follows: The carbonic acid and the salts cause the capillaries of the skin to dilate and stimulate the cutaneous sensory nerves. These convey the stimulus to the nerve centers, thus stimulating by reflex the vagi and the vasomotor nerves. The result naturally is increase of vasomotor tone and regulation of the heart's action. Now if the bath be cooler than the body temperature there is initial contraction of the superficial capillaries with subsequent dilatation. This latter is called "reaction." The irritative action of the chemical ingredients of the water counteracts the capillary contraction and increases the subsequent dilatation. The contraction means a short increase of resistance, thereby stimulating the heart to a more powerful effort. Reaction on the other hand lessens resistance, and relieves the heart. Thus the mineral baths strengthen the heart and lessen its work at the same time, this latter by reducing resistance.

The therapeutic action which is the rule, is the following: The pulse generally is somewhat slowed, blood pressure as a rule rises in cases of originally low pressure, and falls in the reverse cases. Thus a somewhat curious, though very fortunate, action is manifested, viz., a regulating one. In a course of baths, therefore, in suitable cases, the result is reestablishment of compensation.

Exercises and massage, which are used, too, act similarly as they also reduce resistance and stimulate the heart, the former by the freer flow of blood in the contracting muscle, and the latter because the freer reflux of venous blood to the heart together with a stimulation of the sensory nerve terminations, which invariably accompanies that of the motor nerves, bring about more vigorous contractions of the ventricles.

Electric baths with the faradic and sinusoidal currents are of late also occasionally employed in Nauheim. Careful experiments and observation have convinced me that they have important physiological and therapeutic actions on the circulation, which are similar to those of the mineral baths, though not quite identical. Besides these, various other curative agents are occasionally employed in Nauheim, of which, however, only the mineral drinking springs call for special notice. Four of them are available, their principal ingredients being chloride of sodium and carbonic acid. They are supposed to have a beneficial influence on the intestinal and respiratory tracts.

All the agents mentioned have, besides the curative properties already dealt with, that of accelerating metabolism, a most important thing in circulatory disorders.

Success in Nauheim treatment depends less upon the kind of heart lesion than upon the stage of it. The indications in this respect are initial and medium stages of various cardiac affections. Moreover it is essential that the patient should observe during the entire time of his bath treatment certain regulations as to his whole way of living which have been evolved empirically during long years of experience by the medical profession.

Failure, therefore, is, generally speaking, as a rule due (1) to the selection of unsuitable cases (advanced stages), and (2) to injudicious behavior on the part of the patient. And yet there is a minority of cases in which success remains absent without any apparent reason—but such is the case in therapeutics generally. On the other hand it must be borne in mind that the benefit of the baths not infrequently manifests itself some time after the conclusion of the treatment—a curious but certain fact.

In the above I have only referred to cardiac lesions as they constitute the great majority of all cases that come to Nauheim for treatment. Suffice it, therefore, to add that a variety of other complaints can be favorably affected by the curative agents in vogue here, viz., neurasthenia and other nervous disorders, diseases of the female generative organs, scrofula, rickets, bronchitis, and gastric and intestinal affections.

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THE PROCESSES OF COMPENSATION AND ADAPTATION IN DISEASE.

SPEAKING before the Harvey Society last year, Dr. S. J. Meltzer discussed the "factors of safety" with which the animal organism is provided in order that the varying stresses and exigencies of its existence may be met without a resulting strain upon the organs and tissues. He showed the liberality with which the organism has been treated in this respect, every organ and tissue possessing an abundance as well of structural elements to carry on its work, as of material to be acted upon in the production of energy, which, in this case, takes the form of the phenomena of life. In an article published in Volkmann's *Sammlung klinischer Vorträge* (No. 470) Professor D. Gerhardt of Basel considers an analogous subject, the processes, namely, of compensation and adaptation that appear in disease.

Whenever and wherever a lesion takes place these two factors become evident, sometimes directed by and dependent upon the exercise of the will, as when the left hand takes up the usual duties of the right, which may be injured or lost; oftener, however, quite independent of all voluntary effort, but simply in answer to the newly apparent demands upon the organs involved. In the circulatory system hypertrophy of the heart takes place as soon as the valvular apparatus is so deranged as to interfere with the normal work of the heart; such hypertrophy occurs even in the presence of a disease leading to malnutrition and to wasting of the other muscular organs. On the destruction of blood-vessels supplying a certain region collateral circulation quickly appears, actively diminishing, and often completely making up for the anemia caused by the injury or disease. Still more responsive and exact are the wonderful provisions which regulate the pressure of the blood in the vessels. With almost every change in the condition of the body new influences appear that tend to affect the local or general blood-pressure, yet the normal physiological compensation prevents any sudden or marked changes. In pathological states these regulatory provisions are tested still more rigorously, yet this only proves the high degree of competency possessed by them. Great increase in the volume of the blood, caused by therapeutic infusion; great diminution of it, due to hemorrhage; decrease in the area of blood-vessels caused by thrombosis of an important vessel, or the amputation of a limb; inflammatory changes in the circulation of a part characterized by congestion or hyperemia—all these may take place without any prolonged effect upon the general blood-pressure.

Similar phenomena are observed in the diseases of the kidneys. Recent work, for instance, has shown that even the retention of water in the body, which forms one of the most serious symptoms of some kidney lesions, is a compensatory process. The injured organ is unable to excrete the usual amount of salts, and the latter accumulate in the body fluids endangering the processes of tissue metabolism. The retention of water serves to diminish or to obviate this serious danger to the organism. The polyuria of the sclerotic kidney or of diabetes insipidus depend probably upon a like effort at adaptation to changed conditions. The diseased kidney is unable to handle the waste fluids of the body in their usual concentration, and the increase of fluid assists it in its task. Like changes of adaptation and compensation in answer to the new conditions brought about by disease are traced by the author in considering the nervous system, the alimentary apparatus, and the muscles of the body, and, indeed, these phenomena are open to the observation of every physician who tries to account for the manifestations of disease. In the article on "Darwinism and Diabetes" in the current issue of the MEDICAL RECORD, Dr. Eccles argues with much force in support of his belief that the sugar formation in diabetes mellitus also is a protective process.

Much more difficult, however, than such recognition is the attempt at explanation of the processes observed. Are they merely the changes conditioned by altered mechanical relations of the component parts of the body, or are they the result of purposeful provisions of the organism designed to meet just such situations, that may arise in its struggle for existence? In support of the first view stands the fact that the changes considered above often compensate only for the local disturbances in the body without regard to the general welfare of the organism; the hypertrophied heart performs its work successfully, but may impoverish the nutrition of the organism; the retention of water in nephritis helps to accomplish the dilution of the fluids supplied to the tissues, but may cause difficulty in locomotion, in respiration, in heart action; the increased respiratory efforts occurring in the diseases of the lungs assure proper oxygenation of the blood, but may exhaust the strength of the patient. On the other hand, enough adaptation to the purpose in view characterizes these phenomena to suggest that beyond the mere mechanical and chemical causes some subtle cell property exists that directs these changes, just as in the growth of the organism a guiding principle presiding over the development of the individual parts is evident.

Of course, no final answer to these questions can be given at present. But the fact that these closely related subjects were discussed at about the same time before such an organization as the Harvey Society in New York, and before an academical gathering in Basel, is of deep significance. It shows that the increased knowledge brought about by the development of modern scientific medicine is stimulating progress in more than one direction. On the one hand, it has done much to introduce rational procedures into the practice of the art of medicine by discovering new and effective methods

of prevention and cure of disease; on the other, it has furnished material for the growth of the philosophy of medicine, which seeks to formulate the few broad principles which would enable us to grasp and classify the numberless phenomena that go on in the animal organism in health and in disease.

PROPOSED NAVAL STATION AT THE JAMESTOWN EXPOSITION SITE.

There is a proposition before Congress to purchase the site of the Jamestown Exposition for a naval training station, but it would be wise before taking action to find out whether young boys can live in health in a place which had always been considered uninhabitable in summer. The soldiers in Camp Captain John Smith managed to get through the summer of last year with only a few cases of typhoid fever and malaria, but it was at the expense of much suffering and under restrictions which were too severe for a permanent thing. It is low ground in which proper sewerage is difficult or impossible, and it is surrounded by swamps which will require a perpetual crusade against mosquitos. On one side it is hemmed in by railroad yards, and on another by the notorious Pine Beach district, which of itself would be a menace to health and morality, for it has been denounced by both the clergy and the medical profession. The midsummer heat was so excessive that no exercises were allowed between 9 A.M. and 4 P.M., and it is not seen how training can be carried on under such circumstances, particularly as the summer season is the main reliance for drills. As deep water is fully a mile from shore, and the mud flats are exposed at low tide, it is not understood why naval men favor it—if they really do.

The price asked is $950,000 in addition to the $900,000 or so owed by the company to the United States—nearly two million dollars for land which cost the company a few thousand, and some buildings of doubtful value and needing rebuilding for naval purposes. This is a case in which it will be wise to let sanitarians investigate and be guided by them, as it would develop a serious scandal if after building a training station it were discovered that the young sailors could not be kept in health nor properly trained in the summer months.

NEW STATE COLONY FOR DEFECTIVES.

It is gratifying to announce that the Legislature has passed a bill making an appropriation of $188,475 for the purchase of 1,800 acres of land some thirty miles from New York City in Rockland County, near West Haverstraw, and four miles from the west bank of the Hudson River. The commission appointed by Governor Hughes in 1907 to select a site for the new State Colony did its work so thoroughly and so well in every respect that it may well have its action pointed to as establishing a record in such undertakings. Mr. William R. Stewart, president of the State Board of Charities, was chairman of the commission to select the site, and with him were associated Mr. Proudfit, whose legal training enabled him to give valuable advice on technical points that are always sure to arise in the purchase of property of any kind, and Mr. F. B. Kirkbride, who, we understand, wrote most of the report of the commission, a report which is a model in the arrangement of its contents and in the subject matters so fully dealt with.

It only remains now for the Legislature to pass a bill properly organizing the new colony. Its scope and purpose need to be specifically defined and an appropriation made for beginning the work of construction. Since Governor Hughes has called an extraordinary session of the Legislature to meet on May 11, it would be a good plan if the Governor would consent to make mention to the Legislature of the necessity for providing for the organization of the new colony at this time. We offer this suggestion for the reason that the new institution is along such broad and comprehensive lines, and the work of organizing it will be so great an undertaking, that the sooner it is begun the better, in order that the 1,800 to 2,000 defectives now in view to become residents of the new colony may be provided for as soon as possible.

The Practical Value of the Opsonic Index.

Ever since the critical consideration and careful experimental work has taken the place of the early unbounded enthusiasm in estimating the value of the opsonic treatment, voices have been heard that point out the many limitations to the practical application of Wright's theories. The determination of the opsonic index by the methods proposed by Wright has been especially criticized, and in the *Münchener medizinische Wochenschrift* of April 14, 1908, Saathoff gives further material that may lend strength to such criticism. He has found that the normal opsonic index in healthy individuals shows too many fluctuations to be used as a standard for comparison; thus in only twenty-six cases out of fifty-six were the results at all uniform, the rest differing to such an extent as to preclude the possibility of using them for a standard. The reasons for the differences found were apparently dependent not upon any changes or differences in the real content of the blood in opsonic substances, but in the many sources of error existing in the method used by Wright for their determination. Thus two consecutive determinations of the opsonic index were made in forty-three cases, and again the differences obtained were beyond any allowable error in experimental or practical work. The sources of these errors the author sees in the impossibility of preparing uniform capillary tubes, in the clumping of the leucocytes which hides the phagocytic cells, in the uneven sedimentation of the blood in the different capillary tubes, but especially in the biological peculiarities of the individual phagocytes, which lead to such marked differences in the number of bacteria taken up by them, that even the counting of two hundred cells cannot give useful averages. Thus the practical application of the opsonic index is seen to be greatly limited by the technical and inherent errors surrounding its determination; this, however, in no way detracts from the value of the contributions made by Wright to the theory of immunity, and it may be hoped that other methods may be discovered for finding the indications for opsonic treatment and for estimating the rate of progress made by its use in any given case.

The Clinical Picture of Chorioepithelioma.

The interesting condition variously known as chorioepithelioma, deciduoma malignum, syncitial cancer, etc., has of late received much attention from pathologists. The patients suffering from this disease, however, first seek the help of practising physicians, and good clinical studies of this condition are, therefore, of value in facilitating the diagnosis and the treatment of the disease. Such a study of a case of chorioepithelioma was made by Dr. E. Scheidemandel, and reported by him in the *Berliner klinische Wochenschrift* of April 13, 1908. His patient complained of pain in the chest, cough, and bloody expectoration. There was a history of a vesicular mole, removed by curettage a few months previous to the present illness. The patient's menstrual periods ceased two months before the onset of her symptoms, and she suffered from nausea and vomiting. Physical examination showed some diminution of resonance over the left apex of the left lung, with a few subcrepitant râles in the same area. The uterus was felt just above the symphysis. Blood was found in the expectoration of the patient, but tubercle bacilli were absent. The diagnosis of pregnancy and of tuberculosis was made. A few days later there appeared extreme cyanosis, dyspnea, and fever, accompanied by more physical signs in the lungs, which seemed to justify the diagnosis of acute miliary tuberculosis. Four weeks after admission there was some bleeding from the vagina, which was explained by a probable rupture of a varix, and was treated by light packing of the vagina with gauze. Some days later, however, the bleeding recurred, and careful examination of the vagina disclosed the existence of two bluish nodules in its wall, one of which was excised and proved to be a metastasis from a chorioepithelioma. The further treatment of the patient consisted in general strengthening measures with the administration of arsenic. The patient seemed to improve rapidly, and was soon strong enough to be out of bed. A few weeks later, however, she suddenly lost consciousness, and died in the evening of the same day. A study of the literature of the affection showed that this neoplasm is more frequently marked by metastases in the lungs than any other tumor. This often leads to the clinical picture similar to the one described above, which may very closely simulate pulmonary tuberculosis. The presence of any pathological phenomena in the genital organs, such as hemorrhages from the vagina or a suspicious increase in the size of the uterus, ought to warn the practitioner of the possible existence of a chorioepithelioma. Further interest is added to Dr. Scheidemandel's case by the findings at the autopsy. The metastases in the vagina were found to have completely disappeared, while many of the nodules in the lungs either had lost the characteristic picture of the tumor or showed newly formed connective tissue and the ingrowth of granulations, which could be interpreted only as evidence of marked reparative and healing processes.

Bacteria in Running Streams.

Inasmuch as the chemical methods of water analysis can only determine the presence and amount of organic matters in water, but cannot separate living and possibly actively dangerous organisms from dead and inactive matter, a biological examination may throw light on the potable quality of a water which is not to be obtained by chemical methods. M. Rothermundt (*Archiv für Hygiene*, Volume 65, No. 2) recently investigated the bacteria in streams. He found that as a rule the upper twenty-five centimeters of water contained more bacteria than the water beneath this level, though the number varied at times, being less when the current was rapid. He furthermore found that the number of bacteria in the uppermost twenty centimeters became less when the surface of the stream was exposed to the sun, being smallest at noon and largest just before sunrise. This diminution in the number of bacteria near the surface he attributes not to the sun's bactericidal power but to the fact that the bacteria seek the deeper water in consequence of a negative heliotropism. It may be of practical value to remember this fact when it is desired to make a bacteriological examination of a given water supply.

News of the Week.

A Proposal to Regulate Medical Expert Testimony.—The committee of the Medical Society of the State of New York appointed to confer with a special committee of the New York State Bar Association in regard to the regulation of expert testimony, has prepared the following tentative draft of a bill with this end in view: At any time in the pendency of any civil proceeding in any court in which any medical or surgical question is likely to be material, the court or any justice thereof may, or at the request of either party shall, appoint from the list made up as hereinafter provided one or more persons learned in the science of medicine and surgery, and of not less than seven years actual practice, as official experts, who shall investigate the facts of the case and give their opinion upon any such question arising in such proceedings, and make written report thereof to the court. Upon such appointment by the court, or if the parties file an agreement designating an expert for the case, the court shall issue an order for the person so appointed or agreed upon, to be served in the manner provided by law for the service of subpœnas. As soon as may be after service thereof the expert shall make such examination of the case as in his judgment may be necessary and practicable, and shall file his report as above provided. Such report shall be filed in the case, and shall thereupon be open to the inspection of either party, and such report may be read in evidence, and such expert may be called as a witness by either party at the trial. The New York Academy of Medicine, for New York City, and the Medical Society of the State of New York, acting for the State outside of New York City, shall, through committees appointed by these organizations, furnish to the court or courts in various counties, a list of names of members of the medical profession of good standing, and of not less than seven years actual practice, recommended by them as competent and expert in medicine and surgery, from which list the court may select such expert or experts as in its judgment may be required. Such official expert shall be paid out of the treasury of the county a minimum fee of $50 for the examination of, and report on, any case in question, $50 additional for the first day's attendance in court upon the case, and $100 a day thereafter while attendance is required by the court. The expert witnesses so listed may be called by any court of the State, and if called from the county of their residence the fee shall be increased to the extent of the extra expense incurred, to which shall be added a reasonable compensation for such extraordinary service and loss of time. Either party at the trial

may call other expert witnesses than those appointed or agreed upon, but at his own expense.

College of Physicians of Philadelphia.—The cornerstone of the new building of the college, in process of erection at Twenty-second and Ludlow streets, was laid with simple ceremonies on April 29. A letter of congratulation from the American Philosophical Society, and also cablegrams from Dr. W. W. Keen and from Dr. and Mrs. Wm. Osler were read. Prayer was offered by the Rt. Rev. Ozi W. Whitaker, D.D. This was followed by an address by the president of the college, Dr. James Tyson, who spoke of the successive homes of the college. The first of these was the Academy Building, which was occupied from 1787 to 1792. The second was the hall of the American Philosophical Society, which was occupied for fifty-three years; the third was the Mercantile Library, which was occupied for seven years; the fourth was the Picture House of the Pennsylvania Hospital, which was occupied for eleven years; and the fifth was the present college building, which has been occupied since 1863. The cornerstone was laid by Dr. S. Weir Mitchell, who pointed out that the college was founded in 1786 by a small group of surgeons who followed Washington in the War of the Revolution. During the War of the Rebellion 139 of the 180 Fellows of the college served on field and in hospital, on land and at sea, in the service of the country. A benediction was spoken by Bishop Whitaker. The new building, which, it is expected, will be completed in a year, will cost in the neighborhood of $300,000. It will be two stories high, of red brick and light-colored limestone, and it will be fireproof. The floors and panels of the walls will be of marble. In the evening Dr. Mitchell gave a dinner to the officers of the college, the council, and the building committee.

Two Hundred and Twenty-fifth Anniversary of the Founding of the City Government of Philadelphia.—In connection with the celebration of the two hundred and twenty-fifth anniversary of the founding of Philadelphia a "Medical Day" has been arranged for, at which addresses will be delivered by eminent medical men from many sections of this country and from abroad. Among the speakers will be Professor Pearsoll, of the University of Pennsylvania; Dr. J. Chalmers Da Costa, professor of surgery in Jefferson Medical College and Hospital, and Dr. J. M. Anders, professor of the practice of medicine in the Medico-Chirurgical College and Hospital. The medical schools and hospitals are arranging to have clinics, lectures, and demonstrations for the benefit of medical visitors, and a volume of 1,000 pages is to be issued containing an account of all the historical institutions, colleges, medical and scientific societies and journals, and hospitals that have existed in the city since its founding.

Pollution of Sources of Ice Supply.—In a bulletin issued by the State Health Department, Commissioner E. H. Porter reports the results of an investigation of the Hudson and Mohawk River icehouses and fields and the sources of ice pollution along the Hudson from Troy to Catskill and along the Mohawk from Schenectady to Cohoes, made by the department's sanitary engineering division. The report states that zones of dangerous pollution in the waters of the Hudson and Mohawk rivers, from which ice is harvested, exist in the vicinity of Albany, Troy, Schenectady and other places along the upper Hudson and lower Mohawk valley, and that there are forty-one icehouses in this vicinity which are so located with reference to sewage outlets as to render their ice subject to contamination and therefore a menace to health.

Plague.—The Porto Rican Board of Health has petitioned the Federal authorities to establish a quarantine against Venezuelan ports and neighboring islands that have not taken proper restrictive measures, and also to furnish a naval vessel for the purpose of guarding the Islands of Vieques and Culebra, where smuggling is frequent. Disease has been introduced into Porto Rico on previous occasions through these islands. Money has been allotted by the Board of Health for precautionary measures against the plague, and for the purchase of antiplague serum. Passengers arriving in San Juan from Venezuela are quarantined. Curaçao has also established a quarantine against Venezuela.

Smallpox in Chicago.—Ten patients suffering with smallpox were sent to the Isolation Hospital during the week ending April 25. Of this number three were from Evanston, Illinois. Eight of the patients contracted the disease from the same source, namely, an unvaccinated colored boy with a mild type of the disease. According to the Chicago Bulletin of Health, at the present time there are fifteen cases of smallpox remaining at the hospital.

For Safety Devices on the Street Cars.—The Public Service Commission has begun an investigation into the character and efficacy of the safety devices provided on the street cars of the city, with a view of attempting to lessen the number of deaths and injuries caused in street accidents. The commission has directed all the traction companies to file before May 10 complete statements as to the number and kinds of cars owned, and the detailed equipment of those cars. The statistics of the commission show that in the six months ended February 1, 1908, the street railways of Greater New York killed 299 persons and seriously injured 944. The total number of accidents due to collisions of street cars was 1,196, and the number of vehicles and persons struck by cars was 7,059. At this rate in an entire year about 600 persons would be killed and 2,000 seriously injured. The number of accidents due to collisions would approximate 2,400, and the number of persons and vehicles struck 14,000, a condition urgently demanding amelioration.

Physicians and Druggists to Study Pharmacology Together.—Recently a joint meeting of the Evanston Branch of the Chicago Medical Society with the druggists of the vicinity was held for the purpose of discussing nostrums, counter-prescribing, incompatibilities, and other matters of interest. There was organized, as the outcome of this meeting, the Evanston and North Shore Pharmaceutical Society, whose object is to study the composition, preparation and action of drugs. Licensed physicians and registered pharmacists of Cook County, north of Chicago, are eligible for membership.

An Emergency Hospital in Chicago.—Health Commissioner Evans of Chicago will soon open an emergency hospital on the second floor of 129 Harrison street, to be in charge of Dr. Geo. C. Hunt, now chief of the ambulance service.

Gift to Michael Reese Hospital of Chicago.—Mr. Gustav Freund has given to this hospital, as a memorial to his parents, the southeast corner of Groveland avenue and Twenty-ninth street, a plot fifty and one-half by ninety-six feet. In view of this gift, the building now on the ground is to be improved and used by the hospital as a home for nurses.

Gift to Harvard Medical School.—Harvard Medical School has received through Dr. Walter G. Chase from the Royal College of Surgeons of England a collection of seventy engravings and mezzotints of celebrated medical men. These, together with loan collections of Dr. Chase and Dr. E. B. Young, numbering about six hundred, have been arranged for exhibition in the Warren Anatomical Museum, in the administration building of the Harvard Medical School, Longwood avenue.

An Appendicitis Wave.—It is reported from Temple, Tex., that during the last two weeks of April there have been more than fifty operations for appendicitis in the town.

Lister's Birthplace.—A bronze tablet is to be placed on the house in Upton Lane, Forest Gate, West Ham, London, now St. Peters Vicarage, in which Lord Lister was born.

Advertising Specialists to Be Prosecuted.—It is announced that the prosecutor of the city of Chicago will undertake to prosecute those physicians and business houses that advertise cures for certain diseases and weaknesses. According to the ordinance, fines vary from $25 to $200 for conviction in such cases.

Dr. James Herbert McKee has been elected professor of pediatrics in the Medical Department of Temple University at Philadelphia.

Dr. John B. Murphy of Chicago recently resigned his position as Professor of Surgery in Rush Medical College, and has since accepted the Professorship of Surgery (head of the department) in the Northwestern University Medical School, as well as the position of attending surgeon at Mercy Hospital. Dr. Weller Van Hook, who formerly held the chair of Professor of Surgery in the Northwestern University Medical School, has resigned.

Hampden District (Mass.) Medical Society.—This society met in Springfield on April 21 and elected the following as officers: *President*, Dr. George L. Woods of Springfield; *Vice-President*, Dr. C. W. Jackson of Monson; *Secretary and Treasurer*, Dr. R. S. Benner of Springfield.

Worcester North (Mass.) Medical Society.—The fiftieth annual meeting and semicentennial celebration of this society was held in Fitchburg on April 28. The following officers were elected: *President*, Dr. John G. Henry of Winchendon; *Vice-President*, Dr. Eustace L. Fiske of Fitchburg; *Secretary*, Dr. Walter F. Sawyer of Fitchburg; *Treasurer*, Dr. Eustace L. Fiske.

The Medical Association of the Southwest will hold its next annual meeting in Kansas City, Missouri, October 20 and 21, 1908. The association is composed of members from the following five States: Kansas, Arkansas, Oklahoma, Texas, and Missouri. The secretary is Dr. F. H. Clark, of El Reno, Oklahoma, and Dr. John Punton, 532 Altman Building, Kansas City, Missouri, is the chairman of the committee on arrangements.

The Northern Medical Association of Philadelphia held its sixty-second annual banquet on the evening of April 29. Dr. Francis X. Dercum spoke on "Fads in Medicine"; Dr. Max. J. Stern on "Fancies and Humor in Medicine," and Dr. John W. Millick on "The Old and the New."

National Confederation of State Medical Examining and Licensing Boards.—This organization will hold its annual meeting in Chicago, Ill., on Monday, June 1, 1908, under the presidency of Dr. Geo. W. Webster of Chicago. The secretary and treasurer is Dr. Murray G. Motter, of 1841 Summit Place, Washington, D. C.

American Medico-Psychological Association.—This organization, formerly entitled the Association of Medical Superintendents of American Institutions for the Insane, will hold its sixty-fourth annual meeting in Cincinnati, May 12, 13, 14 and 15, 1908, under the presidency of Dr. Chas. P. Bancroft, of Concord, N. H. The secretary and treasurer is Dr. Chas. W. Pilgrim, of Poughkeepsie, N. Y.

National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The annual meeting of this society is to be held at Indianapolis, Indiana, on Tuesday and Wednesday, November 10 and 11, 1908, under the presidency of Dr. H. M. Weeks, of Spring City, Pa. Those desiring to attend the meeting and present papers should communicate with the secretary and treasurer, Dr. J. F. Munson, the Craig Colony for Epileptics, Sonyea, N. Y.

Springfield (Mass.) Academy of Medicine.—The second annual meeting of that body was held on April 14 and the following officers were elected: *President*, Dr. W. A. Smith; *Vice-Presidents*, Dr. John A. Houston of Northampton, and Dr. R. J. Seelye; *Secretary*, Dr. J. I. Butler; *Treasurer*, Dr. H. W. Van Allen.

Litchfield County (Conn.) Medical Association.—At the one hundred and forty-fourth annual meeting of this society, held in Winsted on April 28, officers were elected as follows: *President*, Dr. L. L. Hamant of Norfolk; *Vice-President*, Dr. S. G. Hurd of Winsted; *Clerk*, Dr. F. H. Lee of Canaan.

South Idaho District Medical Society.—At the meeting of this organization held in Boise on April 14 the following were elected as officers: *President*, Dr. J. A. Young of Caldwell; *Vice-President*, Dr. C. L. Dutton of Meridian; *Secretary and Treasurer*, Dr. F. H. Brandt.

Plymouth District (Mass.) Medical Society.—At the meeting of this society held in Brockton on April 15 these officers were elected: *President*, Dr. Fred J. Ripley; *Vice-President*, Dr. Charles S. Millet; *Secretary and Treasurer*, Dr. A. C. Smith.

Bristol North District (Mass.) Medical Society.—At the meeting of this society held in Taunton on April 16 officers as follows were elected: *President*, Dr. Elliot Washburn; *Vice-President*, Dr. A. V. Goss; *Secretary*, Dr. R. D. Dean; *Treasurer*, Dr. W. Y. Fox.

Tulane Alumni Association.—The Tulane Alumni Association announces that it is important that all graduates of Tulane University intending to be present at the meeting of the American Medical Association in Chicago, June 2 to 5, should write at once to Dr. Hugh B. Williams, 100 State street, Chicago, for information concerning the gathering of the alumni on June 2. Tulane headquarters will be at the Auditorium Hotel and alumni are urged to call upon their arrival for information.

The Woman's Medical Society of the State of New York is the name of a new society, papers incorporating which were filed with the Secretary of State at Albany on Saturday last. Among the incorporators are Drs. Mary H. Cotton of New York City, Mary I. Denton of Buffalo, Sarah B. Dolley of Rochester, and Florence A. Sherman of Watertown.

Harvey Society Lecture.—The tenth and last lecture in the Harvey Society course will be delivered at the New York Academy of Medicine on Saturday, May 9, at 8:30 P.M., by Prof. A. E.

Schäfer of the University of Edinburgh, the subject being "Artificial Respiration in Man." Prof. Schäfer, who has come to the United States for the purpose of giving the Herter lectures at the Johns Hopkins Medical School, was chairman of a committee appointed by the Royal Medical and Chirurgical Society to investigate the phenomena attending death by drowning and the means of promoting resuscitation in the apparently drowned. His lecture will embody the results of much practical work on the subject of artificial respiration.

Supreme Court Decision Regarding Vaccination.—It is said that the Supreme Court of Illinois has declared that the State law which makes vaccination compulsory is unconstitutional.

Death of Prof. Chamberland.—Professor Chamberland of Paris, the well-known subdirector of the Pasteur Institute and a member of the Académie de Médecine, died on May 2 at the age of fifty-seven years. He was the originator of the widely used porcelain filter which bears his name.

Death of Sister Louis Gonzaga.—At a recent meeting of the medical board of St. Vincent's Hospital the following resolution was adopted: After many fruitful years of continuous, abundant, and merciful labor in the cause of the poor and the suffering of the city, Sister Louis Gonzaga has passed along from an honored post of earthly duty to one of exalted station of reward in the world above. Those who, heretofore, have been cheered by her gracious presence and genial smile, ever an earnest of beneficent desire and of a pure and humble spirit, will miss her benign presence and bountiful benevolence more and more as time endures. Sister Gonzaga's devotion to duty was not limited by measure nor modified by method; it was free and boundless. Her activities were tireless, and the products of her efforts were worthy of the emulation of those having the sincerest motives and the largest benevolence. Sister Gonzaga believed in friends implicitly and heeded their advice with discreet and trustful reliance. She resented wrong with vigor, pardoned error with joy, and welcomed truth with open arms. Sister Gonzaga's devotion to duty should inspire us all to broader efforts and higher aims in every field of worthy opportunity, so that, like her, we too can reap the rewards commensurate with righteous achievements in every path of duty. Constantine J. MacGuire, M.D., chairman; Edward L. Keyes, Jr., M.D., secretary.

Obituary Notes.—Dr. James Edwards died at Morton, Pa., on April 28 at the age of eighty-eight years. He was a graduate of Jefferson Medical College.

Dr. Edward Dodd, of North Babylon, L. I., died on April 28 of pneumonia at the age of sixty-nine years. He had served in the Civil War and practised for many years in North Babylon. Some years ago he retired from active practice.

Dr. Alexander Cochran of Brooklyn died on April 29 at the age of seventy-seven years. He was born in Ireland, but came to this country in early life, and was graduated in 1855 from the College of Physicians and Surgeons of New York. He served as surgeon in the Eleventh Brigade in the Civil War, and was an inspector in the old Health Department of Brooklyn for several years.

Dr. James J. Terhune of Brooklyn died of nephritis on April 30 at the age of sixty-four years. He was graduated from the Long Island College Hospital in 1875 and had since been in active practice in Brooklyn. He served in the Civil War in a New Jersey cavalry regiment, and was a member of U. S. Grant Post, G. A. R. He had been surgeon of the Thirteenth Regiment for several years.

Dr. William H. Caswell of this city died at Shelter Island on May 3 at the age of sixty-six years. He was graduated from the College of Physicians and Surgeons in 1888 and had made a specialty of neurology.

Dr. Richard Stebbins of Omaha, Neb., died suddenly on April 19 at the age of eighty-four years. He was a native of Springfield, Mass., and was graduated from Harvard in 1846. He practised for a time in New York City and various Western cities, later settling permanently in Omaha.

Dr. James C. Ralston of Pittsburg died on April 27 as the result of a streptococcus infection received in the course of his work as pathologist to the Pittsburg Hospital of the Sisters of Charity.

Dr. Gustavus Hay of Jamaica Plain, Mass., died on April 26 at the age of seventy-eight years. He was born in Boston and was graduated from Harvard in the class of 1850, receiving his medical degree from the same university seven years later. He made a specialty of ophthalmology and otology and had held many positions in Boston hospitals.

Dr. Frank P. Moore of Lisbon, O., died of tuberculosis in San Antonio, Texas, on April 14, at the age of fifty-seven years. He was born in East Fairfield, O., and was graduated from the University of Michigan medical school in 1874, since which time he had practised in Lisbon.

Dr. Charles J. Towne of Essex, Mass., died on April 22, at the age of sixty-eight years. He was born in Stoddard, N. H., and received his medical degree from Dartmouth. After practising for a time in Townsend, Mass., he removed to Essex in 1878.

Dr. Carl Kitchen of Des Moines, Ia., died on April 23 at the age of fifty-eight years. He was born in Indiana, and in 1878 was graduated from Keokuk Medical School.

Dr. Anthony White of Excelsior Springs, Mo., died on April 20, at the age of sixty-two years. He was born in Germany, but was graduated from Rush Medical College, Chicago, in 1889.

Correspondence.

OUR DUTY TO THE CRIMINAL.

To the Editor of the Medical Record:

Sir: In *Charities* for March 14, 1908, the writer calls attention in a timely manner, as I believe, to several directions in which some of our penal institutions may be greatly improved, especially our county jails and penitentiaries.

In the first place, I insist upon the importance of daily food inspection by competent and reliable men, entirely outside and above all political affiliations. I also believe, and rightly so, that food for prisoners should be properly served—not, as is often done, in rusty tins, cold, unpalatable, and eatable only under the pressure of dire hunger. Medically speaking, how can the bodies of men be thus preserved? Morally, is it for their present or future welfare? Are taxpayers willing continuously to pay the price of food which prisoners do not always get? It should be for the New York State Prison Commission to investigate and to report their findings, so that, if necessary, the Governor, and, perhaps, finally, the courts, may decide what is best to do about it.

I desire, and again rightly, that every penal institution should have an advisory medical board, nonsalaried and above reproach. The advisory medical board should be selected from men who have grown gray in service, good and true to their fellow men, who will do essential work for prisons and prisoners, besides caring for the ill, and who, whenever and wherever matters, sanitary and even moral, call for action, will stand firm for right. After all is said, *morality* often depends upon the *sanitary*, and therefore the

physician should have *real* and *not perfunctory* control. Is it permissible to have merely one physician to a prison, and he salaried and possibly a political appointment? Let him interfere too much with the reigning powers, as they could affirm, and his position might be lost, or, at least, the risk thereof would be great. Who should see and know and have power every day except he, to do his full duty as a man and physician, when other men and brethren, for little wrongdoing, may be thrust into "coolers," namely, into damp, dark, cold cells for one or several days, in solitary confinement, with insufficient covering—a gill or two of water and a slice or two of bread allowed per diem—to breathe an irrespirable air due to insufficient ventilation and also to body exhalations and excretions, almost unbearable at times for man or beast—a positive proof of "man's inhumanity to man."

How may we, how should we further correct all this? Only by official visiting—visiting by those well selected and approved, who will instruct and guide, who will speak of integrity, duty, truth, work—the essential things Jesus Christ came to teach men here below. Let us have creeds of many kinds if we will, but let the underlying thought of all creeds for the guidance of life stand out and far above all of them. When jails, penitentiaries, prisons, and even so-called reformatories have for wardens or superintendents, not, as is true sometimes, men of low ideals, imperfect knowledge, strong bias for "pull and place," and not for right and duty, but invariably the instructed, humane, merciful ones of earth, then penal institutions might reform prisoners, and not breed continuously, as they do now, not a few worse, and, indeed, fresh criminals.* I would venture to add that anarchists and socialists would then also be greatly reduced in number.

BEVERLEY ROBINSON, M.D.

42 WEST THIRTY-SEVENTH STREET.

CORRECTION OF UTERINE DISPLACEMENTS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR—It seems a work of supererogation to answer Dr. Byron Robinson's criticism of my "Plea for the Correction of Uterine Displacements." Quoting his statements will suffice, in many cases, to refute his arguments. His answer to his own question as to the normal position of the uterus, that "it is a perfectly movable one," is an instance. Of course, it should be a perfectly movable one, and for that reason I object to leaving it "lying upon the rectum," or in the sacral hollow, pinioned beneath the intestines, sustaining their weight upon its face, and the transmitted pressure of corset and heavy skirts.

Dr. Robinson says, "A fixed uterus is pathological, and will be injured in its functions, absorption, menstruation, secretion, gestation, etc." I agree with him as to that, too, and for that reason I wrote my "Plea for the Correction of Uterine Displacements." His simile of "loose testicles requiring no fixation" is, of course, hyperbole, the uterus and testicles bearing about the same relation to each other in structure, function, and position, as the objects looked at respectively through the microscope and the telescope. He says that uncomplicated retroversions do not need treatment, notwithstanding his previous statement that the normal position of the uterus was a "perfectly movable one." However, if that were true, the fact is that they do not *remain* uncomplicated, as I tried hard to demonstrate in my paper. Dr. Robinson dismisses my arguments without discussion, but I do not agree that that disposes of them. I repeat that when the fundus of the uterus goes back to the sacral hollow, the drainage received from the tubes, gathered from the pelvis by the fimbriæ, as has been proven by experiment, can no longer be passed into the vagina, and collects in this inverted bowl. Not only does this collection render the uterus foul, but the current in the tube is eventually reversed, and the accumulation is returned to the pelvis. Slowly and inevitably inflammation, congestion, and hyperplasia ensue, succeeded by perineal heaviness, dragging sensations, pelvic uneasiness; and then these belated surgeons begin to recognize retroversions with complications, and are ready to render assistance. They do not, or they seem not, to understand that assistance rendered earlier might have prevented these complications. They would confine preventive treatment to the bacterial diseases. They would give antitoxin after the jaw is locked, and the back is arched, the destruction of the nerve centers has already occurred.

I am not willing to leave the uterus helpless in the sacral hollow, awaiting the results of plastic changes that compel assistance. I want to set it up when I can do so with my two hands, sustaining it if necessary with a pessary. By thus continually replacing it, I have succeeded in restoring it permanently to that normal position of "perfect mobility," which Dr. Robinson describes, and without even the aid of tampons. And in these simple cases, pain and other symptoms have been relieved. One woman, beyond sixty, having passed the climacteric some twelve years before, complained of pain and leucorrhea. She was gray and wrinkled, her breasts were atrophied, muscles attenuated, she stooped, and in every way bore the marks of old age. Her uterus was retroverted, "lying on the rectum," large and boggy. After several corrections, it remained upright, and several months later was found—as observed both by Moncure and myself—to have atrophied, to have joined the other organs in senility.

I defy Dr. Robinson's assertion that my paper was a bid for surgery. Many of my patients, when I can get the uterus off the rectum, I treat from day to day, setting the organ up as often as it falls, and often succeed, almost beyond my heart's desire, because it is a pleasure to look in the pelvis, perhaps to verify your own diagnosis. "Hysteropexy" is not considered a "short road" or any "road to success" in fruitful women. It has been abandoned. But that operation is preferable to leaving the uterus resting on the rectum, pulling and tugging upon the broad ligaments and ovaries, pressing upon the sacral nerves and their sympathetic ganglia, the sacral plexus, the superior and inferior hemorrhoidal plexuses, giving rise to constipation by directly encroaching upon the rectum, and indirectly, through the interruption of nervous impulses; irritating the pelvic nerves, and, incidentally, bringing about universal nervous disturbance. The "hyperemia" that the uterus enjoys while retroverted, and which Dr. Robinson so much lauds, bears this distinction to the Bier treatment, to which he evidently refers, in that it is constant. Professor Bier never contemplated the constant application of a bandage above a tuberculous knee, or the induction of a permanent congestion in any organ or tissue, but in every instance removes the stricture some time during the twenty-four hours, and allows the accumulated blood to pass.

FRANK H. HANCOCK, M.D.

NORFOLK, VA.

*See in *Charities and the Commons*, March 21, 1908, report of committee appointed to investigate jails and penitentiaries.

THE RAY BROOK SANATORIUM.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR—The letter of Dr. Macdonald in your issue of April 18, while an arraignment of the New York State Civil Service Commission and its methods, is so manifestly unfair by the reflections cast upon the qualifications of the men certified by the Commission as to demand reply.

It is true that the examination held last May for the purpose of securing a list of eligibles for the Superintendency of the Ray Brook Hospital was devoted largely to a discussion of Wright's opsonic hypothesis and its relation to the diagnosis and treatment of tuberculosis. I "read" for the examination, as I have no doubt the other candidates did also, but certainly there is nothing unusual or remarkable about this. Whether the opsonic theory and the use of sera have any practical application in the treatment of tuberculosis is not the question at issue. A year ago the subject was occupying the attention of phthisiotherapists the world over, and these questions, if they served no other purpose, were calculated to determine whether a man who aspired to be the head of a tuberculosis hospital was familiar with the most recent theories and discoveries in connection with the disease. If these questions had their origin in the mind of the lay chief examiner he is indeed a genius. However, the *New York Times*, in the issue of March 22, in discussing the Ray Brook situation, states that they were prepared by Dr. Samuel B. Ward of Albany. He is the gentleman who prepared the examination held some two years ago, when the man appointed as Superintendent had the favorable consideration of the Board, and it is not understood that there was any criticism of this examination, although the subject of sera was pretty thoroughly discussed.

Dr. Macdonald intimates that our knowledge of the diagnosis of pulmonary lesions, in their various stages, was gained simply by reading textbooks. Because the examination gave us no opportunity to demonstrate in a practical way our capacity as experts in the physical diagnosis of incipient phthisis, it is not just to infer that our knowledge of this most important subject is purely theoretical. I submit that there are men not connected with tuberculosis hospitals who are expert in the diagnosis of incipient pulmonary lesions "through prolonged, varied, and practical experience."

He states "that there are a large number of men who seek to improve their position financially and socially

largely through their capacity to prepare and to successfully pass Civil Service examinations as now conducted in the State of New York." It is not understood how surgeons of the Army or of the Marine-Hospital Service could hope to improve their social position by occupying any position obtainable in the State of New York by passing a Civil Service examination. When the Doctor remarks that men trained for the service of the United States Army or the "Marine Corps" (*sic*) of the United States present no conclusive evidence that they should be made superintendents of tuberculosis hospitals he evidently forgets that two of the most successful hospitals of the kind in the world are maintained in New Mexico, one by the Army at Fort Bayard, and the other by the Marine-Hospital Service at Fort Stanton, and that both institutions are successfully managed by men trained only in their respective branches of the public service.

He remarks that the action of the Board in causing to be introduced in the Legislature a measure reducing the post-graduate experience required of the candidates from six to five years was taken in order that a certain man might be made eligible, *not for appointment*, but for the Civil Service examination. Yet the Doctor told me in the Albany City Hospital last January, in reply to my inquiry as to what they were going to do, that the Board intended to have the law changed and *appoint* the man referred to. I was also informed to the same effect by the Rev. Dr. Devins, the Secretary of the Board. In view of this attitude of the Board, it is not likely that any one cognizant of the state of affairs will put himself in the position of competing with a picked candidate, in case another examination is held, notwithstanding the appeal for publicity of the fact that the Superintendency of the Ray Brook Hospital is now vacant. The impression is firmly fixed in the minds of those familiar with the situation that the Board has held the vacancy open for the past year in order that their candidate, "who has served the institution for a number of years," would be eligible under a five-year post-graduate requirement; and that had this candidate not been denied admission to the examination held by the Civil Service Commission last May there would have been no fault found with the questions or with the method of conducting the examination.

The Doctor complains that the examination last spring was held "without any consultation with the Board of Trustees as to their notions of the attainments necessary for the Superintendency at Ray Brook." This attacks the basic principle of civil service reform, which contemplates a distinct separation of the appointing power and the examination. If the Civil Service Commission is incapable of obtaining a suitable man for the Superintendency of the Ray Brook Hospital (which is not admitted), then, for goodness sake, exempt the place from the provisions of the Civil Service law, and let us have no more opera bouffe examinations.

V. E. Watkins, M.D.,
Contract Surgeon, U. S. Army.
No. 2 on the List of Eligibles.

Fort Greble, R. I.

MELODY CURE OF STUTTERING.

To the Editor of the Medical Record:

Sir—The letter of Dr. Rosenbeck in your issue of April 18 claims priority for the "melody cure" of stuttering on the part of a writer in 1588, who recommends singing as a cure. The melody cure is in no way related to singing. The stutterer (or stammerer) never stutters while singing, but any amount of singing will never stop his stuttering when he talks. The melody cure is based, in the first place, on the fact that every stutterer speaks in an abnormal voice, which is characterized by monotony and stiffness, and, in the second, on the fact that he ceases to stutter as soon as he learns to speak in a melodious voice. The cure consists simply in training him to speak melodiously, not to sing. Neither the observation concerning the stutterer's monotony nor the attempt to replace the lost melody have, as far as I can learn, been made before my work was begun at the Vanderbilt clinic. I must add that the melody cure differs from other cures in vogue in that it is based on no such tricks as lengthening the vowels, dropping consonants, etc., all of which distort the speech. It simply brings back to normal action an organ that was acting abnormally. This is the reason why the cure is invariably successful and permanent.

E. W. Scripture, M.D.

87 Madison Avenue, New York.

Medical Study in Germany.—During the present winter semester there studied in the German medical schools 151 women, while in the Swiss medical schools the number was 1,129.

OUR LONDON LETTER.

From Our Special Correspondent.

CANCER RESEARCH IN THE COLONIES—SIR A. WRIGHT'S LUMLEIAN LECTURE—ANESTHETICS—BENEFICENT BACTERIA—HOSPITAL SATURDAY FUND—OBITUARY.

London, April 17, 1908.

Last night a White Paper was issued dealing with cancer research in the Colonies. The attention of the authorities in the British Colonies and Protectorates had been drawn to the importance of these investigations being on a uniform basis, as great interest is attached to the occurrence of cancer in widely separated geographical areas and in divergent races. Valuable information had already been obtained and attracted notice in foreign countries where equal opportunities for such expensive investigations did not exist. Special attention was directed to the microscopical examination of tumors, and it was pointed out that inquiries lately conducted in England, Scotland and Ireland had shown that with the great facilities enjoyed at home almost 40 per cent. of the less advanced cases of internal cancer and many external cases were not recognized in hospitals from clinical symptoms alone, and a large number of cases would have been ascribed to cancer had not microscopical examination shown them not to be so. In different parts of the Empire this examination was important, not only as to the variations of the records, but also on account of the uncertain nature of many diseases common in the tropics. The difficulties medical officers had to contend with in discovering cancer in aboriginals are fully recognized, but it is added that where the requisite evidence is difficult to obtain it possesses most value. In replies received to the circular letter the Acting Governor of Barbados remarks on the apathy of the medical profession and reports an effort to awaken their interest in the subject. The Governor of St. Helena mentions that the Acting Colonial Surgeon suggests that tubes should be dispatched for sending home specimens. The chief health officer of Tasmania suggests the regular transmission to the colonial medical authorities of the diagnosis made in England of any case sent which commanded more than ordinary attention.

Sir A. E. Wright delivered the Harveian Society's lecture this year and naturally devoted it to the importance of taking the opsonic index in connection with therapeutic immunization. The determination of the opsonic index both before and after inoculation would, he maintained, always serve as a guide to dosage. If the determination were not made, only the smallest amount could be safely administered, and that might not be sufficient to produce the beneficial effect. Moreover, the index is the most useful guide to the time for giving the remedy. The dangers of too large doses were seen when tuberculin was first introduced. He admitted that in some cases the dosage may be measured to a certain extent by the local effects, or even by the pyrexia, but for accuracy the opsonic index is the only reliable guide. Thus in staphylococcus infection with local lesion, as in boils or carbuncles, the local effects can be seen and serve as a gauge to dosage, and the same may be said as to some cases of tubercle of the skin. In regard to pyrexia the lesion is often unhealed, although the temperature has returned to normal, and then the opsonic index is the only guide. This remark applies particularly to the treatment of pulmonary tuberculosis. In other chronic cases the index is the essential guide as to the time of making inoculations as well as to the amount to be injected, and the same may be said of cases without visible lesion and where symptoms are latent. In acute cases time is important and too large a dose dangerous, so the index must be determined. The lecturer proceeded to point out two important points as to inflammation, viz., the emigration of leucocytes and the transudation of lymph, laying down that it is important that (a) there should be a plentiful supply of blood and lymph to the part, (b) that these should carry protective substances, and (c) that a full supply of healthy leucocytes should reach the part. Sir A. Wright then gave instances of what he called "miscarriage of inflammation." These are (1) where there is excessive serous effusion with too few leucocytes, as in tuberculous pleural effusion; (2) in abscess formation where the leucocytes are dead, the protective substances absent, and where the fluid containing the disintegrated leucocytes has an injurious effect on the healing process; (3) where a sinus or fistula is produced or great induration around the lesion; (4) where excessive dryness of the tissues hinders the access of

the protective substances. These miscarriages can be remedied by appropriate methods. Thus when fluid is in excess we can remove it; in the opposite condition we can increase the flow by applying citrate and chloride of sodium to the part or even by giving acid citric internally, and, more important still, we can increase the protective substances by inoculations of the proper vaccine in accurately determined doses.

For the last two months or more the subject of anesthesia has occupied attention from various points of view. One of these is the responsibility of anesthetists, and this has been freely discussed before the Medico-Legal Society, which has adopted resolutions addressed to the General Medical Council and the Privy Council urging that definite instruction on the subject should find a place in the curriculum, and that only registered practitioners should be permitted to administer anesthetics. Not much objection will be taken to this procedure and the bodies concerned will no doubt prolong their consideration of it as inordinately as usual. Meantime what is the actual legal liability of the anesthetist is a question of no little importance. It was considered at the Medico-Legal Society and the president—no less an authority than Mr. Justice Walton—made some weighty statements. He said, for instance, that if a surgeon killed a man by operating on him it was not an absolute excuse to say he had done his best. With regard to inquests which had been discussed Mr. Justice Walton said the law was simple; the difficulty arose from the facts. A coroner must hold an inquest if he had reason to think the death was unnatural. To apply that to chloroform in the ordinary course of practice—was such a death unnatural? He would not deal with it now. Some day it might come before the courts. If death from chloroform was unnatural, and the coroner had reason to think that the cause of death, he must open an inquest. So if death was by an operation that seemed unnatural. In regard to restricting the administration to registered practitioners, he was of opinion that the only persons distinctly forbidden to practise appeared to be apothecaries. To do the work of physician or surgeon was not in itself a penal offense, but to practise as apothecary was, though he could not say why. So a man might perform operations or give medicines without committing a penal offense provided he did not practise as an apothecary, whatever that might mean. But if he killed anybody and was not qualified it would not be sufficient excuse for him to say he had done his best if he had been doing something which was in itself dangerous and likely to cause death unless done with great skill, and he knew he had not that skill. In such a case he thought it would be obviously manslaughter and probably murder.

The state of the law as thus expounded by one of our legal luminaries is to say the least unsatisfactory.

"Beneficent Bacteria" was the title of a lecture given at the Institute of Hygiene on Tuesday afternoon by Dr. J. W. H. Eyre. Having gained attention by some striking figures, such as that nearly ten millions placed end to end would only measure a yard, and that one hundred millions would be required to cover a shilling in a single layer, and that in eighteen hours one could increase to 76,456 millions, Dr. Eyre proceeded to show how useful and necessary these organisms were. The part they played as nitrogen fixers was now becoming known to the farmer, who can be supplied by laboratories with cultures to inoculate his fields at sowing time. The utilization of lactic bacteria by dairymen was explained and also the action of the septic tank for dealing with sewage. Other examples of beneficent bacteria were given, and the frequenters of the Institute are to be congratulated on their presence.

The Lord Mayor presided on Saturday afternoon at the annual meeting of the Hospital Saturday Fund. The income for 1907 was £27,140, being an increase of £680 on that of 1906. The twenty-three local committees collected £3,529 and £105 was received from football competitions. On January 18 £24,437 was distributed among 208 institutions. During the thirty-four years of the fund's existence over £400,000 has been raised in London mainly by the workingmen. The Lord Mayor said that, notwithstanding the discontinuance of street collections since 1897, the receipts of the fund had increased each year and a debt on the purchase of the freehold offices had been paid off. He called attention to the fact that not only hospitals, but dispensaries, convalescent homes, and surgical aid societies benefited by the fund. The Mayor of Southwark also spoke and said every firm having twenty employees should hold a collection. The Lady Mayoress distributed medallions to the St. John's Ambulance Association.

The death of Thomas Henry Wakley on the 5th inst. at the ripe age of 86 removes another medical editor of the last generation. He was the son of the founder of the *Lancet* and for some twenty years a joint editor with his younger brother James, who predeceased him by many years and whose career had practically been restricted to the *Lancet*.

The recently deceased Thomas Henry took the membership of the College of Surgeons in 1845, the Fellowship in 1849, and became surgeon to the Royal Free Hospital. Throughout the fifties he was much occupied with the subject of stricture, for the treatment of which he devised an instrument. He wrote some articles for Cooper's Surgical Dictionary, but his contributions to medical literature were mostly in the *Lancet*. He leaves a son, who is also at work on the journal.

Dr. Oswald A. Browne, F.R.C.P., A.M., M.D. (Camb.), assistant registrar of the Royal College of Physicians, died on the 9th inst. He took his first diploma, M.R.C.S., in 1881, that of the Lister College in 1886, and was made a Fellow in 1898. He was physician to the Royal Chest, the Alexandra Childrens', and the Metropolitan hospitals. He contributed some papers to St. Bartholomew's Hospital reports, at which hospital part of his education was taken.

Dr. Joseph Walker, formerly president of the Odontological Society, died on Monday at midnight in his eighty-third year. He took the M.R.C.S. and L.D.S. in 1860 and subsequently M.D. (St. Andrews). He had been on the staff of the Dental Hospital and lectured on mechanical dentistry there, and had also taught dental surgery at the Westminster Hospital. He was editor of the Journal of the Dental Association and of the Transactions of the Odontological Society, 1880-1882, and a contributor to these, as well as to the medical journals.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 23, 1908.

Orthopedic Heresies on Feet and Their Treatment.—The profusely illustrated paper of L. R. G. Crandon is an amplification of the following propositions: (1) The foot has adapted itself to vicious shoeing conditions and has become a hind-foot or hoof. (2) Acute foot symptoms are only a part of general muscular flabbiness and ligamentous relaxation. (3) Chronic foot symptoms are due partly to general lack of tonicity and partly to vicious shoes. (4) The reason that some patients get well using plates is that they develop muscles trying to get away from the uncomfortable plates. (5) Modifications of the plate idea are equally bad. (6) The fallacy of footprints and plaster casts as means of diagnosis. (7) Treatment. The education of the patient in standing and walking. The author elaborates the principles of proper shoeing and gives the histories of illustrative cases. The good shoe is defined by him as one which is light in weight, soft and flexible in all its parts, and the flat heel should be rendered balancing and unstable by making the outer front corner of soft rubber. The construction should be such that in size and shape the shoe shall not pinch the expanded foot bearing all the weight of the body, and the inner sole so made that the foot shall not after a short time sink down in the middle of the plantar region as into a trough. The upper should be high enough in front to allow the freest toe flexion and over the middle of the foot to let the dorsum of the foot raise itself as the toes grasp the sole. The counter should be low to allow free motion at ankle and between astragalus and calcaneum. There should be no "fit," in the usual sense of the word, but yet enough fitness for the particular foot for a loose lacing to prevent slipping at the heel.

Rosenmüller's Fossæ and Their Importance in Relation to the Middle Ear.—F. P. Emerson gives summaries of the clinical histories of eight cases and presents the following conclusions: (1) Pathological amounts of lymphoid tissue are present in Rosenmüller's fossæ in a large number of cases of chronic secretory and suppurative ears. (2) This cannot be detected with certainty by posterior rhinoscopy alone, even where a good view of the vault is obtainable. (3) In every chronic case there should be a routine digital examination. (4) Where much tissue has been found and removed, the process of healing should be watched that no fibrous bands form. (5) It is possible in a large majority of cases to predict the involvement of the ear by the condition of the correspondinf fossa. (6) Results, where after-treatment is followed, are particularly good in removing abnormal sensations, restoring uniform hearing without fluctuations, in the partial or complete relief of tinnitus, and in the prevention of recurring sal-

pingitis. (7) If directions are given to blow one side of the nose at a time and carefully, the affected tube is no more apt to be infected later than its fellow.

New York Medical Journal, April 25, 1908.

Chlorosis Cured by Thyroid Extract.—In connection with a discussion of the general physiology of internal secretions F. K. MacMurrough relates the history of a young woman, single, 22 years of age, occupation bookkeeper, who suffered with symptoms of chlorosis since first menstruation. Fainting spells, heart flutterings, constipation, scanty menstruation, and constant leucorrhea were the more prominent troubles in this case. The blood count was deficient. The treatment consisted of thyroid extract, 3 grains after meals, a daily quart clyster of normal salt solution, Blaud's pills, the practice of deep breathing, and open-air life. All the symptoms yielded which had before been intractable to other modes of treatment.

The Management of Typhoid Fever Without a Nurse.—L. C. Freeny says that the average general practitioner is obliged to do without a trained nurse in three-quarters of his cases. He has adopted the custom of typewriting his directions for a given case and fastening the paper to the wall of the sick room. He does certain things such as giving a bath, etc., once himself to show the family nurse how it should be done. His typhoid directions are as follows: Sponge the patient every three hours when the temperature reaches 102.5° F. or over, unless he is in a sweat. Use a watch to time yourself when sponging, and make it take you at least thirty minutes to complete it. Do not sponge the patient when he is in a sweat, but wait, even if the temperature is high, until the skin is dry and hot, before sponging. Take the temperature every three hours. Give the nourishment every three hours. If you forget the medicine don't forget the nourishment and the temperature. Watch every bowel movement for any sign of blood. Report to me any complaint of pain in the bowels. The nourishment ordered is enough. The patient must not have anything else. Keep quiet in the room and always encourage the patient. Give a warm soapsuds bath every morning at 9 o'clock, and an alcohol rub every evening at 9 o'clock. Never rub the abdomen at all. Write down anything of importance that you may want to ask me; then it will not be forgotten.

Accidents During Anesthesia.—E. R. Zemp enumerates the various accidents which may happen during anesthesia and gives general directions for the conduct of this part of an operation going into great detail. One-eighth grain of morphine and one one hundred and fiftieth grain of atropine are recommended as a routine measure a few minutes before the anesthetic is begun. This quiets the patient, reduces respiratory excitability, steadies the vasomotor system, and lessens the fall of arterial pressure so certain to occur under chloroform. Concerning stertorous breathing, the author says this may be palatine, mucous, or pharyngeal. The first two are not significant, but the third calls for removal of the cone or mask as it is caused by the tongue falling back against the posterior pharyngeal wall, and if not attended to the patient may suddenly suck his tongue tightly down into his throat, thus cutting off his air entirely. An inspiratory "whoop" is always a sign of danger. The author says further that there is no method known to man of administering an anesthetic that is entirely free from danger. Beware of the anesthetist whose peculiar method of administration has banished the hypodermic needle from the operating room and has reduced the mortality from anesthesia to nothing.

Sudden Blindness and Its Various Causes.—M. Buchanan enumerates the causes of sudden blindness, noting that its occurrence in both eyes simultaneously is rare. Such an accident outside of trauma always suggests a systemic origin. Among the most common causes are toxemias, especially uremia, malaria, anemia, and drugs and poisons, as quinine, lead, and alcohol. Uremic amaurosis is most common in the nephritis of scarlatina and pregnancy. Methyl alcohol poisoning (wood alcohol) is becoming more common on account of its cheapness and its substitution in cheap whiskeys and many toilet preparations. In such cases the visual fields, if blindness is not complete, are contracted and show a central absolute scotoma. Quinine in large doses may produce total blindness due to spasm of the vessels diminishing the blood supply and causing a degeneration of the ganglion cells and nerve fibers of the retina and optic nerve. Hysterical blindness is rarely bilateral. Transitory blindness sometimes occurs with brain tumors, especially when the occipital lobe is involved. Complete sudden loss of sight in one eye without external signs of inflammation suggests embolism of the central artery, complete detachment of the retina or an extensive hemorrhage into the vitreous chamber. Thrombosis also of the central vein of the retina causes almost complete loss of sight at the time of occurrence and may ultimately lead to permanent blindness. Transitory forms of monocular blindness may occur, due presumably to vascular spasm. The foregoing are a few of the many points elaborated by the author.

Journal of the American Medical Association, April 25, 1908.

The X-Ray in Leukemia.—A. Stengel and H. K. Pancoast advocate the use of a new method of treating leukemia by the *x*-ray—applying the radiation to the bone marrow instead of to the spleen, as has hitherto been the practice. According to the majority of pathologists, it is the bone marrow that is primarily involved in the lienomedullary or mixed forms, and recent researches have developed evidence that this is true also in lymphatic leukemia. The unsatisfactory results of *x*-ray treatment as hitherto given, with its only 8.7 per cent. of ultimate cures, is noticed, and the probable reason, viz., that the *x*-ray treatment has been directed against a result instead of the cause or seat of the disease, is pointed out. The rapid destruction of lymphoid tissue, such as is apt to follow direct splenic exposures, is, moreover, not always wise or safe, as a toxemia is easily induced thereby, and has even caused death in some cases. Five patients have been treated by the new method with encouraging clinical results. The technique of the treatment is described in detail; the length of exposures, their frequency, the avoidance of any production of toxemia, the points of application, etc., are all discussed. They find that the enlarged spleen is reduced in size, just as it is with direct applications, though more slowly, and the misleading tendency of a comparatively quick symptomatic cure is avoided. The patient's general condition is, on the whole, better from the start with this method, and toxemia can be avoided. The treatment must be systematic; cessation of it for long intervals is to be guarded against, especially in the early stages, and even short interruptions are not advisable until the disease is well under control. The proper time to stop treatment is undecided, but usually not until the conditions are normal, and it is wiser to stop gradually rather than at once. Lymphatic cases respond well to this method, but it is advisable to observe the same precautions in regard to applications to the glands as to the spleen, viz., not to expose them directly to the *x*-rays until considerably reduced in size and the patient's general condition has greatly improved, and then with caution. Exposures are distributed almost all over the body, and the risk of severe dermatitis is, with ordinary care, very slight. The bone pains of splenomedullary leukemia are early relieved by this treatment. The leucocyte count is found by the authors to be of comparatively slight importance, *per se*, but the differential count is one of the important indices to the effect of the treatment.

Hyoscine and Scopolamine Hydrobromide in Refraction Work.—W. Reber gives his experience with hyoscine hydrobromide and scopolamine hydrobromide in refraction work, and more particularly the results of some experimental tests of the effects of these drugs on the pupils and on accommodation, respectively. Of the two salts, that of hyoscine seems to be the most effective, the relative pharmacodynamic power as used in ordinary office work being given by him as somewhere near 59:92. In other words, hyoscine showed itself in these experiments to be approximately 50 per cent. more potent than scopolamine in producing cycloplegia for refraction work. The experiments thus confirmed his opinion formed by clinical observation which had led him to suspect the inferiority of scopolamine. During the last six years Reber has used 1/10 per cent. solution of hyoscine hydrobromate (1/4 grain to the ounce), containing cocaine also in the strength of 1/5 per cent. in something like 2,000 cases of refraction in private practice, without once seeing any pronounced toxemia. In about one case in fifty there was some flushing and quickening of the pulse with slight vertigo, which he attributes to the failure of the patient to press tightly over the canaliculus after the drug was instilled. He has used it as freely in small children as in adults. Customarily he has the solution instilled once or twice the evening before and twice on the morning of the consultation. For office instillation the use of the solution is preceded by one drop of a 2 per cent. cocaine solution, warmed like the hyoscine drops. Two hyoscine instillations are made half an hour apart, and in any time one or two hours after the first instillation the refraction may be satisfactorily tested in the vast majority of cases. Accommodation sufficient for everything but the most exacting near work is generally reestablished by the end of from forty-eight to sixty hours.

Treatment of Chronic Trachoma.—A. E. Prince recommends the use of a 10 per cent. solution of copper sulphate in glycerine, put in the patient's hands with instructions to dilute one drop in twenty drops of water and to use freely on the eye from four to six times as the best home treatment for chronic trachoma. In some cases a weaker solution has been found advisable, but toleration is soon acquired by most patients and some have borne well a strength of one to five. He believes it more efficient than the occasional application of the bluestone crystal. He still finds a few cases, however, in which his former favorite prescription of tannin and mercuric oxide ointment, 1.5 per cent., comes into play, with some sulphate of copper added as an adjuvant. Nitrate of silver is also sometimes useful in addition to other remedies, especially when there is mucopurulent secretion. None, however, is in his opinion so generally useful as the copper and glycerine solution. Of equal importance is the necessity of removing trachomatous material that may prevent the remedy from reaching deeply situated infection. Some have erred in putting too much reliance on the operation and not following it up with a remedy that attacks the disease after it has been exposed. The various complications of trachoma and their treatment are discussed in some detail. Prince finds jequirity a useful drug in pannus due to trachoma, but he uses it commencing with a very weak solution, 0.25 per cent. at the commencement, and uses a fresh solution every day. For the entropion operation he prefers the Anagnastakis method.

Pyelitis from Appendicitis.—Four cases, rather unique in literature, illustrating the connection of acute pyelitis with appendicitis, are reported or referred to by G. L. Hunner. The cases are of special significance because of the obscurity of the symptoms of the antecedent attack of appendicitis, and a dependence on the urinary findings to the exclusion of other diagnostic aids might end in disaster. Two features in these cases besides the abnormal urine suggest themselves as being fairly constant and therefore of possible future diagnostic value; these are bladder disturbance and the early cessation of the microscopical signs of urinary tract disease. These were present in all four cases. The pathology is suggested by the findings in Case 1. The appendix was densely adherent over the pelvic ureter. This would naturally lead to inflammation and obstruction, causing acute hydronephrosis with its chances of kidney infection. Hunner's meeting with four such cases in three years makes him think that they cannot be very rare, and Dr. Edward Ochsner has told him of two similar cases coming under the observation of himself and his brother. Hunner mentions an observation of still another case, probably of this class, which he did not include in his paper because the urinary symptoms were not marked. The importance of early recognition of these cases is obvious. A pyelitis or kidney condition, in itself, is rarely immediately dangerous, but the overlooking of an acute fulminating appendicitis because of dependence on the urinary examination might cost the patient his life.

The Lancet, April 18, 1908.

A Cavity of the Lung Successfully Treated with Ozone.—G. Stokes reports the case of a man who had pneumonia with pleurisy followed by empyema for which portions of ribs were resected in front and behind. The posterior wound healed satisfactorily but the anterior did not. The discharge became offensive and putrid and he became septic. He was treated with a vaccine on the Wright principle and in due time a small piece of lung tissue came away with a subsidence of the sepsis. There was left a lung cavity and sinus extending over six inches from the chest wall and communicating with the bronchi. This cavity was treated with ozone gas injected under pressure, and after a course of treatment carried out on thirty different days extending over a period of seven weeks the patient was cured. The author says that the bacteriological changes which took place confirm the following statements: (1) Microorganisms that are under healthy conditions good and useful will under unhealthy conditions become hostile; (2) that unhealthy microorganisms require unwholesome matter for their nourishment; (3) that ozone and oxygen act by so changing and purifying the discharges that unhealthy microorganisms, being deprived of the matter necessary for their existence, decrease and finally disappear; and (4) that oxygen and ozone have this effect on every microorganism he has ever been able to discover in wounds or suppurating surfaces except the staphylococci, which under these conditions increase in number and often in size. These conclusions are the result of observations and microscopical examinations of the pus from some 500 cases treated with oxygen and ozone. In the foregoing case, before commencing the treatment a specimen of pus was taken from the wound and a culture was made from it for microscopical examination. This was repeated at intervals during the treatment. The microphotographs taken of the slides that were prepared show steady decrease and final disappearance of those microorganisms that are hostile to healing, and a steady increase of the staphylococci which under the influence of ozone and oxygen always increase in number and often in size as the healing process goes on.

Possible Relationship Between the Diphtheritic Affection of Man and Those of the Lower Animals.—L. W. Sambon says that in diphtheria as in plague we are confronted by the difficulties of a complex and intricate epidemiology. As in plague, so in diphtheria, a number of different animals seem to play a more or less important part in fostering and spreading the disease. But in diphtheria, as in plague, one particular kind of animal seems more especially concerned in the wider spread of the disease. In plague the rat, owing to its wide distribution, its great numerical prevalence, its close association with man, and, above all, its migratorial habits, is the true cause of the great pandemics which at various intervals desolate the world. In diphtheria probably a similar rôle is played by the pigeon. The author refers to various classes of animals which suffer from diphtheria. Among these are turkeys, peacocks, guinea fowl, domestic and water fowl, and parrots. He quotes from various authorities as to its occurrence in horses, cattle, sheep, rabbits, mice, dogs, etc. The history of epidemics of the disease seem to prove conclusively the transmissibility of it from man to animals and vice versa. The contagiousness of the disease presents certain limitations. It is frequently confined to a certain locality, and unlike other contagious diseases creeps slowly from place to place. Its conveyance by means of milk and eggs would explain the great frequency of the disease in young children because their food consists almost entirely of these two articles frequently administered to them either in the raw condition or almost raw. It is probably by means of these foodstuffs that the disease is brought into towns, although, of course, it may also be introduced by infected human subjects or by infected animals, especially birds such as the ring dove and the house sparrow. Within recent years the ring dove has become quite common in all the parks and squares of large cities. It may be seen picking the seeds that strew the pavement of cab-ranks. It is quite conceivable that horses and sparrows may contract the disease from these pigeons. It is likewise conceivable that the cat, a natural enemy of the sparrow, may contract the disease from this bird, which is likely to fall an easy prey when paralyzed by the disease. The rôle of the cat with regard to diphtheria appears to be of great importance. This animal after prowling in field and gutter has access to the sanctum of the bedchamber, sleeps on the very bed, is fondled and kissed by the children, especially by the female children. Since 1800, when Noah Webster drew attention to the cat as a factor in the epidemiology of diphtheria, this animal has been noticed to suffer simultaneously with man in almost every outbreak of the disease.

British Medical Journal, April 18, 1908.

Unusual Abnormality of the Finger Tips.—B. Malcolm reports the case of a man in whom there was complete absence of the nails on the thumb, forefinger, middle finger, and radial half of the ring finger. The nail was complete on the little finger, and there was half a nail on the ulnar side of the ring finger. The feet showed a corresponding condition. Naturally the absence of nails gave a peculiar appearance to the fingers and toes. The ends were rounded in every direction, not unlike the appearance of an amputation stump. There was no thickening of the skin on the dorsal aspect of the fingers or toes. The utility of the fingers was very little impaired. A pin was picked up from the floor with ease. The only thing that bothered the patient was the opening of a small pocket-knife; he had to use a coin to open it. The following account with regard to the man's family history, which covers four generations, was obtained. His maternal grandmother had the same condition, and his mother, and two of her brothers and one of her sisters. In the third generation it exists in all the patient's brothers and sisters, and among his cousins on the mother's side. The patient himself, aged 27, has had two children, of whom one, now dead, had the condition, and the other is free from it. It is obvious, therefore, that the abnormality was inherited and is being transmitted to the fourth generation. It will be observed that the defect precisely corresponds to the finger distribution of the median nerve, which supplies the extremities of three and a half outer fingers, and which seems otherwise perfectly normal. The author has not been able to find any similar case in literature.

Hypersensitiveness to Antidiphtherial Serum.—R. Waterhouse reports his own personal experience with the antistreptococcus serum as well as that used against diphtheria. As a result of an injury to the thumb, which became infected, a swelling of the arms and axillary glands with severe constitutional symptoms resulted and antistreptococcus serum was injected with immediately happy results. Eighteen months later a diphtheritic infection ensued, for which antitoxin was given, and in two hours a most distressing urticaria set in, with pain behind the sternum, palpitation, and faintness, but no vomiting. The antitoxin had been injected in the left arm. These symptoms passed off in two hours, and the next day the author felt all right. Four years after the throat became infected with a membranous deposit, probably diphtheritic. Antitoxin was given, this time in the right flank, but again in almost two hours the same urticarial symptom followed, with, in addition, vomiting and throbbing in the head. The interest of these two attacks consists in the short interval between the injection and the onset of symptoms (not more than two hours on either occasion), in the intensity and short duration of the symptoms, in the striking similarity between the attacks as regards time of onset, symptoms, and duration (though the serums used were from different firms and so probably from different horses), and in the fact that on two previous occasions horse serum had been administered to the author without ill effects.

Primary Pneumococcic Peritonitis.—A. Cuff gives the histories of five patients, all of whom came to operation and three of whom died. Localized pneumococcic disease otherwise than in the lungs is more common in children, and a review of the literature suggests that it is rare in adults, though four of the author's cases were adults. His deductions from his own personal experience are: That an acute diffuse or localized peritonitis may be the sole symptom of a pneumococcic infection; that such cases possibly form a considerable proportion of those anomalous cases of peritonitis without visible lesion of any of the abdominal viscera; sudden onset after previous freedom from abdominal trouble, together with the frequent accompaniment of diarrhea, and signs of early systemic poisoning, may perhaps serve to assist in differentiating them from peritonitis caused by other infection; that they may be followed by pneumococcic lesions in other organs of the body; that their prognosis is extremely grave.

Rectal Temperature after Muscular Exercise.—In a series of tables M. Flack presents the results of his observations, which show that the increase in body temperature during hard muscular work is very great and comes on quickly. Thus, a man showed, after a 220-yards dash, a rectal temperature of 100.85° F. in half a minute after the dash was over. Another man showed in one minute after finishing a mile race 102.6°. It is well known, says the author, that many factors, such as food, age, sex, race, external temperature, besides muscular work, are held to play a part in determining the body temperature. It would appear, however, that muscular work is one of the most important. Indeed, Tigerstedt expresses the opinion that, allowing for modification by food and the external temperature, the diurnal variation observed in man is due to a difference in metabolic activity. If this were so we should expect a reversal of the variation in night workers. The observations on this point are somewhat discordant. Tigerstedt thinks this may be due to the difficulty of sleeping during the day owing to the lack of quietude, and perhaps also to the imperfect exclusion of daylight, factors which must certainly alter the quality of the sleep obtained. Galbraith and Sutherland Simpson have shown that such a reversal can be obtained in apes, and exists in night flying birds. Osborne, too, has recently contributed some interesting observations made upon himself during a voyage from Australia to England, the evening maximum of the diurnal variation taking place rather in regard to local time than to that of the starting place (Melbourne). Although his figures do not disprove the existence of a body periodicity, they tend to show the importance of muscular activity in determining the maximum of the diurnal variation.

Berliner klinische Wochenschrift, March 30 and April 13, 1908.

The Activity of Peptic Digestion.—Gross says that most of the methods of pepsin determination in gastric contents are inaccurate, including the Mett capillary tube method. Volhard's method is too complicated for practical application, and Jacoby's ricin method while simple is open to the objection that ricin is not always uniform in composition and is relatively expensive. He himself uses as test substance purified casein, of which one gram is dissolved in a liter of water by the aid of 16 c.c. of 25 per cent. HCl (sp. g. 1.124), heating on a water bath. Into each of a series of test tubes is placed 10 c.c. of this .1 per cent. solution warmed to 39° to 40° C., together with graduated amounts of the gastric contents to be tested. After fifteen minutes in the thermostat a few drops of concentrated sodium acetate solution are added to each tube, the result being the precipitation of the undigested casein. In this way the minimum amount of gastric contents sufficing to digest all the casein in fifteen minutes may be recognized. The unit of digestive power is represented by the capacity to digest 10 c.c. of the casein solution in fifteen minutes so completely that no precipitate is caused by the addition of sodium acetate. In healthy individuals 0.02 to 0.03 c.c. of gastric contents after a meal of three Albert biscuit taken dry and expressed in three-quarters of an hour suffice to cause complete digestion, that is, 1 c.c. of gastric juice has a peptic power of from thirty to fifty units. By means of tests with this method the author reaches the conclusion that Schütz-Borissow's law that the intensity of peptic digestion is proportional to the square root of the time and amount of ferment is unfounded, and that the digestive activity is directly proportional to the time and amount.

A New Diagnostic Phenomenon in Strictures of the Esophagus.—Rewidzoff says that of the two murmurs that may be heard on auscultation of the esophagus, while the patient swallows some water, the first has no diagnostic value, the second, produced by the entrance of food into the stomach, may be delayed in cases of stricture of the esophagus. Often, however, it is heard in its normal time of from six to eight seconds after the first sound, though a stricture is present. If the patient is asked to repeat the act of swallowing without taking any more water and without swallowing his own saliva, the second sound may be heard again and again in cases of partial obstruction of the esophagus by a stricture. The explanation of this phenomenon is found in the fact that the swallowed liquid does not enter the stomach at the first act of swallowing, because of the obstruction caused by the narrowing of the lumen; the succeeding sham acts of swallowing excite further peristalsis of the esophagus and the entrance of more liquid into the stomach, which results in the characteristic murmur. This phenomenon first observed by the author he has named the "residual sound"; its appearance speaks for the existence of a stricture quite independent of the time in which the second esophageal sound is heard; if repeated, the number of repetitions gives an idea of the size of the esophageal dilatation existing above the stricture and the degree of obstruction.

Münchener medizinische Wochenschrift, March 31 and April 14, 1908.

The Treatment of Cardiospasm.—Geissler describes an instrument designed for the dilatation of spasmodic strictures of the cardia, the use of which he considers has advantages over any of the methods commonly employed. The number of these is very large, but the simplest is by means of the introduction of a soft tube having near its end an inflatable balloon. This is to be passed into the cardia and the balloon is then distended by insufflating air. In the instruments as previously designed this bag is of very elastic rubber and tends to bulge into the stomach without exerting much effect on the stricture, but the author has devised a method of construction which causes the bag to maintain its cylindrical form, thus ensuring the maximum of effect at the site of the spasm. Water may be used instead of air for the purpose of distention. The instrument has been found very successful in practice.

Complications After Operations on the Stomach.—Stieda says that the commonest complications after stomach operations are peritonitis, secondary hemorrhage, and gastric distention through atony. To this number he adds another which is rare but which he has observed in three cases. It consists in persistent vomiting due to an extraordinary increase in local reflex excitability. The vomiting is distinguished from that of atony through its being small in amount and frequently repeated, while the stomach is practically empty, and in the absence of any evidence of peritonitis. In one of the author's cases death followed in spite of relaparotomy and jejunostomy. The diagnosis is important since the treatment consists of the administration of narcotics, especially atropine, and if rectal alimentation proves insufficient, in performing jejunostomy.

Accidental Heart Murmurs in Pregnancy.—Link examined 330 pregnant women in reference to this point. Forty-one of them, or 14 per cent., showed the pres-

ence of an accidental heart murmur, systolic in time, best heard in the second left interspace, soft blowing in quality. There was no accentuation of the second pulmonary sound, nor any change in the heart sounds at the apex. After delivery the murmur disappeared in twenty-six cases, twelve patients were not examined, and in three cases the murmur persisted, one of them in a markedly chlorotic patient. Link explains the origin of this murmur by the fact that the heart is crowded upward and forward, which results in slight kinking of the pulmonary artery; its absence in some cases of pregnancy he explains by the individual differences in the size of the gravid uterus, in the condition of the abdominal walls, and in the stature of the patients. Most of the patients examined by him were small in stature. The differential diagnosis between this functional murmur and the murmur of heart disease was made somewhat difficult by the displacement of the heart and the increase in the size of the mammary glands. The maximum intensity of the murmur at the pulmonic area and the absence of accentuation of the second pulmonic sound, however, were decisive and an erroneous diagnosis was made in only two cases.

A Phosphatometer, Phosphoric Acid in the Urine, and Phosphaturia.—Friedmann describes a simple apparatus of his own invention for the quantitative estimation of the phosphates in the urine. It consists of a glass tube in which a measured quantity of urine may be mixed with magnesia mixture. The phosphates are precipitated in the form of ammoniomagnesium phosphates, and the reading taken after twenty-four hours is compared with an experimentally constructed table, which gives the phosphate content in grams per liter. The normal amount of phosphoric acid he has found to average 2.6 grams in the twenty-four hours, the figures for one hundred estimations varying from 1.5 to 3.6 grams. Under the term "phosphaturia" Friedmann understands, not the increased precipitation of phosphates in the urine, such as is noticed in diminished acidity of the urine, in sexual neurasthenia, etc., but actual quantitative increase in the excretion of phosphates in the twenty-four hours. He gives the data in a case observed by him, which could be classified, according to the nomenclature of Teissier, as phosphatic diabetes. The patient's urine contained sugar and an excess of phosphates; the former disappeared on a semi-vegetarian diet, the latter persisted; the nitrogen metabolism was markedly diminished, though crystals of uric acid were deposited in abundance. The author has further noted phosphaturia in chronic affections of the bones, in chlorosis, in oxaluria, and in some cases of so-called uric-acid diathesis. On the other hand, the excretion of phosphates was diminished in pregnancy, in pernicious anemia, in leukemia, in acute yellow atrophy, and in cirrhosis of the liver. In acute and chronic parenchymatous nephritis, in uremia, and in the nephritis due to congestion a normal amount of phosphates was excreted; in cases of contracted kidney, on the other hand, the phosphates were much diminished.

Deutsche medizinische Wochenschrift, March 26 and April 2, 1908.

Short Exposures in Roentgen Ray Work.—Levy-Dorn in discussing the subjects of Roentgen ray work says that for many purposes, especially for the production of pictures of moving organs, such as the thoracic viscera, it is of the greatest importance to be able to secure adequate exposures in the shortest possible time. Various devices and procedures have been recommended with this end in view, such as special coils, intensifying diaphragms, and the use of exceedingly rapid plates. By aid of such methods Rosenthal has succeeded in securing adequately exposed plates of the thorax in two seconds and of the hip in six. Levy-Dorn is of the opinion, however, that the employment of ultra-rapid plates and of intensifying diaphragms is not to be recommended for the ordinary worker on account of the tendency to produce fogged or indistinct negatives. He then describes a form of apparatus by means of which it is possible to obtain good chest pictures in five seconds and hip pictures in fifteen seconds, with the tube at a distance of from fifty to sixty cm.

An Unusual Case of Castration.—Stieda describes a case of this sort presenting several remarkable features. The patient was a man of thirty-six years, who lost his testicles at the age of fifteen years as the result of an act of barbarity perpetrated by three men. Two of these held him while the third squeezed the testicles between his fingers until they were entirely crushed, the procedure lasting an hour. When the swelling and pain caused had subsided he was no longer able to feel any trace of the testicles and the genitals did not develop further. No beard appeared, the voice did not change, but at his nineteenth year he began to grow rapidly, and whereas he had formerly been small and puny he now is 175 cm. in height and is correspondingly broad and heavy. His sexual ability is good and he has satisfactory erections, which permit him to have coitus normally, except that the amount of ejaculated fluid is small. He married at the age of thirty, but has no children. The larynx is small and there is hypertrophy of the mammary glands. The pubic hair resembles the female type in its arrangement. A characteristic feature is the length of the bones of the extremities, which continue to grow longer in castrated individuals than normally owing to the late ossification of the epiphyses.

Cervical Ribs and Trauma.—Franck says that up to 1894 there were only eleven cases on record in which the diagnosis of cervical rib was made during life though the anomaly had been discovered after death in ninety-five cases. Since that time, however, the recognition of this condition has been more frequently reported, and in 1898 twelve cases treated by operation were described by Fick. Kuester has pointed out that accidents sometimes lead to the first occurrence of symptoms due to the deformity, a view shared by Franck. The fact that the patient may first have his attention called to the presence of the rib after some accidental trauma has a bearing on the subject of accident insurance, and he describes a case in point. The patient while carrying two pails of milk by the aid of a yoke was injured about the left shoulder through slipping of the yoke. As a result there were pain, paresthesia, and atrophy in the left arm, and Roentgen ray examination demonstrated the presence of a cervical rib. As the symptoms did not subside the accessory bone was removed by operation with almost, but not quite, complete relief. The patient claimed accident indemnity, which was accorded on the ground that if it had not been for the trauma she would not have suffered from the existence of the abnormality.

Resection of the Pancreas.—Ehrhardt says that gastric and intestinal surgery has now reached such a point of development that pancreatic operations are possible with good chances of success. So far about forty or fifty cases are on record in which larger or smaller portions of the gland were removed for primary or secondary new growths. The inaccessible position of the organ and its close relationship to numerous large vessels, such as the portal vein, vena cava, superior mesenteric vessels, and the pancreatico-duodenal vessels render removal of portions of a distorted and diseased gland exceedingly difficult. While the danger of diabetes or of disorders in fat digestion is not very great after these operations, a real peril is formed by the changes taking place in the cut surface through the action of the secretions of the gland itself. The author describes two cases in which he successfully removed considerable portions of the pancreas for malignant involvement secondary to pyloric carcinoma, the patient surviving the operation five months in the one case and over one and a half years in the other.

French and Italian Journals.

Adenomata and Cysts of the Parotid.—P. Lecene says that adenomata of the parotid are little known. They resemble the mixed tumors of the gland. They are encapsulated, and can be enucleated, and are adherent to the glandular tissue. They generally contain cystic cavities lined with cubical epithelium. They are of small size, and contain several varieties of tissue—muscular, cartilaginous, mucous, and embryonal connective tissue. They are slow in development and do not give pain, but should be removed on account of their tendency to malignant degeneration. The author has made examinations of four cases of cyst of the parotid, and finds that the tissues are not typical of the gland, but show the cysts to be congenital branchiogenic cysts. The treatment is removal.—*Revue de Chirurgie,* January, 1908.

Diagnosis of Acute Miliary Tuberculosis.—A. Ceconi says that in acute miliary tuberculosis it is almost impossible to aid diagnosis by demonstrating the presence of the bacilli in the blood. Serodiagnosis and culture experiments also fail to aid us. But there are several symptoms that are of diagnostic value in these cases. They are dyspnea, polipnea, paroxysmal cough, and cyanosis, combined with frequency of the pulse. In abdominal typhoid, we should have digestive symptoms, swelling of the spleen, and the peculiar course of the fever to differentiate the disease. The pulse in tuberculosis will be small and very soft, while lacking dicrotism. The arterial pressure is diminished, and the rapidity of the pulse is out of proportion to the rise of temperature.—*Il Policlinico,* November 19, 1907.

Book Reviews.

THE INTERNATIONAL MEDICAL ANNUAL. A Yearbook of Treatment and Practitioners' Index. By Thirty-three Department Editors. Twenty-sixth Year. New York: E. B. Treat & Company, 1908.

THIS excellent work, by a process of national selection, has now become the recognized yearbook to which one turns for a record of all that is new in medical science. The plan of the work remains the same as in previous editions. The first part is a Dictionary of Materia Medica and Therapeutics, wherein are noted, in alphabetical order, all the new drugs of the year, and the new uses to which some of the older drugs have been put. The second and largest part is a Dictionary of Treatment, including a review of medical and surgical progress. After a cursory review of the progress during the year in the several departments and specialties, the various diseases, medical and surgical, are taken up in alphabetical order, and whatever is new in relation to them—especially their treatment—is noted. In the third section, the advances in sanitary science are recorded.

THE PRODUCTION AND HANDLING OF CLEAN MILK. By KENELM WINSLOW, M.D., M.D.V., B.A.S. (Harv.). Formerly Instructor in Bussey Agricultural Institute and Assistant Professor in the Veterinary School of Harvard University. Author of a Textbook on Veterinary Materia Medica and Therapeutics, Chairman of the Committee on Milk of the Washington State Medical Association, etc. New York: William R. Jenkins Co., 1907.

THIS is a very well written, simple, and practical guide, of use to the health officer in teaching him what to demand of the milk producer, and to the dairyman in showing him how he can with slight additional expense meet the demands of the sanitarian. It treats of the significance of germs in milk, of the composition of milk and cream, of the cow and her care, of milking, and of the handling and distribution of milk, and of milk infection. An interesting and practical chapter is one on the cost of producing and distributing clean milk. In this the author holds the somewhat novel view that the responsibility for dirty milk rests mainly and finally upon the consumer who is unwilling to meet the increased cost of producing clean milk. "When the public is sufficiently aroused to the evils of consuming unclean milk," he says, "and evinces willingness to pay for clean milk, there will be no difficulty about production." He strongly opposes pasteurization, but apparently confuses it with sterilization, or at least has a very hazy notion of its effect upon the nutritive quality of milk. Nevertheless, he regards it as necessary in the case of dirty milk. The illustrations are numerous and good. The work is to be welcomed by all who believe that the final solution of the milk problem lies in the education of the farmer and of the handler of milk.

MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By CHARLES LYMAN GREENE, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota; Attending Physician, St. Luke's Hospital, the City Hospital, and the St. Paul Free Dispensary, etc. Second Edition. Revised, with 7 Colored Plates and 241 Illustrations. Philadelphia: P. Blakiston's Sons & Co., 1907.

THE good opinion which we expressed of this book when it appeared in the spring of last year has been justified by the reception accorded it by the profession. The call for a second edition within seven months of the date of publication is an evidence that the work has met a want. There are naturally few changes called for in so short a period, and practically the only addition of importance is a description of the opsonic technique. This is illustrated with some excellent pictures. The word opsonin is said to come from the Greek word *orhsopo*, which is rather the worst of the many weird etymological efforts in relation to the word that we have yet seen. In general, however, the book is quite free from typographical errors.

AUSCULTATION AND PERCUSSION; Together with the Other Methods of Physical Examination of the Chest. By SAMUEL GEE, M.D., Fellow of the Royal College of Physicians, Honorary Physician to H. R. H. the Prince of Wales, and Consulting Physician to Saint Bartholomew's Hospital. Fifth Edition. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1907.

IN the limited sense in which the author has treated his subject, this excellent little book is both complete, and, at the same time, has the advantage of brevity. Part First is given over to a careful record of the terms used in physical examination of the chest, and a clear and concise description of these terms. The author has very properly followed in all essential particulars the classification and terminology of Laenec. Therefore, there is a striking simplicity of definition and an attempt at return to a standard nomenclature, which is edifying and refreshing. Many points in the physical diagnosis of the chest, which the practitioner is apt to forget, are forcibly brought out, and while, from the nature of the subject, there can be little or nothing really new, one can only with advantage and profit spend the few hours necessary to read over this author's excellent review of the subject.

Part Two is taken up with a practical application of the doctrines and methods which the author has exploited in Part One. This division of the work is quite as clear and concise as the former. It is questionable whether the author in such a work has done wisely to omit a brief discussion at least of some of the newer methods of physical diagnosis of the chest, which have in recent years been made possible by the Röntgen rays. The book is well indexed, and is published in a most convenient form and size.

MATERNITY. By HENRY D. FRY, M.D., Sc.D., Professor of Obstetrics Medical Department of the Georgetown University; Obstetrician-in-Chief Columbia Lying-in and Georgetown University Hospitals; Gynecologist to Garfield Memorial Hospital, etc. New York and Washington: The Neale Publishing Company, 1907.

ON the wrapper surrounding the volume we are informed that this is "a book for the lay reader, the medical student, and the trained nurse." For the medical student it is certainly far too elementary to have any value at all. As a book to be placed in the hands of the prospective mother, it may possibly serve some purpose in supplying the information which she should have. But even for this class of reader there is much that is of no value; for instance, the references to pregnancy and labor in the Book of Genesis, the statement that cesarean section was practised by the Israelites, and that women in labor were "assisted by being hung head downwards and shaken, then rolled upon the ground and trampled under the feet * * * finally the infant was destroyed, cut up, and extracted by instruments." This may be interesting, but it is hardly healthy reading for a pregnant woman; indeed, the author says on page 95 "harmful to a degree are the visits of officious friends, who terrify her by the recital of horrible complications and difficult labors and the birth of monstrosities." The book needs considerable pruning before we would care to recommend it to any expectant mother.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine, and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eighth Revised Edition. Philadelphia and London: W. B. Saunders Company, 1907.

THE distinguishing feature of Anders' Practice, and the one which has made it essential to any complete medical library, is the attention given to the Symptomatology and Diagnosis. The sections devoted to these subjects are elaborate and of peculiar value, and even in the first edition stamped the work as one of service, despite the slight tendency to therapeutic nihilism, which was the fashion in medical teaching a decade ago. This fault has been gradually corrected in the successive editions, and now the work may be recommended as a safe therapeutic, as well as diagnostic guide. A number of new subjects are treated of in this edition, and the important section on animal parasitic diseases has been thoroughly revised, a number of the articles having been entirely rewritten.

VERHANDLUNGEN DER DEUTSCHEN LARYNGOLOGISCHEN GESELLSCHAFT auf dem II. Versammlung Sep. 15-18, 1907. Herausgegeben von Dr. Med. Georg Avellis. Berlin: Curt Kabitsch, 1908.

THIS volume of transactions of the recently organized national society of German rhinologists and laryngologists opens with an obituary notice of the late Prof. Moritz Schmitz, who was its president at its inaugural meeting, and did much to give the organization a flourishing start. Then follow the usual executive business sections, and lastly come 34 papers on scientific topics. The book closes with the usual lists of members, etc. As most of the papers have appeared in abstract in the current journals of this special branch of medicine, and some of them have been published in full, no special comment is here needed. As especially noteworthy, we may mention the following: Kuttner, "Laryngeal Tuberculosis and Pregnancy"; Heymann, "Division of the Nasal Accessory Sinuses"; Saenger, "Asthma Therapy"; Hoffman, "Osteoplastic Operations in Chronic Frontal Sinus Disease"; Rosenberg, "Cold Abscess of the Larynx"; Blumenfeld, "Adenoid Growths and Intrathoracic Glands," and Hajek, "Accidents of Antral Puncture."

Society Reports.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-fifth Annual meeting, held at Knoxville, April 14, 15, and 16, 1908.

THE PRESIDENT, DR. A. B. COOKE OF NASHVILLE, IN THE CHAIR.

THE Association met in the Circuit Court Room of the Court House.

Addresses of welcome were delivered by Hon. John M. Brooks, Mayor of Knoxville, on behalf of the city, and by Dr. H. H. McCampbell, on behalf of the Knox County Medical Society, which were responded to by Dr. W. D. Haggard of Nashville.

Medical Organization; Its Purposes and Possibilities.—PRESIDENT COOKE, in selecting this subject for his address, pointed out that the purposes of the Association were to federate and bring into one compact organization the entire medical profession of the State and to unite with similar associations in other States to form the American Medical Association, with a view to the extension of medical knowledge and the advancement of medical science, to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their medical interests, and to the enlightenment and direction of public opinion in regard to the great problems of State medicine, so that the profession shall become more capable and honorable within itself and more useful to the public in the prevention and cure of disease and in prolonging and adding comfort to life. As to the possibilities of medical organization, the present scheme of reorganization was only six years old, and yet in that short time the advantages which had been realized were so positive and definite that the promise for the future seemed bright. To those who believed in the soundness and equity of a representative form of government, the plan whereby the county society was made the unit of organization must commend itself as both wise and just. The great underlying purpose of all medical organizations was to reach the individual physician, to cause him to realize that he had other responsibilities and duties than those which pertained to his immediate clientele, to broaden his mental vision, to awaken him to the fact that association with his fellows would enable him to mold public opinion and wield an influence in the affairs of men which were not possible in any other way. Systematic effort to reach the individual physician and induce him to affiliate with his local society, and in the possibilities embraced in such affiliation, he found one of the strongest defences of the present scheme of organization.

Laceration of the Perineum.—Dr. C. E. RISTINE of Knoxville read a paper on this subject, in which he described the basic principle of a new operation for secondary repair of complete laceration of the perineum.

Ophthalmia Neonatorum.—Dr. HILLIARD WOOD of Nashville referred to the prevalence of ophthalmia neonatorum before the introduction of Credé's prophylaxis and its reduction by the judicious use of a solution of silver. The percentage of blind in the Tennessee School for the Blind from this disease was referred to, and the author emphasized the necessity for a more determined effort to prevent blindness from this cause.

Dr. M. M. CULLOM of Nashville said the method of using solutions of silver was simple, and could be employed by any practitioner, and the use of the silver salts, whether nitrate of silver or the newer salts, should be adopted, in his judgment, as a routine measure.

Dr. LOUIS LEROY of Nashville said that when the disease was once established there was infiltration of the deeper layers of the cornea by the gonococcus. When the child was just born, however, there was no infiltration of the corneal tissues. The gonococci were present on the surface, and for that reason nitrate of silver would kill them as effectively as any of the other newer preparations.

Dr. S. S. CROCKETT of Nashville had not been able to determine always when there was a purulent infection of the eyes, and, while he had been practising many years, and had done considerable obstetric work, he had never seen a case of ophthalmia neonatorum. He doubted very much whether every practitioner doing obstetric work could be induced to use nitrate of silver in the eyes of every baby just born. He doubted its practicability.

Dr. JERE L. CROOK of Jackson thought the members should place themselves on record as favoring, advocating, and personally practising the instillation of a 2 per cent. solution of nitrate of silver, as recommended by Credé, in every case.

Dr. A. F. RICHARDS of Sparta agreed with Dr. Leroy as to the preference for nitrate of silver solution to the other salts.

Dr. CHARLES P. MCNABB of Knoxville believed that if practitioners would wash the eyelids and eyelashes of newborn babies with sterile water there would be no, or less, ophthalmia neonatorum. A 2 per cent. solution of nitrate of silver did not, or would not, kill pyogenic bacteria.

Dr. G. E. VAUGHAN of Clarksville spoke of regulating the practice of midwives, saying they were the cause of most of the cases of ophthalmia neonatorum.

Dr. G. M. BURDETTE of Lenoir City had not had more than one case of ophthalmia neonatorum during a long practice. This case was treated with nitrate of silver, but it took six weeks to get rid of the infection. He used sterile water invariably in washing the eyes of babies. He could not support the indiscriminate use of nitrate of silver solution.

Obstruction of the Ureter.—Dr. M. C. MCGANNON of Nashville described an interesting case of obstruction of the ureter, and an operation which he had performed for its relief.

Treatment of the Stump of the Appendix.—Dr B. MERRILL RICKETTS of Cincinnati, by invitation, said that much had been said and written about dealing with the stump of the appendix without any very definite conclusions being drawn. The dangers resulting from imperfect technic may be great. He sent letters of inquiry to surgeons of more or less experience, requesting a description of the method used by each. Sixty-four replies were received, representing 80,251 operations, among which about sixty cases of hemorrhage from one or more branches of the vessels of the appendix were reported. Twenty lantern slides were presented to illustrate the various methods of ligating the stump. His conclusions were that simple ligature with silk was the quickest and safest method.

Practical Deductions in the Diagnosis and Treatment of Appendical Infections.—Dr. W. D. HAGGARD of Nashville summarized by saying (1) that the treatment of appendicitis should be surgical operation in all well-marked cases as soon as the diagnosis was made within the first twenty-four or forty-eight hours, if possible. (2) Immediate operation in cases which had apparently been doing well, but suddenly had a chill or a drop in temperature, with rise of pulse. If vomiting returned after having stopped, or if inflammatory pain reappeared after the original seizure had abated, or from any cause perforation or gangrene was suspected. (3) Moderately severe cases seen on the third, fourth or fifth day, who had not had the benefit of early operation, and especially if there was any special contraindication to operation, were given their best chance by the Ochsner method. (4) Cases seen when the process was distinctly abating were treated in the above manner, and operation deferred until the attack had completely subsided. (5) Cases with

well-defined abscesses seen on or about the end of the first week could often be watched a few days if there was any opportunity of the abscess becoming adherent to the abdominal wall. If this occurred, adhesions were quite competent at the end of the tenth day, and evacuation should be practised, but the appendix left alone, unless it was easily seen, and very accessible in the abscess cavity. (6) In general peritonitis a short operation with quick removal of the appendix, no irrigation, a large glass tube in the pelvis above the pubes, the patient in the Fowler position, and the bloodwashing, continuous enema of salt solution, was the best treatment. Where the abscess was not adherent to the abdominal wall, the entire field should be walled off with gauze before opening and sponging it dry. Irrigation should not be used. (7) Cases after one attack were safer with operation in the interval than to wait for another attack. (8) If the interval had been allowed to elapse without operation, and the second or third attack should become inaugurated, operation in the first few hours of the attack, while the infection was still confined with the lumen of the appendix, was about as safely treated with immediate operation as with operation in the interval. Moreover, all of the dangerous possibilities of that attack were cut short.

Colic.—Dr. W. J. Breeding of Ravenscroft, in a paper on this subject said, among other things, that if the profession would only realize that at least ninety pathological causes of colic requiring only medical treatment might exist within the abdominal cavity, and that over one hundred serious surgical causes might find expression in colic, physicians would certainly deliberate long before obscuring symptoms by an early resort to the preparations of opium.

Dr. George R. West of Chattanooga said he followed the Wyeth method of treating the stump of the appendix. He narrated a case in which jaundice occurred several times as the result of a postcecal abscess due to a long-standing appendicitis in which the appendix was adherent.

Dr. Louis Leroy referred to colics of nervous origin and to those associated with hysteria, classed vaguely with the ovarian colics. He also mentioned colics due to the habitual use of morphine.

Dr. Jere L. Crook spoke of the simplicity of the Dawbarn method in treating the stump of the appendix.

Dr. A. G. Kyle said he resorted to the Dawbarn method whenever he had a soft appendix to deal with, as it was so simple.

Dr. M. C. McGannon said that tabes dorsalis produced pain about the abdomen which might be mistaken for gall-bladder or appendiceal trouble. Jaundice was very rare as a symptom of appendicitis. There must be some other condition than appendicitis to produce jaundice.

Salicylate of Mercury in the Treatment of Syphilis.—Dr. J. W. Handly of Nashville described the use of intramuscular injections of salicylate of mercury in the treatment of this disease, and said it was applicable in all stages, the intervals being governed by the results obtained. In deep ocular lesions, as retinitis, choroiditis, iritis, he found the deep injections especially effective, particularly when combined with the iodides. To summarize, intramuscular injections were best for the following reasons: (1) Accuracy of dosage. (2) Better control of patient. (3) Secrecy of treatment. (4) No gastrointestinal disturbance. (5) Little tendency to salivation which could be quickly controlled. (6) Patient could not give remedies to other patients, thereby cutting out the other fee of the physician. (7) Patient was not forced to take three doses a day, but one injection every seven to ten days. (8) No smearing over the body with a filthy ointment, a tell-tale bearer to those around him. (9) The greatest good to the patient with the smallest amount of trouble.

Dr. Jere L. Crook had tried this treatment in three cases, in one of which the result obtained was fine. It was very important to get a good syringe for giving the injections.

Dr. Louis Leroy said mercurial injections in cases of syphilis were the surest and infinitely the most rapid method at our command. They did not disturb digestion, and a good digestive system was one of the best assets that a man had in overcoming syphilitic infection.

Snoring, Mouth-breathing.—Dr. G. E. Vaughan of Clarksville said the most frequent cause of mouth-breathing in a child was adenoids and enlarged tonsils. The next was hypertrophic rhinitis, and he called particular attention to this, as it was frequently neglected. The enlarged turbinate was considered frequently to be the result of adenoids and enlarged tonsils, and yet it did not always disappear after their removal. So he was constrained to believe that the enlarged turbinate, adenoids, and tonsils were all the result of some condition, but not always dependent on each other. A grievous mistake was made by not following up cases on which operations had been done for adenoids and tonsils, and seeing to it that nasal obstruction was completely relieved, and normal breathing established.

Treatment and Prevention of Tuberculosis by Tuberculin Immunization.—Dr. William Litterer of Nashville stated that (1) experiments on animals demonstrated the possibility of creating immunity to tuberculosis by the use of the tuberculins. (2) The time was not far distant before individuals showing a tuberculous tendency would submit themselves to the repeated injections of some form of tuberculin as a means of prophylaxis against this disease. (3) The clinical method in the administration of tuberculin was far preferable to the one advocated by Wright, in which the estimation of the opsonic index was essential. (4) Tuberculin therapy was proving an essential aid in the treatment of tuberculosis, especially as an adjuvant to the hygienic, dietetic, and open-air treatment.

Dr. Louis Leroy thought some members of the profession had gone opsonin mad, and had followed opsonic work further than they had been justified in doing. The opsonic portion was simply an attachment to the value obtained from vaccine therapy. The advantage to be obtained from the injection of bacterial products had been known for many, many years, and it was only in casting about for a method to control this that the work of Wright was developed.

Tuberculosis.—The membership of the Tennessee State Committee of the International Congress on Tuberculosis presented a symposium on tuberculosis. Papers were read as follows: "Prophylaxis in Tuberculosis," by Dr. Y. L. Abernathy of Hill City; "Experimental Tuberculous Peritonitis," by Dr. William Litterer of Nashville; "Tuberculosis of the Cervical Lymphatic Nodes," by Dr. W. A. Bryan of Nashville; "How Best to Utilize Our Knowledge of the Communicability of Tuberculosis," by Dr. H. P. Coile of Knoxville; "The Marriage and Intermarriage of Tuberculous Subjects," by Dr. I. A. McSwain of Paris; "Bovine Tuberculosis," by Dr. M. Jacob of Knoxville.

Significance of Uterine Hemorrhage.—Dr. L. E. Burch of Nashville said that every case of uterine hemorrhage should be subjected to an immediate vaginal examination; that in the vast majority of cases this symptom was due to pelvic pathology, and that by carefully considering cancer, extrauterine pregnancy, abortion, endometritis, and fibroid tumors, and then by a process of exclusion, a correct diagnosis could usually be made. When pelvic pathology was discovered, it was generally necessary to resort to surgery to effect a cure.

Movable Kidney.—Dr. William D. Sumpter of Nashville said that the frequency of movable kidney demanded careful examination of position of the kidneys in vague abdominal pain. He spoke of the relation of movable kidney as a causative factor in appendicitis, diseases of the biliary passages, disturbances of the gastrointestinal tract, etc. He discussed the diagnostic methods of examination and the importance of differential diagnosis; palliative treatment, with its results; the indications for operative

treatment; choice of incision; method of fixation of the kidney, and the anatomical and therapeutical results of operation.

Papers were also read as follows: "Retention of Urine in a Female Infant Nine Weeks Old," by Dr. T. J. Happel of Trenton; "Some Symptoms produced by Appendicitis," by Dr. W. A. Bryan of Nashville; "Herniotomy," by Dr. George R. West of Chattanooga; "Conservative Surgery in Crushing Injuries," by Dr. Jere L. Crook of Jackson; "Diseases of the Frontal Sinus and Their Surgical Treatment," by Dr. C. M. Capps of Knoxville; "Ethics," by Dr. J. M. Kennedy of Knoxville; "Purulent Ophthalmia," by Dr. M. M. Cullom of Nashville; "The Treatment of Detachment of the Retina, with Reports of Cases," by Dr. L. B. Graddy of Nashville, and "Adenoids," by Dr. C. H. Davis of Knoxville.

Officers Elected.—The following officers were elected: *President,* Dr. B. D. Bosworth of Knoxville; *Vice-President for East Tennessee,* Dr. C. T. Carroll of Cleveland; *Vice-President for Middle Tennessee,* Dr. J. W. Brandau of Clarksville: *Vice-President for West Tennessee,* Dr. W. T. Blanton of Union City; *Secretary,* Dr. George H. Price of Nashville, reelected; *Treasurer,* Dr. W. C. Bilbro of Murfreesboro, reelected.

Nashville was selected as the next place for holding the annual meeting; time, second Tuesday in April, 1909.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 2, 1908.

The President, Dr. John A. Wyeth, in the Chair.

This meeting was held under the auspices of the Section on Laryngology and Rhinology.

The Late Dr. D. B. St. John Roosa.—Dr. Charles L. Dana delivered a memorial address on the late Dr. Roosa.

The Diagnostic Value of Symptoms of the Larynx, Pharynx, and Nose in Nervous Diseases.—Dr. Thomas J. Harris read this paper. Affections of the nervous system presented symptoms of value and importance from a diagnostic standpoint in the throat and nose, whether they were true organic affections or only functional disorders such as the so-called neuroses. Of the two, the organic affections were the more important, and showed themselves chiefly in the larynx and were in the form of either sensory or motor disturbances. The motor manifestations represented either an excess or diminution of action. Excess of action was seen in spasms which might be tonic or clonic. Tonic spasms might take the form of spasms of the larynx, laryngeal crises, or ictus laryngus; clonic spasms might take the form of spasms, as rhythmic twitchings, or tremors. When an organic nerve lesion was present, it was most frequently one of diminished action or paralysis. These paralyses might involve the superior or inferior laryngeal nerve. A paralysis of the former was rare, while a paralysis of the inferior laryngeal nerve, almost without exception, involved the cricoarytenoideus posticus at the onset, and only at a late stage, if ever, attacked the adductors. This was a striking fact and its clinical significance was at once apparent. A posticus paralysis had to do with respiration. After a hasty review of the present day views on the innervation of the larynx, he considered how they might make use of them in a practical manner in diagnosis. This applied chiefly to affections of the medulla and below, although it was true that cerebral hemorrhage, tumors, abscess, gummata, and pseudobulbar palsy might produce motor changes in the larynx when extensive enough or properly situated. (1) Tabes dorsalis at times showed symptoms in the nose such as disturbances of the olfactory nerve resulting in anosmia or parosmia, but usually they were limited to the larynx in some form of paralysis. Unilateral or bilateral posticus paralysis might be regarded as characteristic of tabes. In the bilateral form the one symptom was gradually increasing inspiratory dyspnea, with expiration unaffected. Even more interesting were the various forms of laryngeal motor irritations in tabes. These included ataxia of the cords, giving rise to the characteristic scanning speech. (2) Laryngeal crises might occur early in the disease like the palsies, and might even precede the ocular manifestations. The laryngeal crisis was characterized by the simultaneous involvement of all the respiratory muscles, and so differed from an ordinary spasm of the larynx, with the cords immobile in the median line and their free borders taut; this would mean, in all probability, a central nerve lesion. If the picture should change in time to one showing the cords in the so-called cadaver position, *i.e.* midway between inspiration and expiration, with concave borders, they would know that the entire recurrent nerve had been involved, pointing to the progressive character of the lesion in the bulb. Sensory disturbances in connection with tabes were rare. (3) Multiple sclerosis of the brain and spinal cord would produce symptoms in the larynx almost if not quite as frequently as tabes. The common symptom present was a delay in the muscular action. This might take the form of tremor in phonation and an abnormal tendency to voice fatigue. There would be noted also the scanning speech with frequent interruptions by high-pitched explosive sounds. The voice was often raspy or hoarse. Occasionally they met with true paralysis, usually of the adductors. (4) Syringomyelia presented laryngeal symptoms, also motor in nature, and reduced reflex irritability of the posterior pharyngeal wall. (5) Progressive bulbar paralysis was especially characterized by symptoms referable to the tongue, lips, and larynx. The laryngeal symptoms did not appear with any such constancy as did the symptoms referable to the tongue. (6) Progressive muscular atrophy very commonly showed symptoms in the larynyx or pharynx, and these were usually of the nature of a paralysis, either of the entire throat and larynx, or more often of the larynx. (7) Neuroses, the functional nervous affections, often showed themselves in the upper air passages, and the two most commonly met with were paralysis agitans and hysteria. Paralysis agitans in a considerable number of cases gave rise to laryngeal symptoms, and usually of a motor character. In hysteria, nose and throat symptoms were frequently met with, and these might be either sensory or motor. Sensation was often affected. (8) Anesthesia of the mucous membrane of the nose and pharynx was frequent. The septum was wont to escape as well as the larynx. (9) Hyperesthesia and analgesia of the pharynx was quite frequent and took the form of a choking sensation, tickling, feeling of a foreign body, and the familiar globus hystericus. (10) Disturbances of coordination during phonation were common. Dysphonia spastica was the term used to describe the spastic form here. After considering a few other conditions which gave symptoms in the upper air passages, Dr. Harris concluded that two things had been shown, viz., (1) that pharyngolaryngeal symptoms in nervous diseases were deserving of more attention on the part of the neurologist than they had received up to the present time; (2) that no field offered greater opportunity to the laryngologist for original sudy and research than that which embraced the innervation of the larynx.

The Diagnostic Value of Symptoms of the Upper Respiratory Tract in Syphilis and Tuberculosis.—Dr Francke H. Bosworth read this paper. Tuberculosis of the nose was a clinical and pathological curiosity: many such cases had been reported in which the local disease in the nasal passages seemed to have connection with some serious lesion in the parts below. Tuberculosis in the lower pharynx, larynx, and buccal cavity was mainly of interest in the fact that it gave a certain clinical insight into the virulence of the disease. Clinically, it was observed that, as a rule, the nearer the tuberculous process involving the upper air tract approached the external world

the more virulent and hopeless the disease seemed to be. Thus, the fatality of laryngeal, pharyngeal, and lingual tuberculosis seemed to show an increasing ration of gravity in the order given. When, however, the manifestations of syphilis were considered, there was an entirely different story, and one in which the diagnosis was based upon ocular inspection. Syphilis was one of the most curious diseases with which they had to deal. The germ made its way into the system in such a way as not to leave a trace of the portal of entry. It lurked in the blood for months, oftentimes for years, giving no evidence of its existence, without causing any impairment of health, gaining strength year by year, and finally manifesting itself by some grave lesion which was commensurate in the large majority of instances with the length of time which had elapsed since the invasion. Its manifestations were often obscure and misleading, rendering a definite diagnosis impossible in many cases. This was undoubtedly true of other regions of the body, but when it invaded the mucous membrane of the upper air tract, it pursued, in the majority of the cases, a regular and orthodox course. This consisted merely in the invasion of the tissues by inflammatory corpuscles. The mucous patch was the result of the deposit of these inflammatory corpuscles in the epithelial layer of the mucous membrane, and occurred five or six weeks after the primary sore, or even longer. Later occurred the superficial ulcer; this resulted from a coagulation necrosis and involved the epithelium and the mucosa, and appeared as the shallow, ovoid ulcer, with necrotic tissue and purulent secretion. In gumma the deposit was not only in the epithelium and mucosa but in the submucous tissues beneath. These manifestations of syphilis in the nose, fauces, and larynx ran a somewhat different course. A primary sore occurring in the nose was a curiosity. The nasal cavity was the home of the gumma, but it was rarely observed owing to the fact that the necrosis and deep ulcers followed so rapidly that the gumma did not come under observation. Necrosis of the nasal bones was almost pathognomonic of syphilis and he said he could recall but one case of necrosis of the vomer which was not due to this disease. It was a view entertained by many that syphilis was a progressive disease, but Dr. Bosworth considered it an explosive one. The poison lurked in the system for months, gathering strength, virulence and activity, without manifesting itself in any form until finally it suddenly invaded one of the tissues of the body depositing these inflammatory corpuscles. Then it became for the time being a local disease; the gumma in the nose broke down into deep ulcers involving the whole mucous membrane as well as the periosteum. The sequestrum became wedged in, held firmly in the nasal cavity, and became a source of irritation, crust formation, fetid discharge, malodor, etc. The larynx was a favorable seat for the study of syphilis; the diagnosis was oftentimes very difficult. In the majority of the cases they had to do in the larynx with what he called "laryngitis deformans," an irregular thickening of the mucous membrane, with cicatricial sequelæ which seriously impaired the function of the larynx, and which presented appearances which were often puzzling. The manifestations of syphilis in the lower pharynx, faucial pillars, tonsils, palate, and uvula ran a regular course, and presented no eccentricities, and developed, as a rule, no deceptive appearances. Here appeared the "Dutch garden aspect." From a clinical point of view, it was a rather curious feature of syphilis that it manifested no marked tendency to transcend anatomical boundaries. Syphilis of the nose very rarely extended to the skin in front or into the pharynx behind. Syphilis of the lower pharynx very rarely extended above the border of the soft palate or the larynx below, while syphilis of the larynx, even more than cancer, showed a disposition to remain a laryngeal outbreak. In conclusion, he said he wished to emphasize the following: (1) The pharynx, beyond all other regions of the body, was a favorable site for the study of syphilitic outbreaks, and the one which, less than other regions, the disease was less liable to be mistaken. (2) The hesitancy of syphilitic outbreaks to transcend anatomical boundaries. (3) The fact that an outbreak of syphilis was self-limited, and showed no tendency to extend. The explosive theory of syphilis was one he believed to be worthy of consideration.

The Diagnostic Value of Symptoms of the Upper Air Tract in Rheumatism, Gout, and Diabetes.—Dr. Emil Mayer read this paper. He said that the first and most important relation of the upper air tract in rheumatism was the etiological factor. It was now generally accepted that rheumatism was a disease of the infectious type, and that some form of streptococcus was responsible, and there was a practical unanimity of opinion that the entrance into the system was obtained by way of the mouth through some part of the Waldeyer ring. The manner of entry was described. The various disease germs that found lodgment in the mouth found a general resistance to their attack by the bacteria of health. Reinforcements arriving to the attacking party, or a break in the epithelium, caused a portal of entry, and the lymph spaces were entered, then the glands, and infection ensued. There was a difference of opinion as to the entry of disease through any part of the mouth; also, as to whether the main point of entrance was the pharyngeal tonsil. Dr. Mayer quoted authorities to show that infection did arise by way of the faucial, pharyngeal, and lingual tonsils; in the majority of instances it originated in the pharyngeal tonsil. He also presented the negative side. He called attention to the fact that rheumatism, once established, might present itself as such in the pharynx and larynx, and that distinct rheumatic affections of the cricoarytenoid articulation had been shown to exist. Laryngologists had frequently made a diagnosis of a rheumatic affection of the upper air tract, subsequently eliciting a history of rheumatism. He called attention to the possibilities of symptoms of acute rheumatism caused by the presence of an abscess of the antrum of Highmore. Practically all that had been said of rheumatism applied to gout, except that in the latter there was a concurrent condition in the nose of a vasomotor type. These had been variously labelled as due to a lithemic or gouty diathesis. In regard to diabetes, there was an interesting chapter in the record of a few cases in which the sole complaints were a dryness in the throat and early fatigue in the use of the voice. There was no excessive thirst and no emaciation, and yet sugar was found in fairly large quantities. With a restricted diet, the throat symptoms promptly subsided. Dr. Mayer also called attention to furunculosis and perichondritis of the larynx, and finally to diabetic ulcerations of the throat. He concluded that infection in rheumatism and gout entered the system by way of the mouth, and that the chief point of entry seemed to be the pharyngeal tonsil. Rheumatism might affect as such the nose, pharynx and larynx; gout affected the larynx, but more frequently the nasal mucosa. Diabetes might be discovered very early by painstaking examination in certain laryngeal cases, a late symptom being furunculosis of the larynx, and, possibly, perichondritis. Fatal ulceration of the throat occasionally manifested itself in diabetes.

Dr. Alexander Lambert said that a more unsatisfactory condition in medical diagnosis did not exist than the efforts to distinguish gout from rheumatism. There was no pain in the muscles, joints, or other situations in the body, whatever was the cause, but what was called rheumatism. There were many mistakes made in what symptoms belonged to the disease. Gout and rheumatism were two widly different things, yet both were claimed to show equal manifestations in the tonsils and upper air passages. He believed the reason why most of the cases of rheumatism manifested themselves in the air passages was because most of them were cases of irregular gout. Gout was an autointoxication from whatever cause. It was to him very

remarkable to hear discussed and insisted upon the tonsillar entrance of rheumatism in the body. For ten years he had been seeking at Bellevue Hospital to learn how many cases of true rheumatism, polyarticular and in the large joints, showed a tonsillar infection, or even a history that the patient had ever had any infection of the tonsils. In those cases of polyarticular rheumatic infection, with involvement of the large joints, it was a very rare thing to find a history of tonsillar involvement in an adult's throat. Cases were occasionally met with pain in the tonsils lasting a few days, later with cardiac involvement, and then a joint infection. But in cases of gout it was rather rare not to find some manifestations in the throat. The cases quoted by Dr. Mayer were those in which the giving of aspirin cured the rheumatic infection, and this to him was of interest because, in Dr. Lambert's experience, aspirin in true rheumatism failed to give relief; whereas, in gout relief followed its administration. Aspirin would clear up a mild attack of gout, and, in severe cases, it would control the pain. In children he believed there were more cases than in adults in which a bilateral tonsillar infection proceeded the other manifestations. This might be due to the fact that the lymphatic tissues in children were better filters and held the infection better than the adult lymphatics did. Since Dr. Mayer had asked him to take part in the discussion, he had taken more than usual care in a large number of rheumatic patients, to see if their throats hurt them, or if there were other physical throat manifestations before the true rheumatism came on, and only such cases with involvement of large joints were taken into consideration. In not a single case this winter, during the past three months, was he able to obtain a confession that the throat hurt, or the tonsils were inflamed, before the invasion of the rheumatic infection.

Dr. William M. Leszynsky said that the larynx received its innervation from the vagus and accessorius nuclei, particularly through the pneumogastric nerve and its branches, any pathological process in the region of the nucleus ambiguus or in the course of this nerve would occasion tremor, spasm, or paralysis of laryngeal muscles. This was known to occur in various affections of the pons and medulla, in tabes, syringomyelia, disseminated sclerosis, progressive spinal muscular atrophy, etc. Moreover, such laryngeal symptoms also arose in the course of paralysis agitans, convulsive tic, asthenic bulbar palsy, and hysteria. In the so-called polioencephalitis inferior, or bulbar paralysis, in which the symptoms were characteristic and essential, the larynx was never affected alone without involvement of the lips, tongue, palate, or pharynx. It would thus be seen that all degenerative or inflammatory diseases of the cerebrospinal system were more or less frequently accompanied or complicated by implication of the bulbar nuclei. The diagnosis of diseases of the nervous system could not be made from the presence of an isolated laryngeal or pharyngeal paralysis. While the latter condition might be highly suggestive, in no sense could it be considered pathognomonic. When laryngeal tremor, spasm, or paralysis was the result of such general disease, other indications would invariably be found. As tabes was the commonest type of organic nervous disorder, his further remarks were limited to this affection. A person might suffer for several years from tabetic laryngeal crises without any of the obtrusive symptoms of tabes, such as incoordination, pains, etc., yet upon examination one might find unmistakable signs of the disease. Such a patient was now under his care. While it was an interesting fact that quite a large number of cases of chronic tabetics had disturbance of the innervation of the laryngeal muscles, in the majority of instances this was of minor importance as compared with other pronounced manifestations. Exceptionally, a laryngeal crisis had been known to terminate fatally. Transitory laryngeal paralysis was rare, in contrast with paralysis of the ocular muscles. In the cervical type of tabes, in which the arms were first affected, laryngeal crises and posticus paralysis with bulbar symptoms were more likely to arise, the lower extremities becoming involved later in the course of the disease. He suggested that loss of knee jerks with preserved muscular power in the lower extremities, and loss of the pupillary light reflex with preserved vision, when found combined, might be interpreted as presumptive evidence of tabes or cerebrospinal syphilis. It should also be borne in mind that in many early cases of tabes there was no ataxia whatever. Finally, the diagnostic value of symptoms of the upper respiratory tract in the various diseases of the nervous system depended entirely upon the correlation and association with other symptoms.

Dr. L. Duncan Bulkley said that he had seen a great many cases in which the lesions in the mouth were supposed to have been syphilitic, and yet were not; there were at least half a dozen conditions met with in the mouth that made the diagnosis from syphilis somewhat difficult. For instance, eczematous lesions about the lips often suggested a syphilitic affair, and so did lupus erythematosus. Leucoplakia in the mouth was often thought to be syphilitic, although this occurred almost invariably in smokers. Again, the later lesions of syphilis, supposedly gummatous in character, were often mistaken for epithelioma. With regard to the tonsils being the site of invasion, syphilis of the tonsil, or the primary chancre of the tonsil, was more common than generally believed, and Dr. Bulkley had reported fifteen undoubted cases some years ago, and since then he had seen other cases. Chancre occurring about the mouth was very common; whereas chancre in the nostril was not so common.

Dr. William K. Simpson said he did not believe that the time had come when one should depend entirely upon the laboratory findings; those who worked in the laboratories were just as much dependent upon the clinician as the clinician was upon them. He had not seen any great relation between rheumatism and tonsillitis, and he had made investigations clinically, as Dr. Lambert had, to learn if patients with marked attacks of tonsillitis had ever given signs of rheumatism; and, *vice versa*, whether any patients with acute polyarticular rheumatism had ever had signs of a tonsillitis. He had not met with such instances. Dr. Simpson believed that often general diseases might be diagnosed by conditions occurring in the upper air tract. For instance, a unilateral paralysis of the vocal cords might be one of the earliest signs of an aneurysm. He drew attention to the importance of examining the throat in latent cases of syphilis, in the various neuralgias of the face, and in sinus disease. In cases of supraorbital neuralgia, without any history of a purulent discharge at all, the *x*-ray might show frontal sinus involvement, and operation would enable one to remove a large quantity of pus and clear up the condition. He said it was often a difficult matter to make a clinical differentiation between the various ulcerative lesions found in the throat.

Dr. Thomas J. Harris, speaking in reference to syphilis of the nose, said that he had seen at least three or more cases in which the patients complained only of symptoms usually associated with asthma, such as sneezing, nasal obstruction, and watery discharge. The patients gave no history of syphilis, and were very misleading. In each of these cases the condition was cured by the administration of the antisyphilitic treatment.

Dr. Emil Mayer asked what was rheumatism, and what was gout, and said that, in his paper, he had quoted some of the best writers in the world. Was the invasion by way of the tonsils or the tonsillar ring, or was it not? There was hardly a practitioner he had met that had not, at some time or other, been surprised because his patient had an attack of endocarditis. He recalled the case of a boy whom he had known from birth, and had examined from time to time. To his great surprise, after a fainting attack, he was found to be a victim of endocarditis, and he learned that four or five weeks previously the boy had had an attack of follicular tonsillitis.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held March 23, 1908.

First Vice-President Dr. H. Seymour Houghton in the Chair.

The Correlation of Clinician, Pathologist, and Laity.—Dr. Bond Stow read this paper. He showed in detail the extent to which the clinician was dependent upon the pathologist, and urged upon the physician that it was his duty to avail himself of all the aid that the laboratory could give. It was difficult to understand how physicians had formerly practised medicine without this assistance. The practice of medicine was based upon the fundamental principle of cause and effect. The physician must be skilled in inductive reasoning; he must marshal his facts and reason out his case much as the lawyer did. He held up the ideal of raising the practice of medicine to a science; it was now too empirical. He urged very strongly that the physician should obtain an autopsy whenever possible, especially if there was any doubt as to the cause of death. He showed that in many instances, especially in certain classes of diseases, it was utterly impossible, in the present state of our knowledge, for the physician to state the exact cause of death, and cited the instance of a prominent European clinician, who acknowledged that he had made a correct diagnosis in only 60 per cent. of the cases upon which autopsies had been performed; of course, this was in a selected and obscure class of cases, such as abscess of the liver, miliary tuberculosis, etc. The laity should be educated to understand the value of autopsy work as an aid to the physician in diagnosis. With the symptoms observed at the bedside, the revelations revealed in the laboratory and the post-mortem table, there was a wide field from which to gain facts that would enable the practitioner to avoid repeating his mistakes. The importance of the post-mortem finding should be so impressed upon the laity that, if the physician did not ask for an autopsy, they should demand it.

Dr. Beverly Robinson said that, while he agreed with Dr. Bond Stow as to the importance of pathological findings to the laity as a means of correcting imperfect knowledge and of preventing future mistakes, he thought that at times one must pay attention to the relief of symptoms so long as the knowledge of patnological changes was as uncertain and as unsatisfactory as at present. He had sometimes found in the post-mortem room, despite all available knowledge, literally nothing to account for pain, suffering, and death; again he had seen pathological lesions, multiple and profound, and the patient had lived long years with scarcely a pain or an ache. Again lesions might be present, and yet one could not be sure that they had caused the pain of which the patient complained. In how many cases investigated in the post-mortem room were the lesions discovered to be the cause, immediately or approximately, of the death which has occurred? The limitations of human vision to mere structural defects of pathological origin, as a cause of disease, were misleading. There were instances where, supposedly by reason of what had been found in other advanced cases, certain pathological changes had existed at a certain period during life. Could one prove their existence absolutely? Fortunately for many of the human kind, medicine must always remain a kindly and sympathetic art, and not a science. He had frequented the hospital ward and the post-mortem room for many years, and still affirmed that much could be learned in private practice from patients who did not die and for whom pathological and bacteriological research could avail but little in ameliorating their lot or promoting cure. He was not aware, save in a very few acute diseases that, despite the march of science, we had shortened the duration of diseases by a day's length, nor was he aware of any chronic disease that was really cured by medicine of any kind *solely*. Surgery had done marvelous things in a few cases, but often she interfered at the cost later of ultimate good to the patient. Nature and nature's laws were hard to know, and we were compelled to fall back upon the wisdom that had stood the test of time. One great difficulty in the way of pure science ever getting the best that could be had in therapeutic results was the necessary ignorance of the personal factor in disease. This was all-important in achieving success. He urged the crying need of the aspiring, ambitious men of to-day not to ignore or forget the men of like fiber who had gone before. The old physicians had been "good and true men" and had accomplished not a little. Pathology and the dead house, morbid anatomy and gross pathology, and even microscopical researches were not all new. They had followed others, and others would follow them with still newer processes and newer findings, but much that was old would remain true for many a year, if, indeed, it ever died. He said this was a plea for the honest, observing physicians, who wanted some man to hold up their end a little, and not leave them feeling that unless they lived in the laboratory and dead room there was no truth and usefulness available even to the most painstaking and loyal servant of our great guild.

The Public Hospital System of New York City.—Hon. R. W. Hebberd, Commissioner of Public Charities, spoke on this subject (by invitation). He prefaced his remarks by stating that those present no doubt knew more about the hospital system in New York City than he, and indeed it was a question whether there was a hospital system. He knew of no city under whose government three departments tried to manage the hospitals. The Department of Public Charities, Bellevue and the Allied Hospitals, and the hospitals under the control of the Department of Health all took very much the same class of patients, but as there was no head for the hospital department and no system, the hospitals grew up in spots, leaving certain localities entirely without needed hospitals. Nearly twelve million dollars had been planned to be spent in the Borough of Manhattan. Now Manhattan was not growing as rapidly as the other boroughs, and there were parts of Brooklyn and the other boroughs very much in need of hospitals; consequently there was no logical equity in this way of spending money. The City of London had 20,000 free beds in public hospitals, while New York, which was nearly as large, had less than 5,000. No one knew where the function of one of the departments ended and another began. The Department of Public Charities had been trying to get a hospital for tuberculosis on Staten Island, but the court held that only the Department of Health had the right to look after consumptives; consequently the work was held up. The Mayor two years ago appointed a committee to investigate hospital administration; this committee was now about ready to render its report. As a member of the committee it seemed to him the city should have a hospital department under a single commissioner. This commissioner should be a physician trained in business matters. When physicians had been placed at the heads of departments they had done so remarkably well that it could no longer be said they lacked practical business ability. He said there was no reason why the Board of Health should conduct hospitals any more than that the Police Department should conduct penitentiaries. If there was only one commissioner there would be no friction; he could locate hospitals where they were needed, putting the larger institutions near educational centers, and smaller ones where they were the most needed. They had on Blackwell's Island an opportunity for a great hospital park; this had been neglected. Randall's Island could be made one of the finest properties in

the city for children, when the State took the feeble-minded and dependent children, as it would soon do. He hoped the medical profession and their societies would cooperate in bringing about these reforms.

The Ambulance System of Public and Private Hospitals.—Nathan Bijur, Esq., compared the working of the Fire Department with that of the ambulance system. He related the story of the Irishman who said he preferred to be in a railroad accident to being in a steamboat accident, because, when you were in a railroad accident there you were; but when you were in a steamboat accident, where were you? When you sent in a fire alarm, there you were; but when you sent in an ambulance call, where were you? The fire alarm system was perfect. All alarms went to headquarters, and so minutely was the system worked out, that if a fire was only twenty yards further from one fire house than from another; the nearer one responded. At headquarters they always knew just when the apparatus went out, when it returned, and when it was ready to go again. It was fair to acknowledge that the lack of system in regard to the ambulances was not due to private hospitals. Many people did not know whether to send to a hospital for an ambulance, or where. It should be generally known that ambulance calls should be sent to police headquarters, as this department has several telephone operators, whose special work was to attend to the ambulance calls. The difficulty was that the Police Department never knew whether an ambulance was in or out; whether it had responded to a call, or when it returned. There was also an absence of system in stationing ambulances. There was no ambulance on the entire west side, from Hudson Street Hospital up to Roosevelt, and then none until the Hood Wright Hospital. On the lower east side there were three very near together. No one seemed to be responsible if an ambulance did not respond to a call. If a hospital did not do its duty the ambulance service was taken from it. The fireman always had about the same duties to perform, whereas the ambulance surgeon never knew what awaited him. He had endeavored to draw up a plan for an ambulance service and proposed that there be one head, and that a bureau be established and that the city be adequately districted in accord with the population. The call should come to a central bureau. All apparatus should belong to the city, and all officials be employees of the city. There should be some emergency ambulances and some transfer ambulances for use when there was no great hurry. It was a question whether public authority be vested with this power, but it seemed to him that there was no opportunity for favoritism in this system.

Dr. Theodore C. Janeway said that those in contact with Mr. Hebberd would approve of his plan if Mr. Hebberd would be the Commissioner. He had shown an unusual ability in grasping the features of hospital administration, especially in reference to the educational factor. The only way to secure the best care in hospitals was to locate them in the vicinity of medical colleges. The fact that this subject had been discussed was an omen of what was to come. The profession had a fear of change lest it might affect the interests of the physician. He did not think that the Borough of Manhattan should develop her own hospitals at the expense of the needs of other boroughs. He thought the hospitals in connection with educational centers should receive special attention. If our hospital system was to develop like that of European hospitals, it would be by attracting the best teachers and investigators of the day. He thought that if hospitals were split up into smaller institutions with different heads, they would have poor records. Many medical students were now attracted to Philadelphia because the opportunity for hospital practice was better there than here; there the colleges controlled the hospitals. The profession need not fear a change because more men would be needed than at present; they would be graded and each would have an opportunity to rise to the head; but now no one had such a chance. Medical sentiment should first be educated.

Mr. Ludlum, Superintendent of New York Hospital, continued the discussion (by invitation). He said that the subject had been thoroughly covered and he could only endorse what had already been said. It was a matter of hearty congratulation that this subject had at last been taken up and put in shape so that it could be presented to the Mayor, and it would be a great disappointment if the citizens did not create a public sentiment that would lead to a consummation of the proposed project. The duplication of effort, the numerous managing boards, and the extravagant expenditure indicated that all hospitals should be under one board of management. The Commissioner should be longer lived than one political term. Ten years should be the shortest time that he would hold office. The scope of the commission that was appointed had been widened. The building of a new Bellevue could not be a mistake. Those who recollected the Bellevue Hospital of twenty-five years ago could not believe it possible that the institution was as it was to-day. The public did not appreciate the work of that board. What was needed was centralization. When all hospitals were under one management, or one man, they could have a satisfactory system. What was true of the hospitals was also true of the ambulance service. The city had never had an ambulance service. As many ambulances were maintained by private hospitals they were located arbitrarily. There was no necessary connection between an ambulance service and the hospital. The ambulance service belonged to the city, and not to the hospital. He thought something should be said in favor of the ambulance surgeon, who received nothing but abuse continually. He was a hard worked individual, his work was well done, and deserved the praise of the community. If a private institution wished to maintain an ambulance service, he thought it should be permitted to do so; but it should come into the city system. He hoped that public opinion would carry to a successful issue any recommendations that the commission might make.

Hon. R. W. Hebberd closed the discussion by hoping that the report of the commission could be put into practical operation.

Plea for a Needed Custodial Asylum.—Dr. E. Eliot Harris, Chairman of the Committee on Legislation, read the Armstrong Bill, and asked that the Society use its influence in securing the passage of this measure. The Armstrong Bill provided for the appropriation of $486,000 for a custodial asylum, to be located near Haverstraw. New York City paid 75 per cent. of the State tax for the support of four existing western, inadequate, and not easily accessible asylums. It supported in its own institution 1,100 of the feeble minded, and 1,800 indigent epileptics. The need of this proposed Eastern Custodial Asylum was very pressing; the site selected could be purchased cheaply at present, but would soon be dear, and its accessibility to New York City made it highly desirable. For these reasons a set of resolutions was drawn and sent to each member of the society, asking that he should use his personal influence in securing this much-needed legislation.

Endowed Beds for Physicians.— The announcement was made that Maria L. Campbell had given St. Luke's Hospital $20,000, to be used as an endowment fund for the support of beds for the use of physicians. The use of these beds could be secured by application to the superintendent of the hospital.

Kissing Games Forbidden.—The London County Council has issued an ordinance forbidding children attending County Council schools to play games in which kissing forms a part. The head teachers are instructed to see that such games are discontinued. The reason for the prohibition is contained in a sentence of the ordinance reading: "On medical grounds the practice is considered undesirable."

State Medical Licensing Boards.

STATE EXAMINATION QUESTIONS.

Virginia State Medical Examining Board.

Staunton, December 10, 1907.

ANATOMY.

1. Describe the upper extremity of the ulna.
2. Describe the ligaments of the hip joint.
3. Describe the pectoralis major muscle, giving origin, insertion, actions, and shape.
4. Give the relations of the cervical portion of the left common carotid artery.
5. Describe the phrenic nerve, giving origin, course and distribution.
6. Describe the receptaculum chyli and thoracic duct.
7. Give the structure of the testis, and name its investing tunics.
8. Describe the inguinal canal.

PHYSIOLOGY.

1. What changes does the blood in the pulmonary artery undergo in its passage through the lungs?
2. Describe the pancreatic juice, naming its ferments and describing the part each plays in digestion.
3. In what manner is heat given off from the body and from what sources does the greatest loss occur?
4. What circumstances influence secretion in a gland?
5. Describe vomiting and its mechanism.

CHEMISTRY.

1. What is meant by the terms synthetic chemistry, analytical chemistry, physiological chemistry, quantitative and qualitative analysis?
2. What is meant by the boiling and the melting of a substance? By sublimation? By distillation?
3. What is the chemical difference between ferrous and ferric salts? Give formulæ showing the difference.
4. How does sodium occur in nature? Give formulæ of three sodium salts. Give process for manufacturing sodium carbonate on large scale.
5. What are carbohydrates? How do they differ from hydrocarbons?
6. Explain the composition and manufacture of soap, and state the difference between hard and soft soaps.

MATERIA MEDICA.

1. Name the official preparations of opium and belladonna. Give dose of each.
2. State effect of sodium carbonate and bicarbonate on gastric digestion before and after meals.
3. Define an alkaloid; name six, with dose of each.
4. Give an example of the following, with dose: Antispasmodics, antipyretics, hypnotics, narcotics, emetics, expectorants, diuretics, anthelmintics.
5. Write fifteen lines on the physiological action of alcohol.
6. Symptoms of phosphorus poisoning.

THERAPEUTICS.

1. Mention the therapeutic uses of the syrup of hydriodic acid.
2. What are the therapeutic uses of salol? (b) What symptoms indicate the discontinuance of its use? (c) In what pathological conditions is it contraindicated?
3. Mention the therapeutic uses, external and internal, of nitrate of silver.
4. In what pathological conditions is uva ursi used?
5. Give the indications for the therapeutic uses of hyoscyamus.
6. Give the common name, the dose, and the therapeutic uses of potassium bitartrate.

TOXICOLOGY.

1. Give test for arsenic poisoning.
2. Give symptoms and treatment of carbolic acid poisoning.
3. Give diagnosis and treatment of cocaine poisoning.

MEDICAL JURISPRUDENCE.

1. Give signs of pregnancy at first, and third, and sixth months.
2. Give postmortem evidences of miscarriage.
3. What is the period of gestation in the human family? How is it estimated?

PRACTICE.

1. Distinguish between lithemia and uremia.
2. What functions are at fault in their causation, and to what end should remedial measures be directed?
3. Give cause and clinical symptoms of diphtheria.
4. How, where and in what quantities should antitoxin be administered?
5. What is infantile scurvy? How remedied?
6. Give treatment for delirium tremens.
7. State cause and give treatment for the most common form of malarial fever.
8. Outline prophylactic measures against malaria.
9. Give symptoms and treatment of lobar pneumonia.
10. Give symptoms, and outline management, of a case of paralysis agitans.
11. Give treatment of enuresis nocturna.
12. Give symptoms and treatment for arteriosclerosis.

SURGERY.

1. Describe the operation of excision of the elbow joint, and state when it is indicated.
2. What is lupus vulgaris? Give diagnosis and treatment.
3. Describe every detail in the operation for ligation of the external iliac artery.
4. Give diagnosis and treatment of fracture of the outer third of the clavicle.
5. What is a sprained joint? Give treatment and prognosis.
6. What is rickets? Give causes, symptoms, prognosis, and treatment.
7. There are three classes of knee-joint inflammation: Synovitis, capsular arthritis and osteoarthritis. Differentiate them.
8. You are called to see a patient who is totally unconscious and insensible to pain; there are no movements of any kind. The pulse is slow, the respiration slow and probably shallow, and the pupils either widely dilated or closely contracted, or one pupil contracted and the other dilated. On inquiry, you get the history of a fall or blow on the head, yet the visible evidence of such is slight. What would be your diagnosis and treatment?

OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

1. Describe in detail the certain signs of pregnancy.
2. Give the symptoms and treatment of toxemia of pregnancy.
3. Management of the mother from the beginning to the third stage of labor, and to the fourth day of the puerperium.
4. Name the causes that may give rise to fever during the puerperium.
5. What are the most frequent infective agents, in the causation of pelvic abscesses, mentioning the usual sites of such abscesses?
6. What cogent reasons may be urged for the utmost conservatism in operations upon the tubes and ovaries?
7. Give the most efficient treatment for urethral caruncle.
8. Differentiate spasmodic from membranous croup; treatment of the latter.
9. What diseases are conveyed by cow's milk, and what prophylactic rules should be instituted in such cases?
10. Give the etiology, symptomatology, and differential diagnosis of infantile scurvy.

LARYNGOLOGY.

1. Give symptoms, etiology, prognosis and treatment of œdema of larynx.
2. Define laryngismus stridulus, its symptoms and treatment.
3. Name most common causes, symptoms and the precaution to be taken in opening retropharyngeal abscesses.

RHINOLOGY.

1. Excluding traumatic and local causes, what diseases affecting the composition and circulation of the blood frequently cause epistaxis?
2. Describe objective and subjective symptoms and treatment of postnasal adenoid hypertrophy.

OTOLOGY.

1. For relief of what condition should puncture of drum-membrane be performed by the surgeon?
2. What are the two most frequent causes of deafness? Give treatment of each class.

OPHTHALMOLOGY.

1. Name the respective diseased conditions under which occur, viz.: (*a*) Yellow sclerotic, (*b*) bluish-white or pearl sclerotic, (*c*) an inflamed or injected conjunctiva.
2. Name most common causes and varieties of iritis, with symptoms and treatment.
3. What symptom in eye disease would indicate glaucoma in its early state? Explain importance of its early recognition. What is best treatment, and, if successful, what benefit is to be anticipated?

NEUROLOGY.

1. Give the diagnosis and prognosis of epilepsy.
2. Give definition and commonest causes of multiple neuritis.
3. Give the treatment of migraine (sick-headache).

PATHOLOGY.

1. Explain the difference between degeneration and infiltration.
2. Name the varieties of chronic nephritis, and state how they differ pathologically.
3. What is ascites? State its causes.
4. Name the tumors which have epithelium as a physiological prototype, and state which are malignant and which benign.
5. Explain the difference between puerperal septicemia and sapremia (septic intoxication).
6. Give the nature and origin of pus cells, and the origin of the liquid of pus.

BACTERIOLOGY.

1. Describe the *Streptococcus pyogenes*, naming some of the most important pathological conditions caused by it.
2. Give the bacteriology of catarrhal pneumonia.
3. Give the bacteriology of dysentery.

HYGIENE.

1. In making a qualitative test of drinking water, what impurities should be sought for?
2. What is the duty of the State to persons imprisoned for crime.
3. Give periods of incubation of measles, smallpox, diphtheria, scarlet fever, whooping cough and typhoid fever.

HISTOLOGY.

1. Describe the malpighian body in the kidney.
2. What type of gland is the thyroid? Describe its structure.

EMBRYOLOGY.

1. Describe the fertilization of the ovum.
2. Describe the development of the primitive alimentary canal.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

VIRGINIA STATE MEDICAL EXAMINING BOARD.

Staunton, December 10, 1907.

PHYSIOLOGY.

1. In its passage through the lungs, the blood in the pulmonary artery: (1) becomes cooled; (2) becomes a brighter red color; (3) gains oxygen (about 10 or 12 volumes); (4) loses carbon dioxide (about 7 volumes).

2. The pancreatic juice is a clear, viscid, alkaline fluid, and contains about three per cent. solids.

It contains four ferments: (1) *Trypsin*, which changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; (2) *Amylopsin*, which converts starches into maltose; (3) *Steapsin*, which emulsifies and saponifies fats; and (4) a ferment which curdles the casein of milk.

3. Heat is given off from the body by conduction, convection, radiation, and evaporation of fluid from the surface of the body; also through the urine, feces, and expired air. The greatest loss occurs from the skin.

4. The circumstances which influence secretion in a gland, are: Variations in the quantity of blood supplied to the gland, variations in the nerve impulses conveyed to the gland, various mental conditions, and certain drugs.

5. *Vomiting* is generally preceded by nausea and an increased flow of saliva. Then follow a deep and prolonged inspiration, the closure of the glottis, and fixation of the diaphragm. The abdominal muscles then contract and press the stomach against the fixed diaphragm. The cardiac orifice of the stomach relaxes, the other muscular fibers of the stomach contract, and there is a reversed peristalsis in the esophagus. The *center* for vomiting is in the medulla.

CHEMISTRY.

1. *Synthetic chemistry* is that branch of chemistry which is concerned with the building up of more complex substances from simpler substances or elements.

Analytical chemistry is that branch of chemistry which is concerned with the resolving of more complex substances into simpler substances or elements.

Physiological chemistry is that branch of chemistry which is concerned with the composition and changes in composition of living things, both in normal and abnormal conditions.

Quantitative analysis is concerned with the determination of the quantities of the various components in a given substance.

Qualitative analysis is concerned with the determination of the nature of the components in a given substance.

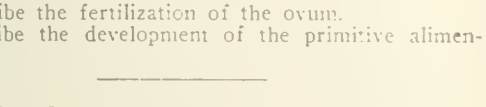
2. *Boiling* is the rapid conversion of a liquid into a gas, at a fixed temperature.

Melting is the passage of a solid body into the liquid state by the action of heat.

Sublimation is the conversion of a solid into a gas (without passing through the liquid state) and the reconversion of the gas into a solid. *Example*:—Sulphur can be sublimed by heating in a suitable apparatus.

Distillation is the conversion of a liquid into a gas, followed by the reconversion of the gas into a liquid. *Example*:—The distillation of water.

3. In *ferrous* salts, the atom of iron is bivalent. In *ferric* salts, the atom of iron is quadrivalent, and two such atoms are connected producing a double atom with a valence of six.



4. Sodium occurs in nature in combination, chiefly as the chloride; also, to a lesser extent, as the carbonate, nitrate, sulphate, etc. Formulæ of three sodium salts:—Sodium chloride, NaCl; Sodium nitrate, $NaNO_3$; Sodium sulphate, Na_2SO_4.

Sodium carbonate is manufactured on a large scale by the Leblanc process or by the Solvay process. In the latter process ammonium bicarbonate and sodium chloride react upon each other with the production of ammonium chloride and sodium bicarbonate:

$$NH_4HCO_3 + NaCl = NH_4Cl + NaHCO_3.$$

The sodium bicarbonate is then dried and heated, when it is decomposed into Na_2CO_3, H_2O, and CO_2.

5. *Carbohydrates* were formerly defined as substances of unknown constitution, composed of carbon, hydrogen, and oxygen; the last two being in the proportion to form water.

Hydrocarbons are compounds containing only carbon and hydrogen.

6. Soaps are the alkali salts of oleic, palmitic, and stearic acids.

They are obtained by boiling glyceryl oleate with sodium hydroxide or potassium hydroxide.

The hard soaps contain sodium; and the soft soaps potassium.

MATERIA MEDICA.

1. OPIUM. *Official preparations, and dose*:—Pulvis opii, gr. j; extractum opii, gr. ss; pulvis ipecacuanhæ et opii, gr. vij ss; acetum opii, ♏viij; tinctura opii, ♏viij; tinctura opii camphorata, ʒij; tinctura opii deodorata, ♏viij; tinctura ipecacuanhæ et opii, ♏viij; vinum opii, ♏viij.

BELLADONNA. *Official preparations, and dose*:—Extractum belladonnæ foliorum, gr. 1/5; tinctura belladonnæ foliorum, ♏viij; fluidextractum belladonnæ radicis, ♏j.

2. Given before meals, they increase the acid secretion of the stomach; given after meals, they tend to neutralize the acidity of the stomach contents.

3. An *alkaloid* is an organic, nitrogenized substance, alkaline in reaction, and capable of combining with acids to form salts in the same way that ammonia does.

Strychnine sulphate, gr. 1/64; morphine sulphate, gr. 1/4; atropine sulphate, gr. 1/150; aconitine, gr. 1/400; apomorphine hydrochloride, gr. 1/10 (as an emetic); quinine sulphate, gr. iv.

4.

Antispasmodic	Tincture of valerian, ʒj.
Antipyretic	Tincture of aconite, ♏x.
Hypnotic	Chloral hydrate, gr. xv-xx.
Narcotic	Morphine sulphate, gr. 1/4.
Emetic	Apomorphine hydrochloride, gr. 1/10.
Expectorant	Fluid extract of squill, ♏ij.
Diuretic	Potassium acetate, gr. xxx.
Anthelmintic	Pelletierine tannate, gr. iv.

5. Alcohol, *externally*, acts as a refrigerant, an astringent, a disinfectant, an anhidrotic; it also hardens the skin. *Internally*, it sharpens the appetite, is a digestant, a diuretic, a diaphoretic, is slightly antipyretic, it increases the force and rate of the heart beat and pulse, it is a vasodilator especially to the vessels of the skin, it causes an increase in the blood pressure, it is at first a slight nervous stimulant, but afterwards is a depressant; in large doses it is a narcotic, and then causes a reduction of body temperature.

6. *Symptoms of acute phosphorus poisoning*: "Eructation of gas having the odor of garlic. The mouth, when observed in the dark, is frequently faintly luminous (phosphorescent). After several hours, pain in the throat, a sense of heat in the epigastrium, nausea, and vomiting. The vomited matters are sometimes bloody, and frequently luminous when agitated in the dark. The abdomen is tender, and there are diarrhea and colicky pains. After one or two days these symptoms cease, there remaining only pain in the back and limbs, and a feeble pulse. Death sometimes occurs suddenly in from two to four days. Usually, about the fourth day, the patient becomes jaundiced, suffers from headache, insomnia, and retention of urine, rapidly becomes delirious and comatose, and dies." —(Witthaus' *Essentials of Chemistry.*)

THERAPEUTICS.

2. *The therapeutic uses of salol* are: As a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera.

(*b*) *Symptoms indicating its discontinuance*, are: Smoky color of the urine like that of phenol poisoning.

(*c*) *It is contraindicated* in acute inflammations of the kidney.

3. NITRATE OF SILVER, is used *externally*, for: Conjunctivitis; granular lids; pruritus of genitals or anus; inflammations of the mouth, pharynx, fauces; orchitis and epididymitis; and to prevent the pitting of smallpox; it is also said to abort bedsores and boils.

Internally, it is used: In chronic gastric catarrh, gastritis, and gastric ulcer; intestinal ulceration, epilepsy, and chorea.

4. *Uva ursi* is used in: Pyelitis, cystitis, urethritis, chronic gonorrhea; and sometimes as a mild diuretic.

5. *Indications for the therapeutic uses of hyoscyamus*, are: Whooping cough, colic, nervous cough, asthma, hiccough, irritable bladder, as an antispasmodic, to diminish secretions, dysmenorrhea, neuralgia.

6. POTASSIUM BITARTRATE. *Common name*, Cream of tartar; dose, gr. XXX;

Therapeutic uses: As a diuretic, in chronic nephritis, to alkalinize the urine, to remove dropsy.

TOXICOLOGY.

1. *Test of arsenic poisoning*: Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

2. *Symptoms of carbolic acid poisoning*: Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark.

Treatment: Emetics, white of egg, stimulants. Alcohol is said to be antidotal.

3. In *cocaine poisoning* there will be found pain and fullness in the head, pulse first quick, later feeble and slow, extremities cold. The symptoms are not constant.

Treatment consists in the administration of ammonia or coffee; morphine, strychnine, chloroform, and ether have all been suggested. The safest plan is to treat whatever symptoms are present.

The *antidote* is said to be amyl nitrite.

SURGERY.

2. *Lupus vulgaris* is a tuberculous infection of the skin; it is generally found upon the face, particularly the nose and cheeks. It begins as a pinkish nodule which is painless, and spreads to other nodules and generally ends in ulceration with destruction of mucous membrane or cartilage. It is to be diagnosed: From (1) *Lupus erythematosus*, which is not supposed to be tuberculous, which is a symmetrical erythema with "butterfly wings," and which does not ulcerate. (2) From *Syphilitic ulceration*, in which the history of the case will help in the diagnosis, the ulcers are characteristic, and respond to syphilitic treatment. (3) From *Epithelioma*, which is more painful, occurs later in life, does not tend to heal, and the ulcer has everted edges.

Treatment. In the early stages the small nodule may be excised. If not seen till later, curettage with a sharp spoon, followed by cauterization with pure carbolic acid, has been recommended. This can be repeated at intervals of three or four weeks if necessary. Finsen light and tuberculin have also been used.

5. A *sprain* is a self-reduced dislocation; generally due to a twist, in which some fibers of the ligaments are stretched or torn, and the synovial membrane contused.

Treatment consists in at once applying cold cloths and compression; the limb should be raised and the joint fixed and firmly bandaged, and kept at rest till the swelling and pain have disappeared. Later on, after the swelling has subsided, hot fomentations and massage are indicated. Passive motion, and later on active motion should be enforced. Adhesive plaster strips placed so as to afford support and fixation without interfering with the circulation in the limb, are recommended.

Prognosis is good, unless complications are present; the chief danger is ankylosis.

7. In *synovitis*, the synovial membrane alone is inflamed; and the other structures of the joint are unaffected.

In *capsular arthritis*, all the structures of the joint (synovial membrane, cartilage, bones, ligaments) are inflamed.

In *osteoarthritis*, besides the involvement of the parts named in capsular arthritis, new masses of bone are formed.

OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

1. *The certain signs of pregnancy* are: (1) Hearing the fetal heart sound; (2) active movements of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical souffle.

2. TOXEMIA OF PREGNANCY. The symptoms are:— "Headache, nausea, and vomiting, epigastric pain, vertigo, ringing in the ears, flashes of light or darkness, double vision, blindness, deafness, mental disturbance, defective memory, somnolence; symptoms easily explained by the circulation of toxic blood through the nerve centers. These may be preceded by lassitude, and accompanied by constipation, or by diarrhea. Headache is perhaps the most significant and common warning symptom. In bad cases the urine is reduced in quantity (almost suppressed), very dark in color, its albumin greatly increased, so that it becomes solid on boiling. Next comes the final catastrophe of convulsions. The convulsive fit begins with twitching of the facial muscles, rolling and fixation of the eyeballs, puckering of the lips, fixation of the jaws, protrusion of the tongue, etc., soon followed by violent spasms of the muscles of the trunk and limbs, including those of respiration; hence lividity of the face and stertorous breathing, biting of the tongue, opisthotonus, etc. The fit lasts fifteen or twenty seconds, ending in partial or complete coma, possibly death; or consciousness may return, to be followed by other convulsions." (King's *Manual of Obstetrics.*)

The line of *treatment* as laid down by Edgar is as follows: For *preventive treatment*: (1) The amount of nitrogenous food should be diminished to a minimum; (2) the production and absorption of poisonous materials in the intestines and body tissues should be limited and their elimination should be aided by improving the action of the bowels, the kidneys, the liver, the skin, and the lungs; (3) the source of the fetal metabolic products and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ.

The *curative treatment* includes: (1) Controlling the convulsions (by chloroform, veratrum, or chloral); (2) elimination of the poison or poisons which are presumed to cause the convulsions; (3) emptying the uterus under deep anesthesia, by some method that is rapid and that will cause as little injury to the woman as possible.

4. The causes that may give rise to fever during the puerperium, are pathogenic bacteria (the chief of which are: *Streptococcus pyogenes, Staphylococcus pyogenes aureus, Staphylococcus pyogenes citreus, Staphylococcus pyogenes albus, Bacterium coli commune, Bacillus pyocyaneus*) introduced into the genital canal of the patient. The most common means of such infection are the hands of the physician, nurse, midwife, or of the patient herself; unclean instruments and catheters; coitus during the time immediately preceding labor; contact with secretions from wounds of any kind, no matter where situated; general unhygienic surroundings, and contact with a patient suffering from scarlet fever or erysipelas on the part of any one attending on the woman.

7. The most efficient treatment for urethral caruncle, is complete excision.

8. *Spasmodic croup* generally comes on suddenly, at night. There is no appreciable fever, no previous malaise or sickness, and often the patient is asleep again by the time the physician arrives. There is frequently a thick tenacious mucus, but neither Klebs-Loeffler bacilli nor streptococci are present. It is entirely a local disturbance.

Membranous croup is either laryngeal diphtheria or a

streptococcus infection. In either case there is a prior stage of malaise, accompanied by chills, fever, and sore throat. The fever may become very high. A membrane forms, in which are found the Klebs-Loeffler bacillus or streptococci.

The *treatment of membranous croup*:—The patient should be isolated, and put to bed; the atmosphere of the room should be kept moist; the diet must be nutritious and easily digested; diphtheria antitoxin should be administered as soon as possible; alcohol, or strychnine, are indicated; local applications either hot or cold will relieve the pain, mild antiseptic solutions in the nose and throat are often used.

LARYNGOLOGY.

2. *Laryngismus stridulus* is a condition found in rhachitic children (generally under two years of age), and characterized by a reflex respiratory spasm of the larynx.

The *symptoms* of laryngismus stridulus are: The child holds his breath, the face becomes congested and cyanotic, the glottis is closed, inspiration is suddenly arrested, and ends in a shrill crowing sound; there may be spasms or convulsions; the attack is sudden, and may be repeated; there is no fever, coryza, nor cough.

Treatment: Cold water should be dashed on the face and chest; ammonia may be applied to the nostrils; an emetic may be administered, bromides or chloral should be given; attention must be paid to the diet and general hygiene of the child.

RHINOLOGY.

1. Some of the causes of epistaxis, dependent upon diseases affecting the composition and circulation of the blood, are: Hemophilia, pernicious anemia, leukemia, scurvy, purpura hæmorrhagica, cerebral congestion.

OTOLOGY.

1. Puncture of the drum membrane is performed for the purpose of relieving blood pressure, or of evacuating the fluid contents of the middle ear, for drainage; it is chiefly indicated in otitis media.

2. The two most frequent causes of deafness are: Inflammation of the middle ear, and impacted cerumen.

OPHTHALMOLOGY.

1. (*a*) A *yellow sclerotic* occurs in jaundice.

(*b*) A *bluish-white or pearl sclerotic* occurs in: Anemia, nephritis, and phthisis.

(*c*) An *inflamed or injected conjunctiva* occurs in: Gonorrheal or diphtheritic infection, in measles, hay fever, catarrhal influenza, coryza; sometimes in meningitis and facial paralysis.

2. May gives the following *varieties* of *iritis*, which also includes the *causes*:

(1) According to its *course*, Acute, Subacute, and Chronic.

(2) According to the *pathological products*, Plastic, Serous, Purulent, and Tuberculous.

(3) According to its *etiology*, Syphilitic, Rheumatic, Gouty, Diabetic, Gonorrheal, Tuberculous, Scrofulous, Traumatic, Sympathetic, Secondary, and Idiopathic.

3. Increase in the intraocular tension indicates glaucoma in any stage; dimness of vision is one of the earliest symptoms.

The importance of its early recognition is that treatment may be instituted at an early stage, and blindness be averted.

The best treatment is iridectomy.

If successful, sight is preserved, the progress of the disease is arrested, pain is relieved, and inflammatory symptoms subside.

NEUROLOGY.

1. *Epilepsy* is diagnosed by the aura, the sudden onset, the cry, the sudden loss of consciousness, the tonic convulsion, the biting of the tongue, the dilated pupils, and the urinary incontinence. In *hysteria*, the patients do not generally, hurt themselves.

Prognosis is not good; some cases may be ameliorated; a few recover, and but few die of the disease; in general, life is shortened by epilepsy.

2. *Multiple neuritis* is an inflammation of several nerve trunks, either simultaneously or in rapid succession.

The commonest causes are: Alcoholism, rheumatism, syphilis, mineral poisons (lead, arsenic, mercury), diabetes, some infectious diseases (malaria, leprosy).

3. The *treatment of migraine*: If possible remove the cause; examine for eyestrain, affections of the nose, indiscretions in diet, and mental and physical fatigue. Rest, in a darkened room, is necessary. The following drugs have been recommended: Phenacetin, caffein, morphine, the bromides, cannabis indica; also electricity.

PATHOLOGY.

1. *Degeneration* is a local order of metabolism, in which the protoplasm of the cell is gradually changed into a new material.

Infiltration is a local disorder of metabolism, in which new material is deposited in an organ or a tissue. The protoplasm of the cell is only affected mechanically.

2. The various kinds of chronic nephritis are the parenchymatous, and the interstitial.

In *chronic parenchymatous nephritis*, "both degenerative and proliferative changes are seen. The tubular epithelium is always more or less affected, showing signs of cloudy swelling, fatty degeneration, desquamation, and disintegration, most marked in the convoluted tubules, but also present in the loops and collecting tubules. The distribution of these changes is usually patchy, giving rise to mottling of the cortex. The lumina of the tubes may be dilated, and contain granular and fatty matters, and hyaline casts, the latter formed by coagulation of exudation in the tubules. The glomeruli may occasionally appear normal, but there is almost always some swelling and hyaline degeneration, together with some proliferation and desquamation, of the epithelium, so that they become highly cellular. Occasionally the glomerular changes may be more marked than the tubular; fatty degeneration of the glomerular and capsular epithelium may be prominent, or there may be swelling, proliferation, and desquamation of the epithelium, or both these changes may be combined. The glomerular vessels may be compressed, their endothelium degenerate, and they may be obstructed by leucocytes or by hyaline thrombi, and finally obliterated. Interstitial changes, though present, are not conspicuous, and consist of edema, and scattered foci of round-celled infiltration about the glomeruli and veins. Sometimes hemorrhages are evident in some of the glomeruli and the corresponding tubules. Lardaceous infiltration frequently accompanies parenchymatous nephritis."

In *chronic interstitial nephritis*, "the lesions are principally seen in the cortex; at first patches of cellular infiltration appear, then the intertubular connective tissue becomes increased and fibrous, with destruction of glomeruli and the corresponding tubules. The glomerular epithelium becomes swollen and desquamates, Bowman's capsules may be much thickened by concentrically arranged layers of nucleated fibrous tissue, and the Malpighian bodies in places may be converted into nodules of fibrous tissue, in others into cysts. The corresponding tubules undergo atrophy with disintegration of their epithelium; here and there multiplication, with convolution of the tubules, may be present, suggesting an adenomatous formation. There is everywhere an increase of the stroma, in the cortex and pyramids, between the tubules, and around the glomeruli and vessels, with pronounced round-celled infiltration or well-formed fibrous tissue, in which calcification may occur. The vessel walls are thickened, chiefly owing to an endarteritis. Lardaceous infiltration may accompany the interstitial nephritis."—(Hewlett's *Pathology*.)

3. *Ascites* is a collection of serous fluid in the peritoneal cavity.

The *causes* are: Portal obstruction, chronic inflammation of the peritoneum, abdominal tumors, cardiac disease, Bright's disease, chronic emphysema, anemia, cirrhosis of the liver.

4. The tumors which have epithelium as a physiological prototype, are: (1) Papilloma, (2) adenoma, (3) carcinoma.

Of these, the first two are benign; and carcinoma is malignant.

5. In *puerperal septicæmia* there is a general infection, microorganisms are present in the general circulation; and there is, of course, a local site of infection.

In *sapremia* there is a general infection caused by the absorption of toxins; but the putrefactive germs do not enter the blood.

6. Pus cells are chiefly leucocytes (generally of the polynuclear variety); some are alive but many are dead and swollen; infecting bacteria may also be present as well as fixed tissue cells.

BACTERIOLOGY.

1. The *streptococcus pyogenes* is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes, and by Gram's method.

The most important pathological conditions caused by it, are: Erysipelas, suppurations, malignant endocarditis.

It is often associated with diphtheria and tuberculosis.

HYGIENE.

1. In making a qualitative test of drinking water, the following impurities should be sought for: Lime, chlorine, nitrates, nitrites, ammonia, iron, lead, copper, pathogenic bacteria (including *Bacillus coli communis*), ova of parasitic intestinal worms.

3. The *period of incubation*, of measles, is ten to four-

teen days; of smallpox, ten to fourteen days; of diphtheria, two to seven days; of scarlet fever, some hours to six days; of whooping cough, four to fourteen days; of typhoid fever, five to thirty days. These figures are all approximate.

BULLETIN OF APPROACHING EXAMINATIONS †

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery		
Arizona*	Ancil Martin, Phoenix	Phoenix	July	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August	4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	14
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	July	14
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	Nov.	11
Georgia	E. R. Anthony, Griffin	Atlanta		
Idaho	W. F. Howard, Pocatello	Boise	October	6
Illinois	J. A. Egan, Springfield	East St. Louis	May	12
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	26
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	4
Kansas	D. P. Cook, Clay Center	Kansas City	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	July	7
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	May	21
Maine	Wm. J. Maybury, Saco	Augusta	July	7
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Battle Creek / Detroit	May	25
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June	2
Mississippi	J. F. Hunter, Jackson	Jackson	May	12
Missouri	J. A. B. Adcock, Warrensburg	St. Louis	June	1
Montana*	Wm. C. Riddell, Helena	Helena	October	6
Nebraska	E. J. C. Sward, Oakland	Lincoln	May	—
Nevada	S. L. Lee, Carson City	Carson City		
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July	13
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	May	19
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	May	21
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	June	—
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June	23
Rhode Island	G. T. Swarts, Providence	Providence	July	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis / Nashville / Knoxville		
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Charleston	July	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Post-Typhoid Tuberculosis.—Ch. Lesieur and L. Jaubert considers it proved that typhoid fever and tuberculosis can coexist at any stage of either disease, but most of the infections that appear after the typhoid patient has begun to convalesce may be considered as infections that existed when the typhoid began, and were stimulated by that disease. Hence, it is only clinically post-typhoid. The prognosis is serious in such cases. The tuberculosis may affect any organs, the bones being frequently affected, the lungs, intestines, and meninges. Tuberculosis of the lungs may occur in any anatomical form. The best division of these cases is into slow and rapid cases, or into early and late tuberculosis. Early tuberculosis appears in the first days of convalescence, the first symptom being incomplete defervescence, and this is a very bad prognostic sign. The temperature rises at evening, anorexia, vomiting, and loss of flesh begin, and physical signs in the lungs soon appear. Evolution is now very rapid. If the trouble shows itself late in convalescence, the same series of phenomena begins, but progress is much slower, and treatment is much more successful. When a tuberculous pleurisy appears, the tuberculosis acts much as an injury would. The first symptoms are a renewed rise of temperature after defervescence of the typhoid fever. An abundant effusion is a factor favoring the tuberculous origin of the pleurisy. Laboratory diagnosis is of great value. The appearance of consolidation at an apex is also an aid to diagnosis. Lymphocytosis is also a characteristic of tuberculosis. The conclusions arrived at by the authors are that we should protect our typhoid fever patients from contact with tuberculous germs by isolation of the patient and the efficient disinfection of the wards.—*La Presse Médicale.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 2, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	482	178
Diphtheria	425	45
Measles	1652	41
Scarlet Fever	855	60
Smallpox	1	—
Varicella	158	—
Typhoid Fever	36	8
Whooping Cough	27	—
Cerebrospinal Meningitis	12	14
Malarial Fever	—	—
Totals	3648	346

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending May 1, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Apr. 4–11	2	..
District of Columbia, Washington	Apr. 11–18	5	..
Illinois, Chicago	Apr. 11–18	4	..
Galesburg	Apr. 11–18	3	..
Springfield	Apr. 9–16	6	..
Indiana, Indianapolis	Apr. 12–19	7	..
La Fayette	Apr. 13–20	1	..
Kansas, Kansas City	Apr. 11–18	20	..
Wichita	Apr. 11–18	9	..
Louisiana, New Orleans	Apr. 11–18	7	1
Maryland, Baltimore	Apr. 11–18	1	..
Michigan, Detroit	Apr. 4–11	4	..
Grand Rapids	Apr. 4–18	3	..
Kalamazoo	Mar. 28–Apr. 11	2	..
Mississippi, Greenville	Feb. 1–29	4	..
"	Mar. 1–31	4	..
Missouri, Kansas City	Mar. 4–18	24	..
St. Louis	Apr. 11–18	3	..
Montana, Butte	Mar. 31–Apr. 7	3	..
Nebraska, Nebraska City	Apr. 11–18	2	..
North Carolina, Charlotte	Apr. 4–18	2	..
Ohio, Cincinnati	Apr. 10–17	9	1
Dayton	Apr. 11–18	1	..
Tennessee, Nashville	Apr. 11–18	1	..
Texas, Fort Worth	Mar. 1–30	38	..
Vermont, New Bury	Mar. 12–18	10	..
Washington, Spokane	Apr. 4–11	1	..
Tacoma	Mar. 28–Apr. 4	1	..
Wisconsin, La Crosse	Apr. 11–18	3	..
Milwaukee	Apr. 4–18	5	..
Racine	Apr. 11–18	4	..
SMALLPOX—FOREIGN.			
Arabia, Aden	Mar. 23–30	..	2
Austria, Vienna	Mar. 28–Apr. 4	1	..
Brazil, Bahia	Feb. 29–Mar. 28	80	..
Pernambuco	Feb. 1–29	..	85
Para	Mar. 28–Apr. 4	1	..
Rio de Janeiro	Mar. 28–Apr. 4	195	70
China, Hongkong	Feb. 22–Mar. 7	62	45
Shanghai	Mar. 8–15	2	3
Ecuador, Guayaquil	Mar. 14–28	..	8
Egypt, Cairo	Mar. 18–25	1	1
Suez	Feb. 18–Mar. 18	8	..
Formosa	Mar. 7–14	5	..
France, Marseilles	Mar. 1–31	..	4
Paris	Mar. 28–Apr. 4	5	..
Germany, General	Mar. 29–Apr. 11	43	..
Great Britain, Leith	Mar. 21–28	..	1
India, Bombay	Mar. 17–24	..	67
Calcutta	Feb. 22–Mar. 14	..	40
Italy, General	Apr. 2–9	19	..
Catania	Mar. 26–Apr. 9	5	3
Naples	Mar. 28–Apr. 4	1	..
Japan, Kobe	Mar. 7–14	56	39
"	Mar. 14–21	34	20
Nagasaki	Mar. 14–22	1	1
Osaka	Mar. 7–14	306	101
Mexico, Aguas Calientes	Mar. 29–Apr. 12	..	4
City of Mexico	Mar. 7–14	13	..
Portugal, Barreiro	Mar. 28–Apr. 4	1	..
Lisbon	Mar. 28–Apr. 4	1	..
Russia, Moscow	Mar. 14–28	88	19
Riga	Mar. 28–Apr. 4	5	..
St. Petersburg	Mar. 14–21	26	2
Warsaw	Feb. 8–Mar. 14	..	34
Spain, Denia	Mar. 21–Apr. 4	20	3
Madrid	Mar. 1–31	..	1
Valencia	Mar. 22–Apr. 5	57	3
Straits Settlements, Penang	Mar. 7–14	2	..
Singapore	Feb. 27–Mar. 7	1	1
Turkey, Smyrna	Feb. 25–Mar. 24	..	13
YELLOW FEVER.			
Brazil, Para	Mar. 28–Apr. 4	5	4
Rio de Janeiro	Mar. 15–22	1	1
Ecuador, Guayaquil	Mar. 14–28	..	5
CHOLERA—INSULAR.			
Philippine Islands, Manila	Feb. 22–Mar. 7	8	7
CHOLERA—FOREIGN.			
Cochin China, Saigon	Feb. 21–Mar. 7	..	Present.
India, Calcutta	Feb. 22–Mar. 14	596	399
Madras	Mar. 14–20	..	8
Rangoon	Mar. 7–14	..	4

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Original Articles.

THE OCCURRENCE OF EPILEPTIFORM ATTACKS IN DIABETES MELLITUS.*

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Although instances of the occurrence of convulsions in diabetes have been recorded from time to time for many years, such attacks are so rarely met with that, in the minds of most physicians, they have never come to be regarded as in any way a part of the symptomatology of that strange disease. Indeed, in the differentiation of the various forms of coma, the absence of convulsions has often been set down as a characteristic feature of the coma of diabetes, and by some of the older writers (Frerichs, Cyr) the categorical statement is made that convulsions never occur in such coma.

This feeling has been so general that when epileptiform attacks have been noted in the course of diabetes there has usually been a disposition to regard the association as fortuitous, or at least to look upon them as related only in an indirect way to the primary disease. In a good many cases this view has doubtless been the correct one. A certain proportion of such convulsive attacks are quite certainly of uremic nature and depend upon the frequently associated nephritis. In other instances the attacks may result from changes in the cerebral arteries, with subsequent hemorrhage or softening, or from an associated meningitis, etc. In still other cases the combination of a glycosuria and epileptiform seizures may depend upon some organic brain lesion which either directly or indirectly has disturbed the glycosuric center in the medulla. Finally, diabetes may, of course, develop in an epileptic subject.

After due allowance has been made, however, for all these possible causes there still remain a considerable number of recorded cases in which the clinical and post-mortem evidences are such as to leave no doubt that the convulsive seizures were directly related to the diabetes itself and were an expression of its toxic action upon the nerve cells.

The subject has a clinical interest greater than might at first be supposed, by reason of the fact that, although some of the epileptiform attacks occur only as a part of a terminal coma, a large proportion of them develop long before any signs of coma are manifest, and are of such a character, and are associated with such other symptoms, as to simulate closely the symptoms of a focal brain lesion. Such Jacksonian attacks may easily lead to serious errors in diagnosis. A case in which a misinterpretation of the symptoms was almost inevitable is that reported by Abbe, in which unilateral convulsions, hemiplegia, and aphasia, associated with acute mastoid disease on the opposite side, lead not unnaturally to the diagnosis of a brain abscess.

In the case about to be reported the symptoms, for the first few days of observation, were such as to suggest strongly the existence of some organic disease of the brain.

A. D., Italian girl, 16 years of age, single. Admitted to Hudson Street Hospital, December 12, 1907. Died, December 25, 1907. Family history negative for diabetes, tuberculosis, rheumatism, or distinct neuropathic tendencies.

Personal History.—No history of the usual diseases of childhood was obtainable. At four years the patient was ill for two months with convulsions of some kind, which are said to have been quite different from those of present illness. While never a strong, vigorous child, she has always been fairly healthy, and has never been acutely ill except for the above-mentioned attack. Menstruation began at fifteen, continued for three months at intervals of a month, and has been absent since. Three months ago patient had for a short time a slight discharge from the right ear. No history of injury to the head. For the past year she has had from time to time colicky pain in the abdomen, which has been less troublesome of late.

Present Illness.—The patient was as well as usual up to three weeks before admission to hospital. One morning, without known cause, she had a sudden attack of tremor of the right arm and right leg, which continued for about half an hour. There was no pain, but there was a stinging sensation as of "pins and needles" in the skin of the affected part. She did not lose consciousness; there was no movement of the face, head, or eyes. Similar attacks have since occurred several times every day and have become rather more frequent of late, though the movements of the right leg have been less pronounced. During this time it has been noticed that the patient drinks large quantities of water and gets up several times in the night to pass urine. There has been no appreciable loss of flesh, and no other symptoms of any sort have been noticed. The patient comes to the hospital only because of the persistence of one-sided convulsive attacks.

Physical Examination.—Medium-sized, well-developed, and well-nourished young girl. Face and mucous membranes of good color. Ears and nose normal, pupils equal, and react promptly to light. Tongue clean, throat slightly reddened, teeth in fair condition. Patient is conscious at all times and intelligent. No visible pulsation in vessels of neck, no glandular enlargements. Chest symmetrical and well developed, respirations regular and of normal rate. Lungs normal in every respect. Heart's action rapid and regular. Apex beat in the fifth space 10 cm. to the left of the midsternal line, impulse sharp and distinct. Relative dullness extends 2 cm. to the right of the midsternal line, up-

*Read at a meeting of the Practitioners' Society of New York, held April 3, 1908.

ward to upper border of the third rib, to the left 10.5 cm. from midsternal line. Heart sounds loud and clear; no murmurs. Pulse, rapid (110), regular, of small size, and of only fair force. Abdomen shows normal contours. No rigidity or tenderness, no masses to be felt. Liver dullness extends from upper border of sixth rib to the costal margin; edge not felt. Splenic dullness normal, edge not felt. Extremities—Marked weakness of the right arm with apparently some diminution of sensation. Tendon reflexes absent. Left arm normal. Right leg shows slightly diminished power compared with the left; both knee jerks absent. Plantar reflexes normal. Both eyegrounds appear normal.

During her stay of thirteen days in the hospital the convulsions numbered from four to twenty a day. Most, but not all, of them occurred during the daytime. They usually lasted from one to three minutes, but occasionally were of much longer duration. Once the twitchings continued for one hour and ten minutes.

For the first three or four days the convulsions affected only the right side of the body. Beginning in the arm, there were twitchings of the right arm and leg, and often, too, of the right side of the face, including the eyelids and forehead. The head and eyes were usually turned to the right at such times. During the last week of life the convulsions often involved the left side of the body as well as the right, and occasionally the twitchings were confined to the left side. At other times there would be twitchings of one side of the body, with a tonic spasm of the other side.

On December 18 the patient was examined by Dr. J. Ramsey Hunt, who found slight weakness of lower half of right side of face; marked weakness of right arm, leg, and foot; no disturbance of sensation, except inability to recognize objects held in right hand; loss of knee jerks and Achilles reflex on both sides, and eyegrounds normal except for some engorgement of the veins.

Until the last two days of her illness consciousness was preserved even during the attacks, and the intelligence was normal. On several occasions outbreaks of hysterical crying occurred. In some of the more severe convulsions a peculiar guttural sound was uttered, which seemed to indicate involvement of the laryngeal muscles.

It was difficult to say whether the attacks were associated with aphasia, as the patient neither spoke nor understood much English. During one attack of right-sided convulsions she complained of pain in the fingers of the right hand. Frequently the attacks would be followed by profuse sweating and by thirst. There was pronounced muscular weakness of right arm throughout, and during the last few days some weakness of the right leg and right side of the face as well.

The temperature remained normal or nearly so up to two days before death when it rose to between 104° and 105° and thereafter remained constantly high. At the same time the pulse became feeble and much more rapid (120 to 140) and patient became stuporous and finally comatose. The convulsions continued up to within a few hours of her death.

The breathing was quiet and regular throughout the illness. It was rapid only during and immediately after the convulsive attacks. There was at no time, even during the terminal coma, any suggestion of the Kussmaul air-hunger.

The condition of the urine is shown by the following chart:

Date	Diet	Amount 24 Hours	Reaction	Spec. Grav.	Albumin	Sugar	Acetone	Diacetic Acid	Oxybutyr. Acid
Dec. 12....	Mixed.....	.....	Acid....	1032	Faint trace	Positive.....		Absent.	
Dec. 14....	Carbohydrate free	900 c.c....	Acid....	1030	Faint trace	2.5%...	Present....	Present.	
Dec. 16....	Moderate restriction of carbohydrates.	1000 c.c...	Acid....	1020	Very faint trace.	1.2%...	Faint reaction.	Absent....	Absent.
Dec. 19....	Moderate restriction of carbohydrates.	1400 c.c...	Acid....	1026	Faint trace	2.5%...	Absent....	Absent....	
Dec. 21....	Moderate restriction of carbohydrates.	1800 c.c....	Acid....	1026	Faint trace	2%.....	Absent....	Absent....	Absent.
Dec. 24....	Moderate restriction of carbohydrates.	Incomp'te.	Acid....	1023	Very faint trace.	0.7%...	Present....	Slight reaction.	Absent.

A specimen of mixed urine of last twenty-four hours of life examined by Dr. Roper showed 2.7 per cent. glucose, marked reaction for acetone and diacetic acid, and negative reaction for oxybutyric acid.

Total nitrogen in 100 c.c. = 0.8 grams.

Ammonia nitrogen in 100 c.c. — 0.077 grams = 9.5 per cent.

Blood examinations: Red cells, 5,800,000; hemoglobin, 80 per cent.; color index, 75 per cent.

	Dec. 13.	*Dec.* 16.	*Dec.* 22.
Leucocytes	12,000	7,000	12,100
Polymorphonuclears	65%	63.5%	68%
Large lymphocytes	8%	3%	4%
Small lymphocytes	25%	32%	26%
Eosinophiles	2%	1.5%	2%

The fluid obtained by lumbar puncture was small in amount and normal in character, except for the presence of a small quantity of sugar.

Autopsy (by Dr. Symmers) five hours after death. (Condensed report.) Anatomical diagnosis. *Chronic diffuse inter- and intraacinar pancreatitis. Moderate periportal cirrhosis and fatty infiltration of liver. Cyanosis and moderate chronic parenchymatous degeneration of kidneys.*

Lungs—Normal. *Heart*—Normal. *Spleen*—Normal. *Stomach*—Moderate grade of chronic atrophic gastritis. *Liver*—Moderately enlarged; surface smooth; capsule tense and glistening. Scattered over the upper surface are several irregularly outlined yellowish patches which stand out in sharp

contrast to the dull blue color of the rest of the surface. On section the organ cuts readily; the substance is firm in consistency and diffusely bluish or bluish-red in color. Lobules well defined and slightly yellow in color. *Gall bladder*—Normal. *Pancreas*—Only the head and a small part of the body remain. The greater part of the body and the tail are represented by small islands of pancreas parenchyma embedded in quantities of fat. In these situations the form of the organ has been entirely lost. The head is relatively large, pale, and firm, and on section its lobules are pale, sharply outlined and project as rounded or conical nodules separated by small bands of pinkish tissue. This applies also to the small portion of the body which is left, although here the islands of pancreatic tissue are in places rather widely separated by bands of fatty tissue. The lumina of the arteries supplying the pancreas, as well as those in the immediate neighborhood, are small, their walls are thin and pliable, their intima smooth and pale.

Kidneys—Moderately enlarged, uniformly smooth, diffusely bluish with many reddish specks scattered over it. On section capsule strips readily leaving a smooth bluish surface. Cortex is pale and appears to be somewhat broadened. Markings very irregular. Parenchyma pale and yellow. Malpighian bodies frequently visible as distinct reddish points.

Intestines—Normal. *Genitalia*—Normal. *Arterial System*—Normal.

Brain—Dura matter irregularly, but strongly, adherent to calvarium. On removal brain appears to be well developed. The pia is pinkish in color and its venules in patches here and there are distinctly injected, but nowhere is there the slightest suggestion of exudate. The vessels at the base and the ventricles appear to be entirely normal. In the cortex gray and white matter are sharply differentiated. In the posterior part of the parietal lobe on both sides the white matter shows patches composed of numerous deep red points which do not scrape or wash away readily. Pons and medulla show no changes to the naked eye.

Microscopical Examination (Dr. Symmers).—*Liver*—The cells around the central veins show a moderate degree of vacuolation. The periportal connective tissue, especially around the medium-sized bile ducts, is distinctly, but not greatly, increased, is coarsely fibrillary and noncellular.

Pancreas—The connective tissue framework is very greatly increased and very diffusely distributed, surrounding the remains of the pancreatic lobules and insinuating itself between the individual groups of cells which enter into the formation of the acini. The connective tissue at the periphery of the islands of pancreatic cells is arranged in broad bands, is distinctly fibrillar in character, often wavy in outline, noncellular and supports in places large numbers of thin-walled blood-vessels, the lumina of which are choked by red cells. In the islands of parenchyma the cells of the acini are separated by distinct but rather delicate strands of pale noncellular connective tissue. The parenchyma islands are of various sizes and shapes and the cells in them vary in character. Some of the acini are lined with atrophied cells of the general type of secreting pancreas cells. In such acini the lumen is large. Other islands are made up partly, sometimes almost entirely, of very large acini lined with tall columnar cells with pale protoplasm and a small, richly chromatic, deeply-placed nucleus. These "acini" really seem to represent the remains of smaller ducts. In still other places the islands are composed of narrow, worm-like strands of very small cells closely packed together so that practically no lumen is visible. These cells have a comparatively large and richly chromatic nucleus and seem to represent an attempt on the part of the remaining pancreatic cells to regenerate. The islands of Langerhans are only occasionally to be made out as groups of flattened, evidently degenerate, cells arranged in a disorderly fashion and very indistinctly differentiated from the surrounding structures. One section shows a small lymphoid mass embedded in the substance of the organ.

Kidneys—These show a moderate degree of chronic parenchymatous degeneration and cyanosis.

Brain—Sections for microscopical examination were removed from one of the parietal lobes and from the pons and were stained in hematoxylin and eosin. In neither place are vascular or other changes present sufficient to account for the symptoms referable to the brain. The areas occurring in the parietal lobes and described as showing numerous red points in the white matter, are found, microscopically, to depend upon simple venous stasis.

The case is remarkable in many respects aside from the occurrence of Jacksonian attacks. The whole duration of the illness, from the appearance of the first symptom to her death, was but five weeks, and yet during almost the whole of this time the clinical picture, except for the convulsive paroxysms, was not at all that of severe diabetes. The quantity of urine was hardly more than normal, the amount of sugar excreted was small, the patient's nutrition was excellent and all the signs of a severe acidosis were lacking. Even in the terminal coma the urine contained no β-oxybutyric acid, the ammonia nitrogen was less than 10 per cent., and the peculiar and characteristic type of breathing, the Kussmaul "grosse Athmung," was entirely absent.

The mildness of the diabetic symptoms and prominence of the cerebral symptoms led me, during the first few days of observation, to look upon the case as probably one of organic brain disease, with disturbance of the glycosuric center, rather than one of true diabetes. But the absence of all confirmatory signs of abscess, tumor, meningitis, etc., and, as Dr. Hunt pointed out, the existence of other nervous symptoms common in diabetes (absence of patellar and Achilles reflexes) compelled me gradually to abandon this view. The post-mortem findings in the case and its close resemblance to some of the published cases leave no room for doubt that it was one of true pancreatic diabetes and that the cerebral symptoms were the direct result of the diabetic poison. Both organic disease of the brain and nephritis could be excluded with certainty.

A second instance of the occurrence of Jacksonian convulsions in diabetes I am enabled to report through the courtesy of Dr. James C. Johnston under whose observation the case came.

A man, fifty-nine years old, with general arteriosclerosis and doubtful history of syphilis had had severe diabetes for at least three years. The urine often contained 6 to 7 per cent. of sugar, which however, could be greatly reduced when the patient was willing to carry out a proper regimen. During this time he had two severe attacks of xanthoma diabeticorum* coincident with lapses of treatment of the diabetes. In the spring of 1896, after having been in fairly good general condition for some months, the diabetic symptoms became worse, the urinary

*This aspect of the case has been reported by Dr. Johnston, in the *Journal of Cutaneous and Genito-Urinary Diseases*, Vol. XII., 1894, p. 205.

sugar increased to about 6 per cent., and the patient developed attacks of convulsive twitchings affecting at first only the right side of the tongue. After the first two days the attacks involved also the right side of the face, including the eyelids and forehead. The convulsions, however, never extended to any of the extremities nor was consciousness lost during the seizures. There was no aphasia and no loss of power was recognized in the affected muscles. The attacks, which lasted only a few minutes, increased in frequency until at the end of three or four days they became almost continuous and interfered seriously with the taking of nourishment. Sedative drugs, including morphine, had no effect in controlling the paroxysms. The urine gave no evidences of nephritis. No examination was made for the presence of the acetone bodis. Five days after the onset of the convulsions the patient gradually passed into a state of stupor and died in coma forty-eight hours later. No autopsy was obtained.

In this case it is impossible, in the absence of a post-mortem examination, to exclude the possibility that the symptoms may have been due to some gross lesion of the brain; but the clinical picture of the case has so much in common with that of the other recorded cases that it seems fair to regard it as of the same class.

I have attempted to collect from the literature all the cases of convulsions occurring in diabetes in which the reports were sufficiently definite to be of value and in which it could be determined with reasonable certainty that the attacks were directly related to that disease. These cases (twelve in all) seem to me to be of sufficient interest to justify their presentation here in condensed form.

Scheube.[1] Man, twenty-seven years old. Symptoms of diabetes for about six months. In hospital for two months, on diet chiefly of meat, with little improvement in sugar and with loss of weight. While in the terminal *coma dyspnoicum* patient had a single general clonic convulsion of short duration.

Lépine and Blanc.[2] Man, thirty-nine years of age. One brother epileptic. Diabetes of severe type for ten months (15 liters of urine and 700-800 grams of sugar daily). Some improvement under treatment. Gradual development of weakness of right arm and leg which in two weeks amounted to complete hemiplegia. Also immediately after onset of weakness patient began to have convulsive attacks in the right arm, leg, and face. The convulsions returned every three or four hours and lasted five or six minutes. Consciousness was preserved during the paroxysms. Three weeks after onset (when admitted to hospital) he had begun to have difficulty of speech. The convulsions then occurred about once a day and lasted two minutes. They affected the right arm and leg and right side of face, including the eyelids. Tongue not involved. The hemiplegia included the right side of face and half of tongue. The aphasia persisted, the mind was much enfeebled. After period of somnolence for some weeks patient began to improve mentally, and hemiplegia became much less pronounced. During this time he gained in weight and was excreting very little sugar. Soon afterward he developed symptoms of pulmonary tuberculosis and died in three months. The autopsy showed no gross lesion of the brain, but microscopically in the left ascending parietal convolution there was "almost complete disappearance of the pyramidal cells with changes in the neuroglia and dilatation of the capillaries.

Lépine.[3] Woman, fifty-eight years of age. Diabetic for five years. After several days of headache patient had an attack of syncope followed by pronounced "trembling" of the upper extremities. Two days later sudden loss of consciousness and clonic convulsions, most marked in the legs. Attack lasted ten minutes. On the following day a second general convulsion. During the next two days there was constant "agitation" and occasional hallucinations of sight. The daily quantity of urine amounted to 5 liters, the sugar to 300 grams. The urine also contained β-oxybutyric and formic acid. Five days later patient sank into coma and died.

Abbe.[4] An active, healthy man of forty-four years developed a severe influenza complicated by a suppurative otitis media of the left side. He continued to lose flesh and strength and a few days later began to notice a marked increase in frequency of micturition and in quantity of urine passed. A few weeks later he noticed a growing difficulty in uttering certain words. Two months after onset he began to have attacks of Jacksonian epilepsy and entered hospital where it was found that the urine was moderately increased in amount (40 to 86 ounces) and contained about 30 grains of sugar to the ounce. No albumin nor casts. The epileptiform attacks occurred several times a day and began with numbness in right side of body, followed by convulsive movements of right leg and arm and sometimes of right side of face. After the attacks there was weakness of right arm and leg, transient aphasia and diminished sensation on the affected side. The knee jerks were lost. Consciousness was usually preserved. Sixteen days after onset of the Jacksonian attacks inflammation of left mastoid developed rapidly and on following day required operation. The severe right-sided convulsions continued and the aphasia became more pronounced. Three days later, upon the supposition that a brain abscess might have formed, the left side of the skull was opened but nothing was found. The convulsions continued, became more general and more severe and five days later patient died in coma. The autopsy showed a perfectly normal brain and a fibroid and greatly atrophied pancreas.

Kraus, Fr.[5] Man, fifty-one years of age. Diabetes for one and a half years. Daily urine from three to six liters, sugar from 5 to 7 per cent., no ferric chloride reaction. After several days during which the patient appeared silent and anxious he became suddenly unconscious and developed clonic spasm first of the left upper extremity, then of other groups of muscles, until finally a general epileptiform attack resulted. The whole attack lasted several minutes. The next day there were numerous similar attacks. During these the patient was completely unconscious. In the free intervals consciousness became less and less full until there was continuous coma. No Kussmaul air-hunger or "grosse Athmung." Temperature subnormal. No acetone odor to breath. After several days the attacks became less frequent, and finally, with the coma, disappeared entirely. No $Fe\,Ch_3$ reaction at any time. No β-oxybutyric acid. No alkaline treatment. A few days later patient developed a pneumonia and died.

Love.[6] Man, forty-three years of age. Severe diabetes for nine months. Several days after beginning a rigid diabetic diet there developed troublesome constipation, abdominal pain, mental confusion and slight headache. The urine was free from albumin. One evening patient had an "epileptic fit" lasting two and a half minutes and was afterward drowsy and had noisy breathing. Fifteen minutes later had a second general convulsion with deep unconsciousness. Immediately after this

there was furious mania and five minutes later a third convulsion. The convulsions were repeated almost continuously (forty-six in all) for twelve hours. Between attacks the patient was maniacal. These were followed by coma for a few hours and death. The urine just before death "gave a dubious acetone reaction (so-called) with perchloride of iron." Post-mortem "no gross lesion was found anywhere likely to be in any way associated with the diabetes or the convulsions."

Jacoby.[7] Girl of twenty-two years. Father had died of diabetes. Symptoms of diabetes for one year with severe double sciatica. For some weeks there had been also severe pain in arms and breasts, attacks of vomiting and constant diarrhea. The urine contained 2 per cent. of sugar and frequently also acetone. Patient then developed attacks of general convulsions, beginning in both arms and accompanied by loss of consciousness. Attacks were repeated from time to time for seven months. She then passed into a state of coma, and died five days later without further convulsions.

Redlich.[8] Man, thirty-five years old. Three weeks after onset of symptoms of severe diabetes he developed pains and stiffness in right leg and arm which became somewhat weak and showed from time to time "contractures." One week later he suddenly lost power of speech and began to have frequent convulsions of the affected side, associated with profuse flow of saliva. Consciousness was preserved in the attacks. During next two weeks the degree of hemiplegia and aphasia fluctuated from time to time. When seen there was motor aphasia, slight mental dullness and an acetone odor to breath. There was weakness of lower half of right side of face and of right arm and leg. Tongue not involved. Sensibility normal. Daily urine amounted to 7,000 c.c. and total sugar excreted to about 400 grams. Urine contained much acetone and diacetic acid but no β-oxybutyric acid and no albumin. The convulsions, which were very frequent, began with a deep, noisy inspiration and with a brief tonic cramp of the muscles of right side of face and neck. This was followed by clonic convulsions of right side of face, paw, neck, and arm. Towards end of attack there was a profuse flow of saliva. The paroxysms lasted about two minutes. During the four days in the hospital variations in the severity of the hemiplegia and the aphasia were readily appreciable. Patient became more stuporous, the convulsions became more frequent and severe, and death occurred in coma. The urine continued to show much acetone and diacetic acid. At autopsy the pancreas was normal. A very careful microscopical examination of brain showed nothing but marked injection of the larger and smaller blood-vessels.

Lossen.[9] Case I. Married woman, aged twenty-five years. Severe diabetes for at least several months. With great restriction of carbohydrates the sugar fell from 600 grams to 15 grams or less a day. With complete withholding of carbohydrates evidences of acetone, diacetic acid and β-oxybutyric acid appeared in the urine and a few days later there developed sudden blindness which was followed in a few hours by convulsions which were repeated at frequent intervals until her death, thirteen hours later. The attacks always began with twitchings of the left arm which were soon followed by a tonic spasm of this arm and later of the right arm and leg. This tonic cramp was in turn followed by severe clonic convulsions of all four extremities and of the face. The pupils were widely dilated and did not react to light. Consciousness was completely lost during the paroxysms and usually remained so during the short free intervals. Once, however, the patient regained consciousness, complained of severe headache, and asserted that she still could see nothing. Examination of the eyegrounds was negative. No appreciable loss of power in muscles of face or extremities. No disturbance of sensation. In one attack the twitchings began in the *right* arm instead of the left. At no time did the breathing present the features of the Kussmaul air-hunger. At the autopsy all the organs, including brain, pancreas, and kidneys were essentially normal.

Case II. Girl, sixteen years old. Severe diabetes for five months. Under very rigid dietary the sugar remained nearly or completely absent, but there was constantly in the urine acetone and diacetic acid and often some β-oxybutyric acid. With large doses of sodium bicarbonate the urine could be kept neutral or alkaline. Eventually there developed gradually the usual symptoms of threatening coma; headache, vomiting, typical air-hunger, acid urine, and an increased amount of oxybutyric acid. This condition continued for sixty hours without loss of consciousness. The patient then had several general convulsions with some return of consciousness in the free intervals. The convulsions began with a stage of tonic spasm followed by severe clonic convulsions of the entire body. Death occurred in coma some hours after the last convulsion. The autopsy showed extreme atrophy of the pancreas, normal brain, and kidneys.

Stauder.[10] An obese woman, fifty-three years old. Severe diabetes for two years. Daily urine 3 to 6 liters, sugar 4 to 6.6 per cent. No acetone nor diacetic acid, no albumin. Gradual improvement under treatment, then sudden appearance of attacks consisting of dizziness, headache, and twitchings of the left shoulder and arm. The convulsions began with a tonic stage in which the head and eyes were turned to the left, and left arm became rigid, and this was followed by violent trembling of the left arm. The face was not involved. Consciousness was lost for two or three minutes. Between the attacks there was some weakness of the left arm, some diminution in sensation in the upper arm and absence of the tendo Achilles reflexes. Otherwise the examination of the nervous system was negative. Thirteen such paroxysms occurred within a period of six days. Then under alkaline treatment there was gradual improvement with return of strength in the arm. Only once did the urine show traces of acetone and diabetic acid.

Soetbeer.[11] Patient was a man, twenty-seven years old, who suffered from severe diabetes with a large sugar excretion and with all the evidences of a severe acidosis (acetone, diacetic acid, β-oxybutyric acid, and a high ammonia nitrogen). During a period of eight days he had from three to thirteen convulsions daily. Some of these were distinctly Jacksonian in character, with clonic convulsions of right side of face, right arm, and leg; transient unconsciousness, and subsequent paresis of right side of face and right arm and leg with exaggeration of the knee jerk and a Babinski reflex. Others resembled those of true epilepsy, with a tonic stage followed by severe general clonic spasm, with biting of the tongue and with immobility of the pupils. Between the attacks there was constantly some slight weakness of the right side with persistence of Babinski's sign. The attacks usually lasted only a few minutes. Breathing shallow; no air-hunger; no coma. With the use of

large amounts of sodium bicarbonate the severity of the acidosis diminished, and the attacks ceased.

Later by stopping sodium bicarbonate and adhering to a rigid carbohydrate-free diet (with increasing acidosis) attempts were made (!) to excite a return of the convulsions, but without success. Patient eventually improved in weight and general condition and when discharged all evidences of paresis had disappeared, although sugar, acetone, and diacetic acid were still present. The urine gave no indication of a nephritis.

A study of these fourteen cases indicates that the epileptiform attacks of diabetes may, as a matter of convenience, be divided into three more or less distinct groups:

1. Attacks of general convulsions, not to be distinguished from those of true epilepsy, which begin usually with a short tonic stage and are associated with complete loss of consciousness, immobility of the pupils and, often, biting of the tongue.

2. Attacks marked by convulsions beginning in a single group of muscles, but spreading rapidly to other groups until a general convulsion results. In this group also consciousness is lost.

3. Attacks of typical Jacksonian epilepsy, with convulsions restricted to single groups of muscles or to one side of the body; associated usually with other symptoms of focal brain disturbances and with no loss of consciousness.

Five of the cases belonged to the first group. In three of these (Scheube, Love, Lossen, Case II) the attacks appeared only in the last twenty-four hours of life and were a part of the terminal coma. In Jacoby's case the convulsions occurred from time to time over a period of seven months and were absent in the final coma. In Lépine's patient there was a general convulsion on two successive days and then an interval of several days before the fatal coma manifested itself.

Two instances occurred of the second type of convulsions (Kraus, Lossen, Case I). In both the attacks began in the left arm. In Lossen's case the convulsions were a part of the terminal coma. In that of Kraus, after occurring at frequent intervals for a number of days they gradually ceased entirely.

The third group of cases is of much the greatest clinical interest because of their striking resemblance to cases of focal organic disease of the brain. Seven of the above cases belong to this group. In five of these (Abbe, Lépine and Blanc, Redlich, Soetbeer, and myself) the right half of the body was involved. In Dr. Johnston's case the convulsions were limited to the right half of the tongue and face; in Stauder's case they affected the left side of face and left shoulder and arm. In all of these cases there was, to a greater or less degree, paralysis of the affected muscles. In some the hemiplegia was pronounced and permanent. Three of the right-sided cases showed distinct aphasia. In several of the cases, also, sensory disturbances in the affected parts were noticed (pain, numbness, anesthesia).

The length of time over which the convulsive attacks extended and the total number of convulsions, varied within very wide limits. In Jacoby's case the attacks appeared only occasionally over a period of seven months. In my own case they occurred at least several times a day during a period of five weeks. In several instances they appeared only in the last twenty-four hours of life. In eleven of the fourteen cases the epileptiform attacks were followed, sooner or later, by coma and death. In the remaining three cases the convulsions, after lasting for a few days, ceased with improvement in the other symptoms.

The convulsive attacks were sometimes associated with various other cerebral symptoms. Severe headache frequently preceded and followed the convulsions. Somnolence was present in several instances. Sudden amaurotic blindness preceded the initial convulsion in one of Lossen's cases. Lépine's patient had visual hallucinations. In one case (Love) there were maniacal outbreaks between the convulsions; in another (Redlich) each convulsive attack was accompanied by a profuse flow of saliva.

Autopsies were made in seven of the eleven fatal cases. In none of these did the brain show gross changes and in only one were there discoverable histological changes. In this case (Lépine and Blanc) microscopical examination showed atrophy and disappearance of many of the cortical cells of the motor area of the side opposite to that in which the convulsions occurred and which had been hemiplegic for six weeks.

In seeking for an explanation of the cause and nature of epileptiform attacks in diabetes it is obvious that they must be considered in relation to the various other affections of the nervous system which often play such an important part in the clinical picture of the disease. The frequent occurrence of local neuralgias or neuritides, the frequent loss of the tendon reflexes, the cases of pseudo-tabes and those rare cases of hemiplegia without convulsions and without discoverable changes in the brain all seem to point to the existence of some poison with a special affinity for the delicate nervous tissues. The absence of any histological change in the brain in most of the cases collected here is in accord with the results of the examination of the cord[12] and of the peripheral nerves[13] in certain cases giving well marked symptoms referable to these structures. Whatever the cause it is evident that it may produce grave disturbance of the functions of the nerve cells over a considerable period of time and yet produce in them changes too subtle to be detected by the most careful histological examination. As to the nature of this neurotoxic agent, we are still altogether in the dark. It is conceivable that these nervous manifestations might depend merely upon the abstraction of some nutritive substance from the nerve cells in the progress of the general malnutrition which characterizes the severer forms of diabetes; but such an explanation seems highly improbable. Such manifestations are not common to other forms of malnutrition.* nor are they found only in cases of diabetes with marked emaciation. In my own case the patient's general nutrition was excellent and the picture was not at all that of a severe diabetes.

It seems much more likely that the nervous symptoms result from the action of some active poison formed in the course of the abnormal metabolic processes which go to make up the disease.

The almost constant association of marked acidosis with the usual and characteristic type of diabetic coma—that in which the "grosse Athmung" of Kussmaul is the most distinctive feature—leads one, naturally, to inquire into the relation of such acidosis to the occurrence of epileptiform attacks. In reviewing the cases cited here one cannot but

*Rare exceptions to this rule have, however, been recorded in the cachexia of pulmonary tuberculosis by Senator (*Berl. klin. Woch.*, 1879), and in that of cancer by Oppenheim (Charité Annalen, 13 Jahrg. 1886).

be struck with the inconstancy of this feature. In only three cases (Lossen, Soetbeer) is it certain from the description that a severe acid intoxication existed. In several of the cases no conclusions can safely be formed upon this point; but in at least three instances (Kraus, Stauder, Conner) it is certain that no severe acidosis was present. In the case of Kraus not only did the urine contain no acetone bodies, but a careful study of the alkalescence of the blood showed no departure from the normal. In several other cases the evidence, as far as it goes, points to an absence of severe acidosis.

In Soetbeer's patient, although the convulsions were associated with much acidosis and ceased as the acidosis was diminished by a more liberal diet and by the use of alkalies, they did not return when the acidosis was increased by a temporary cessation of the treatment.

The character of the final coma, also, was by no means constant. In several instances it is described as having been of the typical Kussmaul type. In several other cases, including my own, there was at no time the characteristic deep breathing or air-hunger. This inconstancy of the signs of acid intoxication (including the Kussmaul type of coma) in these cases makes it very unlikely that either the acidosis itself or any one of the substances directly associated with it is the immediate and direct cause of the convulsions.

It is interesting to note the close resemblance of many of the nervous symptoms of these cases to those of uremia. The general convulsions, the Jacksonian attacks, the transient paralyses, the amaurotic blindness, the severe headaches, the maniacal attacks, the respiratory disturbances, the coma—all these find their counterparts in uremia. Yet the symptoms in these cases were certainly not due to uremia. There is abundant clinical and post-mortem evidence to disprove such a view. All that can be said is that the unknown poison of uremia and that of certain cases of diabetes may produce severe and strikingly similar disturbances of the central nervous system, without there being, in either case, demonstrable anatomical changes.

Summary.—Although some of the epileptiform attacks which occur in the course of diabetes are manifestly due to other associated conditions (uremia, cerebral softening, meningitis, etc.), a certain proportion of them are unquestionably related directly to the diabetes itself and are the expression of some form of diabetic intoxication. Such attacks may simulate closely the general convulsions of true epilepsy, or they may be distinctly Jacksonian in character and be limited to one side of the body or to certain groups of muscles. These localized convulsions are usually associated with transient paralysis of the affected muscles, aphasia, sensory disturbances, or other symptoms suggestive of a circumscribed brain lesion, and may thus lead to serious errors in diagnosis.

The convulsions may appear only during the terminal coma, or they may be repeated at frequent intervals for days or weeks before coma develops, or finally, they may cease with improvement of the diabetic symptoms.

The association of such epileptiform attacks with the signs of acid intoxication is by no means constant. In several of the cases it is certain that no such acidosis existed. It seems probable, therefore, that the cause of the convulsive attacks must be sought for in some other form of diabetic intoxication.

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THE SURGICAL TREATMENT OF ALVEOLAR PULMONARY EMPHYSEMA.*

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Within the last decade a number of diseases with obscure pathological conditions have been cleared up and rendered amenable to treatment by rational surgical procedures. Judging from the results thus far obtained, some of the obstinate forms of emphysema bid fair in the near future to be classed as surgical diseases which are amenable to operation.

As a result of studies begun by him fifty years ago, A. W. Freund[1] of Berlin contended that the abnormal arrest in the development and the consequent shortening of the costal cartilage of the first rib, combined with the resultant narrowing of the superior strait of the chest, were important anatomical predisposing factors in tuberculous infection of the apex of the lung. This led him to advance the theory that a correction of this condition in flat-chested individuals was a rational procedure as both a prophylactic measure and a potent curative measure in the incipient stages of this disease.

This recommendation by Freund, has not, up to the present time, been carried out by anyone, to our knowledge, although the pathological findings enumerated have been confirmed by several other investigators. Among these may be mentioned Hart, Schmorl, Birch-Hirschfeld, Hansemann and others.

These remarks are, however, but an introduction to the topic for discussion this evening upon the practical deductions made by Freund from the pathological findings in the costal cartilages, so

*Read at a meeting of the Section on Medicine of the New York Academy of Medicine, April 21, 1908.

graphically described by him as the real cause of pulmonary emphysema. In other words, the generally accepted theory that the barrel-shaped chest in certain forms of emphysema is caused by the condition of the lungs has been long combated by him. He claims and proves that the reverse is true. He has constantly asserted that the rigidity of the chest due to the pathological changes in the ribs and the costal cartilages were the forerunners of the changes in the lungs which are associated with the symptom-complex recognized clinically as pulmonary emphysema.

The pathological findings described are as follows: the costal cartilages are of a dirty yellow color, in a state of fibrillation and cystic, showing also calcareous deposits which cause them to become increased in size. They are hardened, brittle and devoid of their normal elasticity.

In the presence of the foregoing changes, the proper excursion or motion of the corresponding ribs is interfered with. The cartilages of the second and third ribs of the right side are most frequently involved, but these changes may involve all the costal cartilages. The first cartilage, however, is rarely, and then usually the last, to be involved in this disease. With the degeneration of the cartilages and the accompanying rigidity of the ribs, the sternum is forced outwards and contributes eventually to the formation of the rigid barrel-shaped thorax, which retains the lung in a continued state of distention. With the increase in the diameters of the chest, the normal function of the diaphragm is interfered with and the muscle shows evidences of atrophy and fatty degeneration.

By removing or resecting the offending cartilages, the proper functioning power of the chest may be restored; the ribs will be permitted to exercise their proper range of motion, and the proper expiratory efforts of the lungs will be facilitated.

Whether this hypothesis of Freund is tenable or not, the future will decide, and is left to your judgment from the recital of cases which have been reported; to these the writers will add their experiences on four cases which were operated upon recently at the Montefiore Home.

Case I.—Patient of F. Kraus. Carpenter, aged forty-six years, with emphysema of two years' standing, following pneumonia. Since then he complains of dyspnea, cough, palpitation, and profuse expectoration, which have resisted all forms of treatment. Is troubled with insomnia and unable to lie down in bed.

Examination.—Barrel-shaped chest, with characteristic physical signs of alveolar emphysema. Chest expansion only 2 cm. The apex impulse of the heart is at the sixth space. The arteries are hard and tortuous. The liver is enlarged and pushed downwards. The spleen is also enlarged. Lower extremities edematous. Albuminuria with hyaline casts and renal epithelium.

Operation March 8 by O. Hildebrand. Schleich infiltration anesthetic was used on account of marked cyanotic appearance of the patient. The second and third costal cartilages were resected on the right side, and this was followed by normal excursion of the corresponding ribs. On account of pain, further operative procedures were discontinued.

The day following the resection, the patient for the first time in many months was able to assume a comfortable recumbent posture in bed. The cartilages removed showed the characteristic changes described by Freund.

April 24. General anesthesia being administered, the second, third, and fourth cartilages of left side were resected. The patient was discharged May 16, when the following was noted: Chest expansion 5 cm.; increased three months later to 7 cm. Vital capacity of lungs increased from 800 to 1,400 c.c. Chest not so barrel-shaped. Radioscopic examination shows ribs functionating properly. Cyanosis has entirely disappeared. The albuminuria is diminished. The patient feels decidedly improved.

Hildebrand in his concluding remarks upon the case mentions the unlikelihood of the regeneration of the resected cartilages. But this was not our experience in the first case operated upon (Case IV in this report). The cartilages reformed within five weeks and caused a return of the former symptoms.

Case II.—Mohr-Bramann-Haasler. Glazier, age forty-six, troubled with dyspnea for five years. Rigid chest, with very shallow respiration, costal cartilage from the second to the fifth, both sides very much thickened. Bronchitis with expectoration. Sputum negative as to asthma and tuberculosis. Coarse and musical râles both sides.

Arteriosclerosis. Heart negative. Urine negative.

April 15, 1907, Dr. Haasler resected 1½ cm. of the second and third costal cartilages on the right side. This was followed by decided relief of dyspnea which lasted about a month, when the patient again experienced more or less difficulty in breathing and had a troublesome cough; he returned to the hospital for operation on the left side.

May 29, 1907. Dr. Bramann resected a portion of the second, third, fourth, and fifth cartilages on the left side. The resection was followed by an immediate falling in of the chest wall with retraction of the lung during expiration. General relief of the symptoms, and chest expansion increased to 5 cm. at the end of one month. At time of report, July, 1907, the patient had so far had no return of former symptoms.

Case III.—Passler and Seidel. Laborer, aged fifty years. History of rheumatism in early life and two attacks of diphtheria with myocarditis several years ago. Troubled for the last five years with marked dyspnea on the slightest exertion. After climbing one flight of stairs, the patient would be obliged to lie down for fifteen minutes before obtaining relief.

Examination.—Barrel-shaped, rigid chest, with expansion 2 cm. Dyspnea and cyanosis upon the slightest exertion. All the classical signs of an uncomplicated emphysema.

Operation June 6, 1907, by Dr. Seidel. Chloroform anesthesia. The first five costal cartilages on the right side were resected to the extent of 1¼ to 2 cm. This was followed by an immediate shifting of the lung and distinct movement of the heretofore fixed and rigid ribs. The vital capacity of the chest increased from 1,200 to 2,700 cc. in the five weeks following operation. When discharged July 13, the man showed decided flattening of right side of chest. The patient was able to climb three stories without the slightest difficulty in breathing and has returned to his former occupation.

Case IV.—C. A., German. Bartender, age forty-one, has been troubled with dyspnea for almost eight years, and on account of frequent, almost daily, attacks of asthma has been unable to work for about five years. He has had all forms and sorts of treatment, including *x*-ray, without affording him relief. Examination showed a rigid, barrel-shaped chest with classical physical signs of em-

physema and asthma. Slight arteriosclerosis. Marked dyspnea and cyanosis upon the slightest exertion. Heart action weak. No murmurs. Expectoration abundant, but tubercle bacilli are absent.

On October 15, 1907, under local anesthesia, we succeeded in resecting the second costal cartilage on the right side. The patient complained of pain and was so troubled with asthmatic seizures that general anesthesia was substituted. The third and fourth cartilages were then resected for about 2 cm. and the wound was closed with the exception of a small rubber drain.

The second night following the operation the patient slept uninterruptedly from 10 P. M. to 5 A. M. without medicine, for the first time in several years. Cough and expectoration gradually diminished and almost entirely disappeared. Edema of the lower extremities set in about a week after operation, but disappeared again in the course of several days. This patient felt otherwise very comfortable for almost five weeks when asthmatic seizures again made their appearance. Examination of the chest showed that expansion had diminished to the former shallowness. The ribs had again resumed their former rigid consistency owing to reformation of the resected cartilages. The patient enjoyed such decided relief during the few weeks following his operation that he has consented to submit to a second operation, which will be undertaken in the near future.

Case V.—J. J., painter, age fifty. Admitted to Montefiore Home December 17, 1907. He had enjoyed good health until 18 months ago, but since then has had frequent asthmatic attacks, sometimes as often as three times a day, for which various remedies have been tried with but little temporary relief. Within the last six months he has used 80 ounce vials of adrenalin chloride hypodermically in efforts to obtain relief of his dyspnea. He is unable to perform any kind of work.

Examination.—Upper extremities covered with pigmented scars, the site of hypodermic medication. Superficial veins are markedly dilated; finger tips and mucous membranes cyanotic. Very marked dypsnea. All the accessory muscles of respiration are hypertrophied. Respiration is shallow, chest rigid, showing very little lateral expansion.

March 10, 1908, ether and chloroform being given, the third, fourth and fifth cartilage of the right side was resected for about 2 cm. *together with the perichondrium* with a view of preventing recurrence of our experience in the first case. Third night following operation the patient was able to sleep quite comfortably; cyanosis disappeared; cough somewhat improved. Chest expansion was increased from less than 2 cm. to 5 cm.

With a view of finding a method of operating, to avoid the reformation of the resected cartilages, we devised the following technique from studies made on the cadaver. After removing two or three centimeters of the costal cartilage and its overlying perichondrium, the remaining posterior layer of perichondrium is carefully dissected up from its attachments and reflected over the stump of the resected rib, where one or two sutures of chromicized gut retain it in place. This affords a smooth, riding surface for the resected rib, and with the interposed sheath of perichondrium there should be no possible chance of the rib again becoming fixed and functionless at this point. This operation we have been able to perform in three of our cases.

April 6, 1908. Patient J. J. was again anesthetized and the right second and left second and third cartilages were resected with the anterior perichondrium; the posterior layer of perichondrium was then dissected from its attachments and reflected over the stump of the corresponding rib where it was fastened with one or two sutures of chromic gut. The wounds were closed without drainage. Since the operation the patient has slept better, the cough is relieved, and the cyanosis has disappeared. Chest expansion has increased to 6 cm. Two weeks after operation the patient walked eighteen of our city blocks and back, returning without being fatigued, but during the following night he had some dyspnea, most likely due to overexertion of his heart. If the dyspnea had been of thoracic origin it would have appeared during the exercise. This is what usually happened before the operation. With chest expansion increased to 6 cm. the vital capacity, before the second operation, 1,800 c.c., has increased to 2,700 c.c.

Case VI.—H. W., age fifty-two. Driver. Admitted to Montefiore Home four years ago. During this time he has been troubled with cough, frequent attacks of dyspnea, followed by exhaustion.

Examination.—Thorax wide and deep, with physical signs of emphysema. Superficial veins very prominent. Face cyanotic, conjunctivæ injected. Chest expansion 2 cm.

March 31, 1908. Chloroform and ether anesthesia was given by Dr. C. J. Pick. The second, third, and fourth cartilages on the right side were resected. The perichondrium was reflected over the end of the rib and fastened as in the preceding case. The wound was closed without drainage. The patient experienced some pain in the region of the wound for two days. On the fifth night he slept uninterruptedly without medication all night. This patient shows decided improvement since being operated upon, and with the exception of two slight asthmatic attacks, he has felt quite comfortable.

Case VII.—M. S., aged fifty-two, tailor. He has complained of cough and dyspnea for over fifteen years. Cannot walk two hundred feet without suffering from air hunger and cyanosis.

Examination.—Emphysema with classical rigid barrel-shaped thorax, without movement of the ribs during respiration. Marked cyanosis of mucous membranes and finger tips. Arteriosclerosis and albuminuria. Sputum does not show tubercle bacilli. Operation, April 14, 1908, chloroform and ether. The second, third, and fourth costal cartilages on the right side, and the left second and third, were resected, and the perichondrium was treated as in the preceding cases. No drainage was employed. On the fourth day the patient, sitting on the edge of his bed, bent down to pick up something from the floor. He states that such an attempt before his operation would have caused him to choke. His former chest expansion 2 cm., has increased to 5 cm., and his vital capacity has also increased from 1,000 to 1,900 c.c. The usual vertical elevation of the thorax *in toto* with each respiration has almost entirely disappeared. The cartilages removed in our cases (IV., V., VI., and VII) were examined by the pathologist, Dr. D. M. Kaplan, who found in them the characteristic changes described originally by Freund, including evidences in them of calcareous deposits, and also showing areas of ossification.

Since the above was written we have found two more cases reported.

Case VIII.—Stieda of Halle resected 2-3 cm. of the right and left second, third and fourth cartilages in a patient with chronic emphysema with marked rigidity of the thorax. The condition of

his patient was decidely improved by the operation.

Case IX.—M. Cohen of Berlin. His patient, aged forty-five years, had chronic pulmonary emphysema which had resisted all forms of treatment. He resected the second, third, fourth, and fifth cartilages on the right side. The result as reported by him, was as follows: After the operation, the patient was able to lie down. This he had been unable to do for many months prior to the operation. The dyspnea, palpitation, and cyanosis were decidedly diminished. The chest expansion increased from 1 cm. to 5 cm.

It is of great interest to note that both of these surgeons also recognized the importance of taking measures to prevent the reformation of the resected cartilages, and in these cases they excised the perichondrium.

From the nature of the operation it is self-evident that only mechanical treatment is intended. Aside from air chambers, the mechanical treatment so far has consisted in rhythmical manual compression of the thorax as recommended by Gerhardt and others, or various breathing chairs, either manipulated by the hands of the patient, or, as in the Zander apparatus, by the aid of machinery. Natural compression of the chest can only be brought about when the ribs are movable. One symptom constant in emphysema is the rigidity of the thorax, preventing both compression and expansion to the same degree. Whether or no this rigidity is the cause of emphysema is immaterial; it certainly is a distressing symptom and stands in the way of a cure. Whatever is left of elasticity or contractile substance in the lung tissue cannot functionate so long as the chest walls are rigid; the visceral pleura cannot leave the parietal because a vacuum would be created and the lung would again return to a state of distention.

As to the pathological changes in the costal cartilages which are said to be normal at the age of fifty, there must be a difference in degree, otherwise we would not have a movable thorax in normal individuals, and the rigid thorax in emphysema.

Having freed the ribs, we are aiding nature toward a spontaneous cure, permitting the lung to contract, an object which all previous methods of mechanical treatment have failed to accomplish.

It is possible that the operation is not a cure in itself, but the beginning of a cure, and it cannot be expected that the pathological changes in the lung tissue, in the bronchial membranes, and in the myocardium, which took years to develop, should disappear in a few weeks. But the possibility is afforded through the restoration of the mobility of the thoracic walls.

From our experience thus far with the operative treatment of pulmonary emphysema, we have come to the following conclusions:

1. Freund's operation is of great benefit in emphysema with a rigid dilated condition of the thorax.

2. A most convincing feature of this treatment is observed during operation; when the costal cartilage is resected the rib recedes immediately, at times below the level of the sternum.

3. The ribs move so freely that the finger tip is distinctly squeezed when inserted between the sternum and rib.

4. The lung visibly contracts.

5. Relief may be afforded by operating upon one side.

6. The operation is not dangerous, and is not followed by shock.

7. Cardiac insufficiency, asthma, chronic bronchitis, and albuminuria are not necessarily contraindications of the operation.

8. The best results are likely to follow, however, when the operation is undertaken before complications have arisen.

9. A removal of, or a plastic operation on, the perichondrium of the resected cartilages seems imperative in order to obtain lasting improvement.

In conclusion, the following fact may be noted which is of no scientific value but is worthy of note as an indication of the patient's view of the operation. The inmates of Montefiore Home were never known to be anxious to submit to an operation. If, within a few weeks, four patients for the same complaint voluntarily submit to this surgical treatment it tends to show that the patients consider the result of the operation a success.

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A PLEA FOR STRICTER PROPHYLAXIS AND MORE SCIENTIFIC MANAGEMENT OF OBSTETRICAL CASES IN TENEMENT HOUSE PRACTICE.*

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Licht, mehr Licht!
—*Goethe.*

While the percentage of maternal and infantile mortality in obstetric cases has been of late considerably reduced in our lying-in-hospitals, it continues to be high in private practice, especially among the poorer classes. Individual statistics are unreliable, and the existing high mortality and morbidity rate is consequently below the true figures. The most recent scientific researches indicate the newest and best methods for the care of the pregnant woman, and give elaborate details for ante-partum preparations, such as measurements of the pelvis, examination of the heart, lungs, viscera, urethra, bladder, and nervous system. Clinical pathologists urge the necessity of making antepartum examination of the blood, number and character of the red corpuscles, number of leucocytes, differential count, amount of hemoglobin, etc., as means of forecasting of a possible secondary anemia of pregnancy. They suggest examination of feces with a view of determining the presence of bacteria which may favor intestinal toxemia; repeated microscopical examinations of the urine for

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albumin, casts, urea, as a safeguard against faulty metabolism leading to eclampsia, sepsis, etc., and they even advise examinations of the gastric contents as a preventive diagnostic measure.

Our methods of prophylaxis applied to the lying-in woman of the poorer class falls short of this scientific mark, and she is very frequently left to the mercy of the ignorant midwife. The prevalent idea of a confinement as being a natural physiological act is responsible for this indifference of the puerperal woman and she seldom consults a physician prior to the actual time of labor.

Thus the existence of malformations of the pelvis, the presence of fibroid tumors or ovarian cysts, a malposition, or the like, is detected only during actual labor. A thorough clinical examination is seldom if ever made, and existing lues, gonorrhea, valvular lesion of the heart, tuberculosis, or other disease leading to impairment of the constitution is frequently overlooked. The danger of such an omission is quite obvious and many a puerperal woman falls a victim to this neglect of prophylaxis. The time honored "non nocere" is too strongly adhered to and its application in abnormal cases has been productive of mishaps and unnecessary loss of lives. In normal cases accouchement forcé is always contraindicated. No amount of instrumental or manual skill can replace the wise mechanical methods of nature, in the gradual dilatation of the uterus by the dynamic force of the liquor amnii or the rotation of the fetal head. The premature application of forceps in the rigid cervix to the disengaged head or in the wrong axis of the pelvis is another violation of the natural forces, and may cause injury to the uterus or fetal head. But a malformation of the pelvis, a malpresentation or any deviation from the normal state is a pathological condition and must be dealt with as such; in such cases, procrastination is equal to the danger of expediting delivery in normal cases.

Given a case of transverse, face, or brow presentation in a primigravida with a small pelvis, labor extending over sixteen hours, with ruptured membranes for six hours, prolapse of funis, and the woman exhausted after tedious and dry labor. Under these circumstances, podalic version might endanger the life of the child, and might cause rupture of the uterus. How much less dangerous would this operation prove, if conditions had been ascertained earlier and the necessary assistance and anesthesia procured in time.

Picture again, in the case of a primipara, with a previously unrecognized rachitic pelvis of less than three inches in the conjugate, a full term child, a protracted labor of eighteen hours, with rupture of membranes since six hours, also presenting dystocia, anemia, exhaustion, and a partially septic condition. Craniotomy might cause the death of the exhausted woman and removal to hospital for a cesarean section might be impracticable or too late.

Imagine that you are called to a midwife's case of eclampsia in a tenement house. The woman is dying with her child *in utero* and you ascertain that a physician was never consulted before, nor was the patient's urine ever examined. In the few reports cited below, I have attempted to illustrate the great necessity of timely antepartum prophylaxis.

Case I. Rosa S., Hungarian, 31 years old, married fourteen years, has had eight children. Internal conjugate measures less than three and one-half inches. Her first child is small and alive after a normal birth. Her second child required craniotomy, which was performed by Prof. Taufer of Budapest. Her third and fourth children were craniotomized in Prof. Taufer's clinic. The woman has persistently refused to submit to cesarean section or premature delivery. She at last consented to the premature delivery of her fifth child, in the first week in the ninth month at the Lying-in Hospital, with the result of giving birth to a living child. In the case of the sixth child, the same procedure was resorted to at the Lying-in Hospital, with the result of a dead child. The seventh child lay in the transverse position. After internal podalic version, the child was born dead. I first made the acquaintance of this woman at the eighth confinement. When I arrived at her house, I found a midwife in charge. There was full dilatation of the uterus, also a prolapse of one arm into the vagina, and a prolapse of the funis which had ceased pulsating. Internal podalic version was done and the child was born dead. She became pregnant with her ninth child and engaged my services. I insisted upon cesarean section, or a delivery in the thirty-sixth week, but my advice was rejected. I then insisted upon being called at the beginning of labor, but was summoned two hours later, when the bag of waters had just ruptured. I found a vertex presentation; I did an internal podalic version, and there was considerable difficulty in extracting the head. The child was born alive but was considerably bruised, and bleeding from the mouth: the result of the forced extraction. The child only lived five hours. The woman rallied the next day and recovered. This case illustrates the result of neglect of prophylaxis on the part of the woman with considerable loss of fetal life.

Case II. Dora G., of Russian birth, 25 years old. She had a normal pelvis and pendulous abdomen; married four years; had two children. Her first child was delivered by forceps, still-born. At the second confinement, she was booked for the Lying-in Hospital, and upon her arrival, the bag of waters ruptured. She had a transverse presentation and a prolapse of funis. Anesthesia was given and an internal podalic version performed, with a child still-born. She engaged my services for her third confinement. Transverse presentation was found on examination. I insisted upon being called at an early stage of labor, with which patient complied. Upon my arrival, I found a finger's dilatation, the bag of waters intact, and strong labor pains. I summoned assistance and prepared for version. After the os was considerably dilated and the woman on the table in Trendelenburg posture, I ruptured the bag of waters and performed podalic version. The child was born alive and the woman was left in good shape.

Case III. Ida L., Russian, 31 years old, multigravida, normal pelvis, first three deliveries normal. At her fourth confinement she was attended by a physician who informed the family that the child was presenting with the head, but the navel string was prolapsed. He delivered her alone, without anesthesia, but the child was still-born. At her fifth labor, I was called about midnight and found the head partially presenting at the cervix which was dilated to a size of less than two fingers. Her labor pains were strong and regular. At 6 A. M. the os was fully dilated, and the bag of waters suddenly ruptured with a gush. The vertex changed rapidly into a face presentation and the umbilical cord slipped out of the os. She was placed in the knee-chest posture. I sent for assistance, and an internal podalic version was done. The child was born alive. The woman recovered.

Case IV. I was called by Dr. Sundelson to see the patient of a midwife, who had been at the bedside for nearly five hours. I found a multigravida with the bag of waters ruptured four hours previously. There was a complete prolapse of the left arm, with a prolapse of the cord. The child was still living. The woman was hurriedly placed in Trendelenburg posture. No anesthesia was given for lack of time. A difficult, but careful reposition of arm and navel string was first accomplished, and an internal podalic version done. There was great danger of rupturing the uterus. The child was resuscitated and the mother made a good recovery.

Case V. I was called by Dr. Dorfman to see a similar case in charge of a midwife, who had been in attendance all night. I found a prolapse of the arm and funis, with no pulsation of the cord. The child was dead. After great difficulty in replacing of the arm and funis, an internal podalic version was done. No rupture of uterus. Woman was left in good shape.

Case VI. Elonora N., born in the United States, twenty-seven years old, married seven years, III-gravida. She had had several miscarriages, which she admitted having brought on herself; she was a frail, anemic woman. When I was summoned to her, on a hot August night, she had been about two hours in labor. The os admitted two fingers, and she had a normal pelvis. The vertex presented, and the waters were intact. The pains were slight but regular, and I decided to wait for a normal delivery. The woman suddenly complained of feeling dizzy and had fainting spells. Her pulse counted one hundred and twenty-six and there was a slight elevation of temperature. I put the patient to bed. Stimulants were given with strychnine hypodermically. As no valvular lesion or uterine bleeding was present, the condition was ascribed to anemia, due to the intense summer heat. As labor pains and dilatation of os were proceeding, there was a sudden gush of the bag of waters and big clots of dark blood rolled out of the vagina. The head descended and I did a tamponage of the vagina. When assistance arrived, I rapidly delivered the child with forceps. No anesthetic was given. The placenta was found attached to a short umbilical cord and lay loose in the vagina. This was a case of premature separation of placenta, due to a short umbilical cord. The woman was in collapse from loss of blood. Credé's massage of the uterus and hot intrauterine douches were resorted to, also saline enemas and stimulation. The woman made a good recovery with a living child. The above conditions could not have been recognized prior to the rupture of the bag of waters, and it was surely due to timely assistance that her life was saved.

Case VII. Mrs. L., Hungarian, 22 years old, II-para, married four years, had one child three years ago. She had a normal pelvis, as well as a mitral lesion of the heart and dilatation with chronic bronchitis, emphysema, and chronic nephritis. She was pregnant five months, and was in a pitiful condition from want of air, as she had to sleep in the prone position. She was cyanotic with blue lips and finger nails. Her temperature was 102° to 103° and her pulse counted 126. I decided to perform accouchement forcé. No anesthetic was given; dilatation of os was accomplished by Champetier de Ribes bags, and internal podalic version was done. The patient rallied. Pregnancy in such a woman might well have been the cause of death. Such a woman is unfit for child bearing.

Case VIII. Mrs. R., Russian, young woman, I-para. This was a similar case of a woman suffering from a valvular lesion of heart and cardiac dilatation, emphysema, chronic bronchitis, and nephritis. Several physicians refused to attend her in confinement. She had a normal pelvis, the vertex presented and confinement was normal, but the patient caused me anxiety at the time of labor on account of her heart. She made a tolerable good recovery but was unable to nurse her child. She is still an invalid and entirely unfit for marital life. Her child is alive but sickly.

Case IX. Mrs. L., multigravida. Had had four children with normal births, and was now a V-para. She had a normal pelvis. Two months prior to her delivery she complained of a vaginal discharge with itching and burning during urination. She had been subjected to a digital examination by a physician, but a careful examination of the urethra was not made. A wash was ordered and the condition was not deemed to be serious. After the delivery the child developed gonorrheal ophthalmia, which was treated heroically, but the lesion was so severe as to result in the loss of the infant's eye. The mother passed through a normal labor, but two months later developed a double pyosalpinx for which a double salpingo-oophorectomy was performed. She made a good recovery and passed into artificial menopause. This woman is still constantly ailing, and is not nursing her child.

Case X. I was summoned in a great hurry to a woman in labor. I found a primipara. Upon my arrival she was in a state of eclampsia, and before any help could be given the woman died with her child *in utero*. I ascertained later that she never consulted a physician before nor was her urine ever examined. Inspection showed a very extensive edema of the lower extremities.

Case XI. Mrs. S., Austrian, in the care of a midwife, twenty years old, I-para, case of congenital hip-joint disease, scoliorachitis pelvis, measuring less than three inches in the true conjugate, vertex presentation, full term child. The woman was in labor twenty-four hours. The bag of waters had ruptured five hours previously. There was dystocia, exhaustion, accelerated pulse, elevation of temperature, and a partially septic condition. It was too late to send her to the hospital for cesarean section, hence a craniotomy was performed, and the woman was left in a precarious state. By request of the family she was sent to the Lying-in Hospital the next day, where she died the same night.

Case XII. I was called by Dr. Schechter to see a woman in labor, III-para, age twenty-four. Previous two labors were normal but tedious. The woman was a hunchback and a dwarf; she measured fifty-two inches in height; her pelvis measured three and one-quarter inches in the conjugate. At seven o'clock in the morning the woman was doing her housework, and also went to the store while her labor pains were in progress. One half hour later, while on the toilet, she felt the bag of waters rupture with a gush and something fall out. She then sent for her physician, but continued to do her housework. Upon my arrival, I found a descended occiput pressing upon four coils of a prolapsed and nonpulsating umbilical cord, right below the pubic arch and the child dead *in utero*. After cutting the cord between two ligatures, I applied the forceps but was unable to deliver the child. Craniotomy being impracticable, I did, under anesthesia, an internal podalic version and extracted the child. The woman made a good

recovery. This poor patient presented a type of a tenement house lying-in woman, who was performing hard labor up to the very time of delivery. Not a nurse around, neither before nor after delivery, no warm water in the house, no clean clothes; asepsis in such cases is impossible. The husband was at work and the woman was cared for by neighbors. Case of "misery," "poverty," "hunger," and "dirt." What a sad mockery of obstetrical prophylaxis of the poor lying-in woman of the slums, who is working and scrubbing, while her labor pains are in progress, without a nurse around, left alone in a cold, dingy room!

Premature rupture of the membranes or a precipitated escape of the liquor amnii is frequent among women of the working class, and it is due to their injudicious work. It is their belief that exercise and work, even during the latter part of pregnancy, may bring about an easy delivery. If to the ruptured membranes is added a malposition or a malpresentation of the fetus, and patient is not taken to bed, and further exercises indulged in, a descensus and prolapse of the funis and compression of same may take place, thus causing premature death of the fetus. The infantile mortality in such cases is ranging as high as fifty per cent.

I wish to make a few remarks in regard to puerperal prophylaxis.

Antepartum Prophylaxis.—This implies frequent examinations beginning about the fifth month up to the end of pregnancy, and including measurement of the pelvis, the condition of the heart, lungs, viscera, kidneys, the existence of gonorrhea or lues, and the nerve state. One must pay attention to the breasts to prevent the so-called "milk fever," which is only an invasion of bacteria through the nipple by the way of the galactiferous ducts or way of lymph vessels (Bumm, Escherich). The unhygienic habit of the nursing mother of lubricating the nipple with her own saliva should be prohibited. Frequently have I seen a primapara nurse her own child and that of her neighbor's in order to establish a free flow of milk; and often pups are employed to pump the breasts.

Frequent ablutions of the genitals and sponging of the body are beneficial; full baths, especially in the latter part of pregnancy or during confinement, are not desirable. Edgar believes that there is a distinct risk of infection of the uterus in intrapartum tub bathing. The sedentary habits of some pregnant women bring about a sluggish circulation of blood, defective oxygenation, and predispose to obesity. We therefore meet with so many "fat women." They should be taught the benefit derived from out-of-door exercise.

The question of diet is entirely neglected by the average puerperal woman. There is no doubt that we can reduce the size and flexibility of the fetal head by a fixed dietetic regime to be followed by the mother. The so-called Prochownik's diet has been quite successful in cases of contracted pelvis. The author shows by a series of cases that the maternal diet can so influence the size, weight, and osseous development of the offspring, as to make it possible for the child to be born normally at full term, even though in previous confinements, instrumental means or the induction of labor were necessary. Races of people who subsist chiefly upon vegetables and fruits bear children easily. Prochownik gives his diet during the six weeks preceding labor. It consists mostly of vegetables; starchy and carbohydrate foods are prohibited.

Inactive life or sedentary habits lead to imperfect metamorphosis and induce deficient eliminative action of the body. We should, therefore, not allow the pregnant woman to crowd her system with highly nitrogenous or animal food, which augments urea. For the above reasons, starchy or carbohydrate foods should be prohibited. Uremia may be prevented by dietetic measures. Water should be largely used by the pregnant woman. There is a prevalent idea among the poorer class of women that the pregnant condition requires strengthening and "feeding up" and rich food is used *ad libitum*, thus augmenting the difficulties of her labor.

If an examination reveals the presence of fibroids, either at the lower uterine segment or in the broad ligament, or of ovarian cysts, an operation for removal of the same is indicated and the woman may be permitted to go to term. This procedure is safer than to allow the growths to increase rapidly in size and then interfere with labor, or even cause spontaneous rupture of the uterus. Multiple fibroids complicating pregnancy may be let alone if they are subperitoneal and located in the upper half of the uterus. The submucous or interstitial variety requires surgical interference. Spontaneous rupture of the pregnant uterus due to malignant growths occurs in forty-two to forty-four per cent. in multigravida and six or six and a half per cent. in primigravida. According to Winkel (cited by Edgar), in forty-nine cases of pelvic tumor obstructing labor, the maternal mortality was fifty per cent., while the fetal was ninety per cent. Pinard reports 0.06 per cent. fibroid tumors complicating labors. Litzman found among fifty-six cases of pregnancy with ovarian tumors, only ten normal deliveries. Of three hundred and twenty-one cases of ovarian tumors complicating pregnancy, seventeen per cent. aborted (Renny). If the operation is performed in the early months of gestation, few women abort. According to Renny's observations, twenty-three per cent. of the mothers succumb in the case of ovarian cysts complicating pregnancy, under the expectant treatment. Swan places the mortality at forty per cent. In one hundred and forty-six cases tabulated by Orgler, there was a mortality of 2.7 per cent. in ovariotomies done in pregnant women. Labor and the puerperal period seem to favor torsion of the pedicle, infection, and gangrene of ovarian tumor and peritonitis.

Intrapartum Prophylaxis.—The woman should be prepared as for a surgical operation. This can be accomplished in the poorest families, as it is inexpensive. A wash boiler can be improvised as a sterilizer and the baking stove can be made use of for dry sterilization. All articles coming in contact with the obstetrical field can be thus sterilized. Rubber gloves should be worn. Constipation should be attended to not only during delivery, but many days before it to prevent uterine infection from the *Bacillus coli*. A condition of enterosepsis, fecal toxemia, or stercoral intoxication is one which every practitioner has to fear, and against which he should assiduously guard. There may be an absorption of pyrogenic toxalbumins which could be removed by the emunctories of the system, if the bowels were moving freely. The report of the Lying-in Hospital shows fever due to stercoral intoxication in 3.61 per cent. of the women admitted. The occurrence of acute cholelithiasis or cholecystitis during the puerperium is favored by constipation and the mechanical obstruction of the outflow of the bile. An impacted rectum frequently causes obstruction to the descending head. The same condition is found in patients with

an overdistended bladder; in such cases forceps has been unnecessarily used when catheterization and an enema could have brought about a normal delivery.

If a malposition is detected early, one should be on hand at the beginning of labor and should watch the dilatation of the cervix and preserve the bag of waters as long as possible, and be prepared with anesthesia and assistance. One should not attempt to correct a malposition or do a version single-handed or without anesthesia, as many an infant has been asphyxiated at the last moment during extraction for want of proper help. In internal podalic version gentleness should be used. In the case of a rigid elongated cervix colpeurynters should first be used and one should not hasten at all hazards to get the child out, but keep in mind the possible rupture of the uterus and think of the mother's interests first. Traumatic rupture of uterus due to high forceps, internal podalic version, and accouchement forcé, occurs in 42 to 44 per cent. of cases in multigravidæ and 6 to 6.5 per cent. in primagravidæ. A correct diagnosis at the bedside is imperative, but unfortunately mistakes are frequent. One may watch for hours a nondescending head, only to discover, when introducing the whole hand into the uterus, that one is dealing with an occipitoposterior position which causes the dystocia and which position might have been corrected if recognized earlier. If the true conjugate measures less than three inches, and the only resort is craniotomy, the woman should be taken to a hospital and cesarean section performed, as craniotomy in tenement house surroundings, with a poorly nourished, anemic woman, often means sepsis or the death of the mother. The latest reports of cesarean sections in cases of contracted pelves, in women operated upon before sepsis set in, show good results to mother and child. In a series of five hundred cesarean sections collected in different countries, there was a mortality of less than 6.49 per cent. In the Sloane Maternity Hospital, the mortality following cesarean section was 5.4 per cent. "Blind force" in the use of forceps to non-rotated head or in a contracted pelvis has caused fractures of the pelvic bones, separation of joints, luxations, and has produced traumatism to the infant's head, face, nose, and eyes.

During pregnancy an increased mobility and relaxation of the pelvic articulations occurs physiologically and is due to the increased vascularity of these parts. Rupture of these articulations may therefore ensue, if too much force is used upon the pelvic bones. Spontaneous rupture of the symphysis pubis or of one or both of the sacroiliac articulations may be due to injudicious methods of delivery. In a case of Dr. Goldthwait there was a separation of the symphysis pubis, admitting one finger and also a movement of the bones at the sacroiliac articulations following delivery. Cases of partial subluxation of sacrum and displacement backward are also on record. The pain in such cases is intense and walking is difficult. Forceps traction in the wrong axis of the pelvis has brought about rectovaginal or vesicovaginal fistula or deep sulci and rents into the vaginal walls down to the pelvic bones.

Through the kindness of Prof. H. J. Boldt, I have had the opportunity of examining his patient, upon whom he performed three consecutive operations for injuries sustained during childbirth, following instrumental delivery. I have found a separation of the symphysis pubis of one and a half inches, and a marked luxation of the sacroiliac articulations. The pelvic bones could be pressed together with the hands. The woman was twenty-nine years of age, was a primipara, and had a normal pelvis. Eight days after the instrumental delivery, she presented the following lesions: a complete laceration of the cervix extending up into the lower segment of the uterus, the agglutinated raw surfaces nearly obliterating the uterine canal, a vesicovaginal fistula, a complete laceration of the perineum deep into the bowel, a laceration of the vagina and a prolapsed, retroflexed uterus. The woman was in the hospital for a period of three months. Her injuries to the soft parts are all repaired, but the separation of the pubic bones and the luxation of the sacroiliac articulations are still present.

The desire of some practitioner to "finish up" the case in a hurry, has caused misery to many a woman and child. I have always recognized in such cases the truth of the saying "the more haste, the less speed" and I always regretted my own attempts at expediting delivery. Trendelenburg and the knee-chest postures have been great adjuvants to me in cases of transverse, face, or brow presentations or prolapse of the funis whenever version was necessary, because they favored retention of liquor amnii and gravitation of the descending parts into the deeper pelvis. Walcher's position has been also frequently used with advantage.

The promiscuous handling by some practitioners and nurses of infectious diseases and labor cases should be deprecated. We are deliberately inviting streptococcus and other infections to the puerperal woman by attending cases of infectious nature, while in attendance on obstetric cases.

Anesthesia in the child-bearing woman should engage our attention. Textbooks assert that such women are tolerant to anesthetics, and are even stimulated thereby. To my mind a woman suffering from dystocia and having anesthesia administered after hours of exhaustion, is not prepared for narcosis and should be carefully guarded. At a recent case, my assistant, who is a careful anesthetist, had to discontinue narcosis and use artificial respiration, the woman nearly losing her life after inhaling one dram of chloroform. As she was not a subject of cardiac disease, we may ascribe this sudden asphyxia to her exhausted state.

Post-partum Prophylaxis.—One should see that a nurse is present before and after confinement; many a poor woman is left in charge of an aunt or friendly neighbor to do amateur work and many a physician has been called to face a placenta prævia or postpartum hemorrhage with no assistance in sight. If the perineum is lacerated, it should be repaired at once, if the traumatism is not too severe and the woman is not septic or exhausted. Concealment of laceration for professional reasons is deleterious to the woman and opens an avenue for infection as well as for future rectocele, cystocele, and descensus of the uterus. If one will also reflect that traumatism to the cervix produced during childbirth may be directly responsible for a future carcinoma, one will understand the great importance of prophylaxis of a timely repair. Post-partum high temperature, associated with chills and accelerated pulse, has been frequently ascribed to sapremia due to retained secundines and many unnecessary curettages have been performed. A closer inspection of the lacerated perineum or vulvovaginal space might reveal the presence of a diphtheria-like patch—a local streptococcus infection, which could be successfully treated with bichloride of mercury applications, or pure carbolic

acid swabbing followed by alcohol or iodine, applied locally and followed by dusting with aristol or iodoform, after which the fever and chills regularly subside.

After delivery one should use Credé's method for about an hour off and on; one must not rely upon the action of ergot or the antiquated pad and bandage to induce contraction of the uterus, but use manual compression and not leave the woman in a hurry, as many a post-partum hemorrhage has taken place after the departure of the physician, even in normal confinements, the bleeding being the result of subinvolution of the uterus. The absorption of ergot from the stomach is uncertain as to promptness and degree, and, if an immediate effect is desired, it should be administered hypodermically. Emergencies are frequent and one should be prepared to meet them with hypodermatic stimulation, hypodermoclysis, venous transfusion and rectal saline injections.

The local toilet of the puerperal woman of the tenement house is in the hands of the home-made nurse and consists in swabbing simultaneously the vagina, perineum, and anal orifice, thus infecting the parturient canal. One should order ablutions of antiseptic solutions by the means of a pitcher, which are less dangerous, and should forbid the use of either sponges or the hands. The above-mentioned nurses seldom, if ever, master the use of the catheter. If the postpartum woman happens to have retention of urine for sixteen to twenty-four hours, she is relieved only at the time of the physician's next visit, when the urine is found to be decomposed, turbid, and has an ammoniacal smell, and retention cystitis has appeared. Such cystitides are frequent among poor women and oftentimes tedious to cure.

The infant's bath, contaminated by meconium, nonsterilized diapers, and the hands of such a nurse does more harm than good; clean sponging is less dangerous to the eyes, mouth, skin, and navel wound of the newly-born. I prefer in such poor surroundings the dry treatment of the umbilical wound and no bath. I have frequently seen pustular eruptions developing on the body of the infant after such baths. Especially is this bathing dangerous for children upon whom circumcision has been performed. If the child is fortunate enough to escape infection from the finger nails of the religious quasi-surgeon, known as the "Mohel," it is still at the mercy of the home-made nurse who just as religiously administers this so-called bath by order of the operator, plunging the infant's body, with the fresh wound on the penis and half-healed umbilicus into the water. I have seen the infection carried from the wound of the penis to that of the umbilicus, with the development of an edema of the genitals and an extensive cellulitis of the gluteal region, the child succumbing as the result of unclean surgery. Hemorrhages following circumcision are frequent. As hemostatics "mohels" use vinegar, ice, or fire sponge; as wound dressings they use old washed linen of European importation, absorbent cotton, plain water, vaseline, etc.; more advanced "mohels" use aristol, boracic acid, and solutions of carbolic acid. A thorough scrubbing of the hands and finger nails, and antiseptic preoperative preparations, are out of the question. This kind of surgery is performed every day (some busy "mohels" having four and five operations each day), the outcome being entrusted to benignant nature. The family physician knows all about it, is utterly disgusted with the "mohels," and makes weak attempts to counteract their influence; a task, I admit, not easy of performance, in view of the religious sentiment involved. However, in families whose confidence the physician commands, he should endeavor by the gradual education of the people to interfere, and either to perform this operation himself, or to have absolute supervision over it.

The prophylactic treatment of the mouth and eyes of the infant is known to every practitioner, but not usually followed out. A drop of a 1 per cent. solution of nitrate of silver should be instilled in the eyes of every new born child. While writing the above, I came across the following resolutions of the American Association of Obstetricians and Gynecologists: "A committee on legislative measures has been appointed to prevent ophthalmia neonatorum, and it therefore resolved that definite steps should be taken to secure the enactment of such laws in various States as shall compel the use of proper measures of prophylaxis by the attendant at every confinement—the execution of such State laws to be under jurisdiction of the State Boards of Health."

In the city of Buffalo there exists a law that every midwife shall at once report to a physician the existence of ophthalmia neonatorum, under penalty of a fine for neglect to do so. From tables published by Köstling of Halle, in 17,467 births with no treatment, 9.2 per cent. of the infants developed ophthalmia, while in 24,723 births in which 2 per cent. of nitrate of silver was used, infection developed in only 0.65 per cent. of the infants. In 4,000 births at the Sloane Maternity Hospital in New York, during a period of six years, in which Credé's method was employed, not one case of ophthalmia developed.

Puerperal infection in private practice still ranges high. The report of the Chicago Health Department showed that 7.3 per cent. of all women dying in 1895, between twenty and fifty years of age succumbed to puerperal sepsis. When we consider that a very large percentage of labors are conducted by midwives, we may find an explanation of this alarming condition. In one of the most densely populated sections of New York, over 50,000 children were born in a single year, but only 20,000 of these were delivered by physicians.

Williams, in the "Book of Obstetrics," says, "In private practice it is doubtful whether the results are materially better to-day than they were before the introduction of antiseptic methods for the reason that the doctrines of asepsis have not yet permeated the rank and file of medical men, much less of midwives to whose care is committed a very large proportion of obstetrical cases."

So far we have been dealing with cases in which the already existing puerperium has been disturbed or aggravated by a neglect of prophylaxis. Let us now consider conditions in which pathological lesions of other organs become aggravated by the puerperal state. Phthisis pulmonalis is one of them. The appalling maternal and infantile mortality speaks for itself. Dr. W. Freudenthal shows that nearly every woman suffering from tuberculosis of the lungs and slight tuberculous affection of the larynx, invariably dies if impregnated and permitted to go to term, the child surviving the mother but a short time. According to Kuttner, 72 to 73 per cent. of children born from tuberculous mothers die several weeks after their birth. Out of three hundred and twenty-one deliveries of tuberculous women within one year, 67.9 per cent. of the children died and all of the mothers died. I knew a young woman who was suffering from

phthisis pulmonalis who died shortly after giving birth to a child, which lived only one year, having developed all the symptoms of tuberculosis—enlarged glands, peritonitis, and curvature of the spine. The father also became infected and died of tuberculosis. Pregnancy in such women should be interrupted—the earlier, the better.

Heart lesions and their secondary manifestations are also affected by pregnancy. Cases VII and VIII are types of this nature. Premature delivery or abortion frequently occurs in consequence of changes in the placenta due to heart lesions, or such children may develop ulcerative endocarditis and die. Charpentier reports 220 cases of heart lesions, of which only 128 women were delivered at term.

Diseases of the nervous system are also aggravated by pregnancy. Statistics show that from 14 to 15 per cent. of women in asylums suffer from a psychosis which developed during pregnancy, puerperium, or lactation. Psychoses during pregnancy developed in 2 to 3 per cent. of the cases. According to Jones (cited by Huggins) insanity occurred in 20.62 per cent. during pregnancy; 32.43 per cent. were associated with lactation. During the year 1900, 132,652 cases of child-birth showed a ratio of one case of puerperal insanity admitted into asylums for every 100 accouchements. I knew a young lady who was subject to slight attacks of dementia following a fright, which, however, was amenable to treatment, but which was aggravated by her marriage. She was seized with convulsions during the first attempt at coition, and became so violent during her pregnancy that its interruption was advised by some of our best neurologists. This woman has been in a sanitarium ever since. The space of this paper does not permit me to cite other conditions in which the puerperium produces a baneful influence on the mind and nervous system. In view of the above cited dangerous condition of the puerperal mother and her offspring, the medical profession is justified in resorting to premature delivery in such cases.

Résumé.—In this paper I have endeavored to give my personal observations of the lying-in woman of the tenement house districts, during a period of more than twenty years of obstetrical practice there. These are real pictures of conditions which exist in our great metropolis. The slipshod methods of midwives, "mohels," nurses, and some physicians should be condemned if we desire to be of real assistance to the puerperal woman and worthy of the purposes of our profession. In the prize essay on "Infantile Mortality During Childbirth," Dr. A. Brothers wrote the following: "There can be no question but that pelvimetry has been too much neglected with us; forceps and version have frequently been resorted to with resulting death to the child and often to the mother, where a little care in examination in the beginning might easily have shown that they were not indicated. Many a child and often a mother too could have been saved by careful pelvimetry with the resulting decision to elect cesarean section long before futile efforts at delivery had so jeopardized the life of both mother and child as to make the operation a hundredfold more hazardous. The elective cesarean section is the only operation in the future in cases of excessive contraction, and symphyseotomy for lesser degree. Perforation and craniotomy of a living child will have little place in the practice of the best obstetricians and in the textbooks in the near future." This was written more than ten years ago and the same neglect of prophylaxis exists to-day. Symphyseotomy, with its large percentage of infantile (18.5 per cent.) and maternal mortality (14.4 per cent.), and premature delivery in the thirty-sixth week, showing an infantile mortality of 55 per cent., are not to be commended; we must regard as the operation of election cesarean section. In the Medical Record (November 16, 1907) is described a "New operation for the permanent enlargement of a contracted pelvis," devised by Leon Maire, by which the pelvic bones are separated from 3 to 4 centimeters and even more permanently, thus permitting the subsequent labors to take a normal course. Let us hope that this operation will prove successful and become a boon to the long-waiting and suffering puerperal woman. But at the present time meddlesome midwifery in tenement houses, with blind fanaticism still clings to antiquated methods, and is just as religiously supported by the ignorant suffering woman who fears light and innovation. Every lying-in woman should be provided with a trained nurse during her puerperium and at least during the four days following. Our municipalities in conjunction with rich benefactors should extend this vital help to the poor woman who prefers her home to the hospital. Let the practitioner who comes in contact with the lying-in woman of the tenements impress upon her mind the necessity of antepartum prophylaxis, and the possible dangers that may follow its neglect. Long enough has the general practitioner practised the "*laissez faire*" methods in obstetrics, long enough have we listened to remarks about the "poor," "unclean," "nonintelligent," "multiparous" "woman of the slums," in contrast with her clean, aseptic, rich, well-bred, manicured sister of the beau monde. The improvement in the condition and prophylaxis of the latter lies in her education and enlightenment, and this duty, toward the poor, the family physician must and should perform. "Light, more light," is what is necessary in the houses of such women.

To those who are inclined to disregard these precautions, and who believe these pictures are painted in too vivid colors, I would refer to the gynecological clinics and hospitals of our large metropolis. Their records will show an enormous contingent of patients—a vast amount of gynecological material gathered almost exclusively from the slums of the city—women crippled for life as the result of traumatism inflicted during childbirth, the results of neglect of puerperal prophylaxis at the bedside of the lying-in woman.

Here, as elsewhere, "meddlesome midwifery" may mean "good gynecology."

1885 Madison Avenue.

AIR-BORNE INFECTIONS, THEIR MODE OF ENTRANCE: PREVENTIVE, ABORTIVE, AND AMELIORATIVE TREATMENT.

By W. SOHIER BRYANT, A.M., M.D.,

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Most infectious diseases have in our day been shown to depend upon a bacterial cause. In many of the diseases without a determined origin a bacterial infection must be inferred because of the similarity of the natural history of these diseases to those which have been proven to have a bacterial etiology. The evidence accumulated for many years, proving that air-borne infections are the most important, is now at our disposal. While the

infections conveyed in fluids or solids are less numerous and have fewer victims, the diseases carried by the air are very many and the list is constantly growing. Tuberculosis, scarlet fever, measles, pertussis, chicken pox, variola, influenza, pneumonia of various kinds, diphtheria, epidemic cerebrospinal meningitis, acute poliomyelitis, acute articular rheumatism, pyogenic bacterial infections, arteriosclerosis, acute nephritis, typhoid fever, etc., are now known to be air-borne infectious diseases.

How do these air-borne infections enter the body? Do they enter by the skin? Probably never without a solution of continuity. It is a noteworthy fact that the skin symptoms of the air-borne infections are always secondary to the lesions at the seat of infection.

Do these air-borne infections enter *via* the alimentary tract? On the contrary, except in a few well-known exceptions, such as typhoid fever, and occasionally tuberculosis, they never enter through this tract. Infection from swallowing bacteria is rare, except for purely intestinal diseases. Even tuberculosis of an intestinal or gastric origin is seldom met with.

The lung symptoms of the diseases under consideration are always secondary to previous local infection in other parts. We have no evidence to the contrary and we may say that the infections we are considering never enter through the lower air tract or lungs without a solution of continuity.

Where, then, do these infections gain entrance to the body? Probably at the spot where the first signs of disease are detected, namely, in the nasopharynx. It has been proved beyond shadow of doubt that this is the road of infection in the majority of the diseases we have named. Note the chronicity of the symptoms, primary local infection and later toxemia, and the sequence of local and general bacterial findings. Some of the best understood of the diseases which show these relations clearly are influenza, scarlet fever, epidemic cerebrospinal meningitis, acute articular rheumatism, diphtheria, etc.

It is a well-known fact that many contagious diseases begin with coryza. It is more than probable that all air-borne infections are, at the beginning of their course, local infections of the nasopharynx. So many zymotic diseases are known to enter the body through infection of the nasopharynx that it is probable that the other air-borne infections do the same thing. In spite of their general symptoms, some of these diseases remain throughout their course localized in the nasopharynx, the general symptoms accompanying the infection being due to toxemia alone and not to the presence of bacteria in the distant lesions. Noteworthy among such diseases are rheumatism, influenza, and probably acute poliomyelitis and endocarditis. Unfortunately, in the treatment of these diseases it is customary to consider only the toxemic symptoms and to disregard the focus of local infection.

What part of the nasopharynx is most open to infection? The lymphatic ring, because here the mechanical or anatomical resistance to inroads of animate or inanimate material is weakest. When the opsonic resistance is overcome the door is wide open for the entrance of bacteria into the system at this point.

Which part of the lymphatic ring offers the least resistance to bacterial invasion? The first tonsil or adenoid. Why? Because of its peculiar anatomical and physiological position. This lymphatic ring is composed of four parts: First, the nasal or first tonsil; second and third, the two faucial tonsils, and fourth, the lingual tonsil. The lingual and faucial tonsils are compressed and wiped by muscular actions which squeeze material from the crypts, stimulating the outward flow of lymph, and rubbing off any substances resting on their surface. The first tonsil has none of these mechanical aids to cleanliness and to the prevention of infection, for it lies in an angular recess of the upper air tract which forms a dead space where the forcible expiration of coughing, sneezing, blowing the nose, hawking, snuffing, etc., have the least abrading and cleansing powers. The wafting motion of the ciliated epithelium is thus reduced to a minimum at this point where there are two currents, one setting in towards the nose and the other towards the pharynx. The most important disadvantage of the first tonsil is that it cannot be compressed by muscular action or wiped by another surface. Moreover, the first tonsil, from the ease with which it suffers solution of continuity, appears to have the weakest membrane of any inner or outer surface of the body. The mucosa which covers it is very friable, especially at the pharyngeal bursa or median crypt. The mechanical result of these anatomical peculiarities is that secretions from this region tend to accumulate *in situ* and hence to collect air-borne particles. These secretions form a culture ground for infectious bacteria close to a door which may be thrown open at any time by a trivial constitutional accident.

Physiologically, the function of all the tonsillar tissue is to pour out lymph and eliminate bacteria. This tissue does not absorb or admit bacteria except under unusual circumstances.

Let us now consider the initial lesion in some of the diseases under discussion. In scarlet fever, epidemic cerebrospinal meningitis, influenza, and variola there is an acute coryza with initial symptoms beginning in the first tonsil. In diphtheria there is an acute infection of some part of the lymphoid ring. In acute rheumatism and arteriosclerosis and rheumatic endocarditis there is subacute inflammation of the first tonsil. The road of entrance of infection in these latter diseases is the first tonsil. This may be so in spite of any macroscopic change. There is usually at least a slight congestion. Hypertrophy of the tonsil is not an indication of bacterial invasion, but perhaps is rather an indication of abnormal effort at resistance. Infection through the first tonsil is facilitated by failure of general or opsonic resistance and local resistance. The latter is most important both because of its efficacy under normal conditions and because of the ease with which, under deranged systemic conditions of slightly defective metabolism or nerve reaction, it becomes ineffective. The chief factor in this local, mechanical safeguard to infection is the physiological mucous excretion which covers a normal mucous membrane. Abnormal systemic conditions are very apt to alter the normal mucus to a pathological product mechanically and bactericidally less protective. This same alteration in the excretion may follow local infection and tend to perpetuate it. An intact mucosa covered with normal mucus entangles foreign animate and inanimate particles, holding them in harmless suspension while it readily flows off or is wafted away by ciliary action to a place where its burden of bacteria can do no harm.

How to prevent infection. Have the nasopharynx kept in a resistant state by general hygiene which increases the opsonins, strengthens the mucous membrane, and produces a normal fluid mucous excretion. Locally this end is accomplished by

correction of pathological or anatomical obstructions and irregularities of the upper air-tract and by the local use of stimulating astringents.

How to abort infection which has already begun. If the initial infection is discovered before the disease is well under way, abortive treatment of the zymotic and contagious diseases is possible. The treatment is sterilization of the infected area and application of stimulating astringents to the first tonsil.

How to lessen the virulence of the attack. This can be done by the same procedure we used at an earlier period of the infection to abort the attack. The efficacy of this treatment is notable in acute articular rheumatism and its complications.

Conclusions: Since the first tonsil is the gate of invasion of almost all infectious diseases, and since it serves for a time at least as the seat of a primary, local infection, the diseases can be prevented or brought to a close by care and treatment of the first tonsil.

I wish to acknowledge my debt to Dr. E. D. Spear whose undaunted courage has inspired me for many years to profit by his example and instruction in this field of medicine.

THE PROBLEM WHICH CONFRONTS THE OTOLOGIST IN THE TREATMENT OF CHRONIC CATARRHAL DEAFNESS.

By CAROLUS M. COBB, M.D.,

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It is the general impression among the laity and even among a part of the medical profession, that patients with chronic catarrhal deafness continuously grow worse without much reference to any treatment to which they may be subjected. Unfortunately there is some ground for this impression, and it is the purpose of this paper to inquire into the reasons why this may be so. The history of these cases is that they grow worse by repeated attacks or relapses. It is not at all a difficult matter to relieve anyone of these attacks, but it has been a more serious problem to prevent a relapse. The child with catarrhal deafness as the result of adenoids has been the one notable exception.

It is a perfectly justifiable conclusion if a patient suffers from repeated relapses of any disease that the original cause has never been reached and removed. Applying this to the ear we find that practically all inflammations of the middle ear originate from infection by way of the Eustachian tube from the nasopharnyx or nose. It follows therefore that to cure one of these cases, *i. e.* to prevent relapses, it is necessary to find and remove the source of infection in the nasopharynx or nose. This has been done with but indifferent success since the time that the disastrous effects of adenoids upon the ears of children were called to the attention of the profession. The reason for the failure of other operations upon the nose and nasopharynx to produce the brilliant results that followed the removal of adenoids was, in my opinion, due to the mistaken idea that the effect of abnormalities about the nose and nasopharynx was one of mechanical interference with the proper ventilation of the Eustachian tube. If we change our point of view and look upon the congestion of the Eustachian tube and middle ear as active and due to infection rather than passive and due to mechanical obstruction, we shall be in a position to render these patients much more assistance.

I came to the conclusion several years ago that the key to the situation was that most common of all causes of nasal catarrh, obstruction to drainage from the ethmoid cells, and I further believed that I had discovered a peculiar formation of the middle turbinals which was an active factor in this obstruction. I published the results of my observations in the *Archives of Otology*, Nos. 2 and 3, Vol. 29, and in the MEDICAL RECORD of September 7, 1901. When I was asked to open the discussion of Dr. Casselberry's paper at the Atlantic City meeting of the American Medical Association in June, 1907, I again called attention to this condition. The following is the report of that discussion, given in the *Journal of the Association*, Vol. XLIX, No. 2: "Dr. Carolus M. Cobb, Boston, said that in a previous paper he had called attention to a peculiar formation of the middle turbinate which was closely associated with progressive deafness. When seen by anterior rhinoscopy the condition presents a well-marked picture. In the first stage the nasal chambers are rather narrow and generally free from signs of disease of the mucous membrane; the nasal chambers as they form the apex of the triangle superiorly are extremely narrow, and the middle turbinate is not at all prominent in front, but does extend downward in its posterior part, often below the inferior turbinate. The prolongation downward of the posterior part of the middle turbinate is often extremely thin on its front edge, but if investigated it will be found that it immediately grows thicker, and if the attempt is made to introduce a probe between it and the septum it will be found that it is very difficult and many times almost impossible. It is generally as closely applied to the outer nasal wall. The membrane does not have the appearance of congestion or inflammation in the first stage of the disease, but that part of the nose is thoroughly blocked by the bony enlargement of the middle turbinate. It forms such a tight wedge that it is often difficult and sometimes impossible to introduce the blades of the ethmoid forceps on either side of it when one attempts to remove a portion of it. Dr. Cobb has often been compelled to use a fine saw, introduced on the most accessible side, to make a small opening for the introduction of the forceps. The stage of the disease which is marked by this enlargement of the middle turbinate is closely associated with the beginning and progressive stage of the middle-ear disease. Before atrophy takes place he believes that it is possible to arrest the deafness by removing a part of the prolongation of the middle turbinate. Whether this disease is a part of the disease which affects the ears or whether the ear disease is caused by the nasal disease Dr. Cobb is unable to say, but from the fact that an operation on the middle turbinate, before it has reached the stage of atrophy, has a decidedly favorable influence on the ear disease he is inclined to believe that the nasal disease may act as a cause of the aural disease."

The question which naturally arises in regard to any new method of treatment is this, does it accomplish more than can be accomplished by the methods in general use? I can only answer this in so far as it relates to my own experience. After a number of years of observation I am fully convinced that I can accomplish more for my patients by this operation than by all other operations on the nose and throat with the exception of the removal of adenoids. During the last few months I have been fortunate in being able to examine many patients upon whom I operated several years ago, and I have been much gratified with the reports which

they have given me. In fully 80 per cent. of the cases the object aimed at has been accomplished, *i. e.* the relapses to which these patients had been constantly subject were prevented, the hearing had improved as a consequence, and what was of vastly more importance, the improvement was permanent without the necessity of constant treatment. This result I have never been able to obtain by any other method of treatment, even by constant attention to the ears over a long period, by the usual methods of politznigation and massage.

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NITROGLYCERIN IN THE TREATMENT OF NEURITIS.

By H. BURTON STEVENSON, M.D.,

RIDER, MD.

My conception of a neuritis as mentioned in this paper is a condition of inflammation of the sheath and interstitial substance of a nerve, and an infiltration between and degeneration of the filaments. I take this condition to differ from a neuralgia or functional neurosis.

My attention was first called to the use of nitroglycerin in the treatment of this condition by an article by Dr. William C. Krouss of Buffalo, in which he reports seven cases of sciatica treated with this drug with wonderful results. Having met with the same excellent results as Dr. Krouss in the treatment of sciatica I was induced to try the effects of nitroglycerin in cases of neuritis in other parts of the body, with gratifying results.

I wish to report thirty-two cases of neuritis treated with nitroglycerin. I have arbitrarily classified the cases with reference to their duration into acute, subacute, and chronic. Those of under ten days' standing I have called acute, under three weeks' duration subacute, and those over three weeks' duration I have named chronic. Under the heading acute I have placed twenty-one cases, distributed as follows: Six affecting the sciatic nerve and lumbar plexus. Two of sciatic involvement only, and two involving the lumbar plexus alone. Three cases of brachial plexus involvement, one bilateral and two unilateral. Four cases involved the intercostal nerves. Three were of supraorbital neuritis, and one in which both supraorbital and infraorbital nerves were affected.

I have classified six cases as subacute, situated as follows: One brachial plexus unilateral, one bilateral involvement of the radial nerve, one unilateral sciatic nerve affected, and three involving the nerves of the face.

There are seven cases termed chronic, distributed as follows: Four cases involved the sciatic and lumbar plexus, two the sciatic alone, and one a bilateral involvement of the brachial plexus.

The etiology was more or less clear in the group of cases. Fifteen cases were the result of grippe. One followed an attack of typhoid fever, and five were put down to exposure. Of the subacute cases three were neglected acute cases due to influenza, two were diabetic in origin, and in one case the causative factor was obscure.

Of the seven chronic cases five had passed through the preceding phases of the disease without relief when I saw them. Two were neglected grip sequellæ; gonorrhea was supposed to be the cause of two of this group. I have not included cases of neuritis due to pressure or injury in this group, as the treatment of such conditions is obvious.

Nitroglycerin was administered to all these patients in the following routine manner: Beginning with grain 1-100 every eight hours the interval was reduced one hour in every twenty-four until the full physiological action of the drug was manifest or the patient was taking one grain 1-100 every three hours, at which interval it was continued. The disagreeable flushing and headache were controlled by small doses of sodium bromide. When an idiosyncrasy was marked the interval between the doses was lengthened.

The effect of the treatment was marked in the acute cases within the first forty-eight hours. All of the twenty-one cases were discharged within one week, and some a few days before. The subacute cases responded rather more slowly, but were all cured within two weeks. The two diabetic cases in this group responded to the treatment in a few days, but returned in the course of several weeks after withdrawal of the drug. They, however, responded to the treatment when readministered. A marked diminution of the quantity of urine voided and the amount of sugar was noticed when the drug was used. The results in the chronic cases were not so brilliant. The condition was, however, improved in all. Three patients were discharged in three weeks, two in one month; one was greatly improved in three weeks but disappeared from observation. One became discouraged, while improving slowly, at the end of three weeks, and quit the treatment.

In the treatment of the chronic cases ammonium and potassium iodide was given in progressively increasing doses. It seemed to hasten the action of the nitroglycerin. The actual cautery was also employed over the course of the nerve affected. Appropriate treatment for associated conditions was instituted when indicated.

The physiological action of this drug would seem to indicate its therapeutic effect in this disease. By dilating the arterioles of the sheath and nerve the nutrition would be enhanced and absorption of inflammatory deposits would be hastened.

While I do not claim that nitroglycerin will cure all conditions of neuritis, my results justify the belief that it will cure the vast majority of such conditions, and it should have the preference over other treatments which fail more often.

Legal Responsibility in Cases of Death During Anesthesia.— The *British Medical Journal* of January 4, 1908, contains the following opinion on this point from the *English Law Journal*: "Where patients submit, or are subjected to, operations which require, or are better done, under anesthetics, they, and those whose subscriptions maintain the hospitals, are entitled to some guarantee that the utmost skill and care shall be used, and it is well that an inquiry has been instituted with reference to the very frequent deaths in hospitals under anesthetics, for it is not desirable to have these matters decided by a prosecution of doctors for malpraxis or manslaughter. As regards the apportionment of responsibility between the operator and anesthetist doctors differ, and lawyers have not yet been called upon to decide, if, indeed, the question is one of law rather than one of simple fact. In our opinion it really depends on who controls the operation. The necessity for an operation is usually, but not always, decided on by the operating surgeon. When it takes place the control of the operation must be in the operator's hands, but with a skilled anesthetist the fitness of the patient to take the anesthetic must, as a matter of medical judgment and skill, be largely with the administrator."

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PHYSICAL TRAINING IN THE ARMY.

THE condition of the rank and file of an army is a matter of supreme importance. It is of little use that soldiers should be versed in all the practices appertaining to their profession if they are not physically fit. In order to withstand successfully the strain of an arduous campaign, a good constitution and a well-knit frame are of far greater value than great muscular strength. It does not follow that because a man has abnormal chest and muscular development he is therefore best calculated to undergo the stress of long-continued exertion. On the contrary, the big man is now at a discount as a soldier, and the middle-sized or small, wiry man is found to be most suitable for waging warfare under present conditions. This fact was conclusively in evidence during the Russo-Japanese war, when the diminutive Japanese showed that they were more than a match in energy and staying powers for the bulky Russians.

Up to the finish of the recent great war in the Far East the German soldier was regarded as the model by military authorities generally. The methods of physical training in vogue in the German army were somewhat slavishly followed by those in control of the principal European armies. Gymnastic exercises were carried to excess, the aim being to have men who presented a remarkable chest development. Within the past few years, however, radical changes have taken place in the way that soldiers are trained. German methods are no longer looked upon as essential to the making of the ideal fighting man, and the large-framed muscular man of the Sandow type is now eyed askance by the up-to-date commander. It is recognized that, while it is an excellent thing that a man should be physically strong and possessed of iron thews and sinews, these qualities are not all that is required, and if in the acquisition of this muscular development he has been rendered unsound in other organs, his strength will avail him little and his value as a soldier will not be much. Physical training is necessary, but such training must be properly directed so that the material at hand may be put to the best account.

A few weeks ago, a meeting of the British United Services Medical Society was held in London, when this subject was fully discussed. The following propositions were introduced, in regard to the physical training of soldiers, by Dr. M. S. Pembery: (1) The true object of physical training should be the increase in the recruit's strength, agility, and capacity for muscular work. The power of endurance is far more important than a conventional military figure, or the acquirement of acrobatic tricks. (2) The principle of progression, from easy exercises of short duration to more difficult exercises of longer duration, is essential, especially for recruits. (3) Unusual movements or postures produce an amount of fatigue and expenditure of energy disproportionate to the work done. (4) The uniform development of all the muscles of the body is unnecessary and uneconomical. The soldier should specialize according to his work. Marching and digging are exercises in which infantry soldiers require progressive training. (5) A "strictly military position" does not assist greatly in the free and full action of the heart and lungs and the consequent development of the whole body. (6) The position of attention is an abnormal position, which can be defended only as a discipline. (7) In marching the natural movements of the arms and the swing of the body should not be suppressed. (8) So-called "breathing exercises" are based upon an erroneous interpretation of the physiology of respiration. In practice they may produce emphysema and increase the risk of infectious diseases. (9) The natural method to improve the "wind" is progressive running. A good "wind" is something more than a big chest; it is the capacity of the heart and lungs to accommodate themselves to the demands made upon them by muscular exercise. (10) The idea that artificial expansion of the chest gives freedom of action to the organs within is erroneous and pernicious. (11) Exercises which produce prolonged fixation of the chest during muscular work are unsuitable for recruits. (12) Training involves the accommodation of the recruit to an outdoor life. Work in the open air "hardens" a man, diminishes his liability to "colds," consumption, and other infectious diseases, and improves his appetite and nutrition. (13) Games have a more beneficial effect than irksome exercises. (14) Obstacle races, boxing, wrestling, swimming, bayonet fighting, and fencing should be encouraged. (15) Exercises with the horizontal bar, parallel bars, pairs of rings, Indian clubs, and dumb-bells should be discouraged. (16) Span-bending, abdominal and dorsal exercises are not free from danger. (17) The official tests of proficiency should be those which bring out a recruit's capacity to coordinate his muscles, to accommodate himself to the demands of muscular work, and to bear fatiguing exercises without undue distress. (18) Military competitions and display should consist of exercises of military value.

In the American army there has at no time been the attention paid to strictly gymnastic exercises, and to the so-called breathing exercises, which has been devoted to these in the European armies. In many respects the army authorities of Europe, outside Germany, and especially those of Great Britain, are adopting principles of physical training which have been practised in our army for many years past. So far as clothing is concerned, although the wearing of clothes can hardly be termed a branch of physical exercises, except perhaps in the case of some German and Austrian regiments, the British army may be said to have been modeled recently on the lines of the American army. As for the so-called breathing exercises, it was pointed out by a

speaker at the meeting that the rhythm of respiration is regulated by the percentages of carbon dioxide present in the blood, which is kept at a constant level of 5.6 per cent., a level which cannot be altered by any artificial exertion. There can be little doubt that progressive training in rational physical exercises is better calculated to render a man fit for and capable of a soldier's work than arduous and irksome gymnastic exercises. On the whole, then, it may be taken as proven that the German or Swedish gymnastic exercises do not turn out the soldier best fitted for the strain of a long-continued campaign, and that the propositions laid down by Dr. Pembery are in the main correct. As for the endurance tests recently imposed upon the elderly officers of our army, we have shown that they are unnecessary and liable to do more harm than good, except to the younger officers whose promotion will be more rapid when those higher in rank are invalided and retired with dilated hearts.

SLEEPING SICKNESS.

In America we have no direct interest in sleeping sickness, but now that this country has imperial concerns and tropical possessions, all the diseases which afflict the lands of the torrid zone naturally fall under the notice of the medical profession here. There is no known malady which spreads so quickly and causes so great devastation as does sleeping sickness. Immense districts of Africa have been absolutely depopulated by its ravages, and unless effective means be found to stay its course, very large tracts of fertile country will be rendered uninhabitable. The study of sleeping sickness has been carried on by scientists of several European countries for a considerable period, and during the past two or three years much energy has been thrown into the endeavor to discover means to check or abolish it. Perhaps the Liverpool School of Tropical Medicine has been the most energetic in this connection.

That the malady is spread by the *Glossina palpalis* has now been known for some years, and those who have studied the subject appear to have jumped to the conclusion that this fly is the sole agency by which the pestilence is disseminated. From a report, however, sent by members of an expedition dispatched to Rhodesia by the Liverpool School of Tropical Medicine in conjunction with the British Government and the British South Africa Company, this view of the situation is not borne out by the facts of the case. Undoubtedly this particular species is responsible for the transmission of the disease in probably the majority of the instances of sleeping sickness, and it may be said to be the chief agent of its dissemination. But that there are other infecting agencies besides this particular species of fly has been demonstrated by the work in Uganda, where successful transmission experiments were made with *Glossina fusca*. Indeed, the work on cattle trypanosomes and other experiments made during a comparatively recent period go to show that all biting flies, and those of the glossina genus in particular, must be looked upon with grave suspicion. Some observers in the Congo Free State have even accused *Stegomyia fasciata*, but it may be stated with some degree of confidence that the tsetse flies are the only insects which carry sleeping sickness, and that, therefore, the wholesale destruction of these flies would result in the checking or extirpation of the disease.

The etiology of the disease is in an unsatisfactory position, and efforts should be made to determine definitely what flies carry the virus. In the report referred to above, extracts from which were published in the *Lancet* of April 11, 1908, it is stated that the British South Africa Company, through Dr. Spillane, has taken elaborate measures to combat the spread of sleeping sickness. In order to set on foot a thoroughly successful campaign against the disease, it will be necessary that the authorities of all the countries in which it is found should combine. It will be useless for one country to take elaborate measures if the neighboring protectorate does nothing. The fact must be well understood that unless effective steps are taken many valuable portions of Africa will be rendered useless to white men.

The Pathogenesis of Localized Tetanus.

It has been sufficiently well demonstrated that the general convulsions, which form such a striking phenomenon of tetanus, are caused by the action of the toxin upon the central nervous system, for the elements of which the toxin seems to have a special affinity. Often, however, these convulsions are preceded by localized tetanic spasms, which involve the muscles in the neighborhood of the wound, that has served as portal of entry to the infecting organism. To explain this some authors have even questioned the selective action of the tetanus toxin upon the nervous system, claiming that the muscles may be directly affected by the poison. Writing in the *Deutsche medizinische Wochenschrift* of April 16, 1908, Dr. Conrad Pochlheimer opposes this view and claims that these local phenomena are due to processes in the peripheral nerves which are very similar in their nature to the so-called "short-circuiting" of electric wires, the stimuli to the muscles being transmitted directly from the sensory to the motor nerves instead of traveling the longer reflex arc to the central nervous system and back. Normally, such "short-circuiting" is prevented by the insulation property of the medullary sheaths of the nerves, but the tetanic toxin affects the sheath in such a way as to disturb its function in this particular. In support of this theory he cites experiments in which he succeeded in producing localized muscular spasms by the injections of chemical substances which had a solvent action upon the medullary sheaths. This view is of interest, not only because it explains the local spasms of tetanus, but because of its bearing upon the more general question of the etiology of such spasms in other diseases. It may well be supposed that the contractions and spasms accompanying such diseases as joint tuberculosis, cerebrospinal meningitis, etc., may be due to a like action of the toxins destroying the normal insulation existing between the sensory and the motor elements which lie side by side in the mixed peripheral nerves of the body.

The *X*-Ray Treatment of Leukemia.

Both the myelogenous and the lymphatic forms of leukemia have for some time been treated with *x*-rays, but a serious objection to this therapeutic measure has been its liability to cause a derma-

titis due to the prolonged and frequent exposures to the rays. Recently von Jaksch has been able to prevent this dermatitis by interposing a thin silver plate between the body and the rays, which at the same time did not alter the latter's action on the spleen and bone marrow. This objection done away with, the *x*-ray treatment of leukemia seemed more promising. Further experience, however, convinced von Jaksch that the rays have other deleterious effects in leukemia. In the *Wiener klinische Wochenschrift* of April 2, 1908, he cites the history of a case in which the treatment diminished the size of the enlarged lymph nodes and spleen, brought the total number of leucocytes to normal, reduced the pathological ones, and increased the polynuclears. After suspending treatment for two months the blood picture of leukemia returned, and the *x*-ray treatment was again instituted for four months. At the end of this time the blood no longer resembled that of myelogenous leukemia but showed a severe secondary anemia which continued for two months, when the patient died. The symptoms before death resembled those of anemia rather than leukemia, while the post-mortem findings pointed to an old chronic leukemia as well as to anemia. We thus see that while the blood changes found in leukemia were made to disappear, the functions of the spleen and bone marrow were distinctly impaired. It is true that leukemia not treated with the *x*-rays may terminate in a fatal anemia, but in the case cited v. Jaksch himself believed that the anemia was caused by too vigorous treatment. He says that prolonged *x*-ray treatment of leukemia as it is practised to-day may cause a secondary anemia, and though the rays need not necessarily be condemned in this class of cases, experience teaches that extreme caution should be observed in their use.

The Etiology of Myopia.

Although it is generally granted that any occupation requiring the accommodation of eyesight to objects close to the eyes form a very important cause for the development of myopia, yet the ultimate reasons for the injurious effect of such work have not yet been satisfactorily brought forth. Dr. Walter Thorner (*Berliner klinische Wochenschrift*, April 20, 1908) thinks that this effect is not due to the efforts of accommodation nor to the pressure exerted by the external eye muscles upon the eyeball in the converging motions of the eye; according to him the principal rôle is played by the difference in the movement of the eye in looking at distant and at nearby objects. In the former case the movements are smooth and continuous; in the latter, broken, discontinuous, and jerky. By means of a specially constructed ophthalmoscope he has been able to watch the motions of the eye fundus in one eye, while the other was used for sewing, writing, and reading, and the latter occupation proved to be accompanied with the greatest number of such movements, some eighteen to twenty-five thousand of them taking place in one hour. The portions of the sclera posterior to the attachments of the muscles bear the brunt of such movements, both their sudden beginning and equally sudden discontinuance tending to weaken it and increase its longitudinal diameter, thus rendering the eye myopic in character. This ingenious explanation of the etiology of myopia deserves further study from the ophthalmologists; its effect upon the prophylaxis of the troublesome condition, however, is in no way an encouraging one. If the cause of myopia lies in the mere act of reading, repeated too often and continued for too long a time, our usual precautions directed toward the selection of proper type, paper, and the abundance of light must play a very subordinate rôle in the prevention of this condition.

Amylnitrite in Hemoptysis.

Several clinicians have recently recommended amylnitrite in the treatment of hemoptysis due to pulmonary tuberculosis. This led C. Tochi (*Gazzetta degli Ospedali*, No. 11, 1908) to try it in a series of cases. He administered from three to five minims at a dose, in form of inhalation, and found that the earlier the drug was given the smaller the dose necessary to stop the bleeding. He believes that if the drug is administered when the first traces of blood appear in the sputum the hemoptysis can be prevented. When we consider that amylnitrite causes an anemia in the pulmonary circulation while producing a congestion of the general circulation, we can readily understand that it might be of benefit in hemoptysis. Tochi's success confirms the good results obtained by other clinicians with the nitrites in pulmonary hemorrhage.

News of the Week.

The Educational Rôle of the Hospital.—At a meeting of the Hospital Conference of the City of New York held at the Academy of Medicine on April 30, 1908, the following report relating to the proposed extension of clinical teaching in the hospitals of the city was presented by Dr. S. S. Goldwater, Chairman: "The Subcommittee on Medical Organization and Medical Education desires to report that during the year a number of conferences have been held with representatives of the College of Physicians and Surgeons (Columbia University), Cornell University Medical College, and the University and Bellevue Hospital Medical College (New York University), respectively, with a view to the formation of a plan for the extension of cooperation between the hospitals of the City of New York and the university medical colleges engaged in the preparation of candidates for the degree of Doctor of Medicine. The Subcommittee on Medical Organization and Medical Education has proceeded on the theory that a larger participation by the hospitals of the city in the work of medical education is desirable in the interest of the public health; and, furthermore, that an increase in the activities of hospitals along the lines indicated is bound to react favorably upon the hospitals themselves. The committee is not yet prepared to present any definite scheme to the conference for its formal indorsement, but hopes to be able to do so during the coming year. In the meantime, the committee desires to report that the faculties of the three colleges named agree that the time has arrived for such a readjustment of the curriculum of the medical school as will enable medical students in the fourth year, or graduating class, to spend additional time in hospital wards, either as clinical clerks and surgical dressers, or as students participating in the work of section classes. Action has been taken by the faculties of all three colleges to promote this object; and in order to indicate to the members of the conference the direction in which negotiations

are tending, the committee includes in its report the following brief quotations from letters addressed to it by college officials.

From Cornell University Medical College: "The faculty (of Cornell University Medical College) has ordered that the hours from 10 A.M. to 12 M. shall be devoted to extramural teaching for as many students as can be at liberty at that time, and in accordance with this resolution the faculty are ready to offer elective courses to our students under any approved teacher. Students in this college use Bellevue Hospital a great deal, and the material is so abundant that I doubt if many of them would like to go far away; nevertheless I sincerely hope that we may be able to post courses in other institutions."

From the University and Bellevue Hospital Medical College: "The faculty of the University and Bellevue Hospital Medical College has unanimously endorsed the principle of extramural teaching for section classes. We are trying at the present time to arrange a schedule of the lectures so as to permit a certain amount of extramural teaching during the afternoon hours. The faculty is prepared to recognize courses of instruction given in hospitals. These courses of necessity would be parallel in scope, time, and nature of instruction to those given by the college, and would be accepted in lieu of required college work."

From the College of Physicians and Surgeons (Columbia University): "The Committee on Administration of the Medical Faculty are of the opinion that the College of Physicians and Surgeons already possesses a sufficient number of section class courses and that it is not necessary to seek further facilities in this particular. It seems to the committee that the chance for development for the hospitals of New York is along the line of the foundation of medical and surgical clerkships. If the hospitals will agree to furnish our students these facilities it will be an addition to what we already possess. I am sure that the faculty will most highly approve of allowing students to take such courses. Each student will be allowed to take both a medical and a surgical clerkship during the fourth year."

Illinois State Board Examination.—A special meeting of the Illinois State Board of Health was held April 25, at which a formal resolution was presented approving of the proposition to subject all applicants for a State license to a practical examination covering one day. In addition there is to be a written examination, requiring three days for completion. It is thought that this plan will be put in operation in October, the time when the Board will conduct its quarterly examination.

The National Volunteer Emergency Service, instituted in 1900, has recently been reorganized by the election of Dr. James Evelyn Pilcher of Carlisle, Pa., as its Director General, and Dr. F. Elbert Davis of New York as its Adjutant General. Its work will be conducted along military lines, the details being worked out in three separate corps, a first aid corps, a public health corps, and a medical corps—the latter consisting of physicians, with rank from Lieutenant to Colonel, according to length of service, to whom are afforded special opportunities for emergency training.

Health Statistics of Chicago.—The death rate for the week ended May 2 was equivalent to an annual mortality of 12.9 per 1,000, being the lowest record for any week for the last six months, and nearly 32 per cent. lower than that for the corresponding week of 1907. The deaths reported were 536, 87 fewer than for the preceding week, and 208 fewer than for the corresponding week in 1907. All the important diseases except heart disease, cancer, and bronchitis show a lower mortality than for the preceding week, and for the first time in a year no death from typhoid fever was reported. Pneumonia caused 68 deaths; consumption, 67; heart diseases, 54; violence, including suicide, 40; acute intestinal diseases, 32; cancer, 29; nephritis, 28; bronchitis, 22, and nervous diseases, 20. There were 10 deaths reported from diphtheria, 4 from scarlet fever, 3 from influenza, 2 from measles, and 1 death from whooping cough.

Status of the Prescription.—The following declaration was adopted at the April meeting of the New York branch of the American Pharmaceutical Association: (1) The prescription should be a signed and dated order from the physician to the pharmacist to prepare and deliver certain medicines, etc., to the patient. The prescription should be written plainly and distinctly, in ink if possible. It should bear the full name of the prescriber, either printed or written, and should state the name of the patient, and if a child, also the age. A telephoned prescription, that is, a prescription which in case of emergency the physician telephones to the pharmacist, must in all cases be repeated by the pharmacist, so as to avoid misunderstandings, and should be followed, especially in the case of potent drugs, with a written order from the physician. In case the physician intends to prescribe an unusually large dose, the quantity of drug should be underlined and be followed by an exclamation mark. General directions, like "As directed," etc., should be avoided. (2) The pharmacist who dispenses the medicine should invariably retain the original prescription for future reference, and as a record, for a limited period, say five years. This for his own protection, as well as that of the prescriber and the patient. (3) The medicine prescribed should be supplied not more than once on the same prescription, in the following instances: (*a*) If ordered by the prescriber "not to be repeated" or marked "Ne repetatur"; (*b*) if it contains medicinal substances, commonly called narcotic or habit forming drugs; (*c*) if asked for by some person known not to be the original holder. (4) One copy of the prescription may be furnished to the patient, but to no other person. This copy should be marked "copy" or "copia," and should be plainly and distinctly written in ink. In the event of the prescriber not desiring a copy to be given, he should note this on the prescription by writing the words, "Give no copy." It would be desirable to have such notation appear on every prescription. Under no circumstances should a copy of the prescription be given, without consent of the physician, after the patient has recovered.

No Canteens for Soldiers' Homes.—The House of Representatives last week voted to keep the canteen feature out of the Soldiers' Homes; the vote was 167 to 46. Since the privilege of drinking beer at home has been denied the old soldiers, and they have been driven to the dives outside the grounds for the alcohol they will, if not must, have, the number of cases of acute and chronic alcoholism has very markedly increased.

Insufficient Public Hospital Accommodations.

—The local visiting committee of the State Charities Aid Association has sent to the Board of Estimate a statement calling attention to the urgent need of additional provision for the sick, particularly the tuberculous and the infirm. Tuberculous patients are most in need of better accommodation, according to the report. Last winter the Metropolitan Tuberculosis Infirmary housed eight hundred patients, an excess of three hundred over the number that can be cared for properly. Provision has been made for the erection of a wing on the tuberculosis infirmary of the Metropolitan in which ninety advanced cases can be cared for, but this is the only permanent relief in sight. Additional accommodation for the tuberculous will be made at Bellevue Hospital by means of the old Staten Island ferryboat *Southfield*, which will be moved at the foot of East Twenty-sixth street and used as an adjunct to the tuberculosis ward of the hospital. The Brooklyn hospitals need repairs and additions badly, the report says, and the almshouses in Flatbush and Blackwell's Island are disgracefully overcrowded.

Child Labor.—On Saturday of last week the House of Representatives unanimously passed a child labor law for the District of Columbia, of which the following are the main features: No child under fourteen to work in factory or store or anywhere else during public school hours, or before 8 o'clock A.M. or after 7 o'clock P.M. Children between fourteen and sixteen employed in any factory or shop must procure schooling certificates. No child under sixteen to work more than eight hours a day or forty-eight hours a week. No boy under ten or girl under sixteen to sell newspapers or other merchandise, or engage in bootblacking on the streets, and all boys under sixteen are required to obtain a permit and badge to pursue these occupations. The National Conference of Charities and Corrections considered at its recent meeting the need of laws to protect children from the evils of factory work. Those who took part in the discussion spoke earnestly against the employment of children in cotton factories. Dr. A. J. McKelway of Atlanta, Assistant Secretary of the National Child Labor Committee, made an earnest plea for legislation for the protection of children. He hoped the day would come when child labor would not be permitted in any State in the Union. Addresses of similar import were made by Professor W. H. Hand of the University of South Carolina and Miss Jane Addams of Hull House, Chicago.

Enlisting the Young in the Fight Against Tuberculosis.—The Young Folks' League for the Home Treatment of Tuberculosis has been organized and has pledged itself to raise funds for the purpose of establishing and maintaining a depot which will distribute free every day three quarts of milk and six eggs to each tuberculous patient who comes with proper recommendations after his case has been investigated by the hospital visiting nurses. It is planned to aid the tuberculous poor throughout the entire city in this manner by district division and management.

Dr. Albert Jansen of Berlin will be the guest of the Section on Laryngology of the New York Academy of Medicine at a meeting to be held on Saturday evening, May 23, in the Academy building. Dr. Jansen will read a paper on "Frontal Sinus Disease."

The Plague in Venezuela.—A dispatch dated May 10, from Curaçao, says that the latest news from La Guayra was that there were twelve cases of bubonic plague in the hospital there on May 7, and two suspected cases are under observation. Instructions have been issued to the employees on the Panama Canal to kill all the rats and mice that they can reach by traps and poison.

American Surgical Association.—At the annual meeting of the American Surgical Association, held May 4-6 at Richmond, Va., the following officers were elected: *President*, Dr. C. B. G. Nancrede, Ann Arbor, Mich.; *Delegate to the American Congress of Physicians and Surgeons*, Dr. Herbert L. Burwell, Boston, Mass.; *Secretary*, Dr. Robert G. Leconte, Philadelphia; *Treasurer*, Dr. Charles A. Powers, Denver Col.; *Recorder*, Dr. Richard H. Harte, Philadelphia. Philadelphia was decided on as the place of meeting in 1909.

Medical Society of the State of California.—The thirty-eighth annual meeting of this society was held at San Diego during the last week in April. The following officers were elected: *President*, W. W. Becket, Los Angeles; *First Vice-President*, Fred Baker, San Diego; *Second Vice-President*, E. G. McConnell, San Francisco; *Secretary*, Philip M. Jones, San Francisco.

Arizona Medical Association.—At the annual meeting of this association, held recently at Tucson, the following officers were elected: *President*, A. W. Olcott, Tucson; *First Vice-President*, J. W. Foss, Phœnix; *Second Vice-President*, C. E. Yount, Prescott; *Third Vice-President*, A. L. Gustetter, Nogales; *Secretary*, J. W. Flynn, Prescott; *Treasurer*, E. R. Ketcherside, Yuma; *Councilor*, J. W. Bacon, Tombstone. The next meeting will be held at Prescott the third Wednesday and Thursday in May, 1909.

Obituary Notes.—Dr. HOWARD CALHOUN died of tuberculosis at Philadelphia on May 3 at the age of twenty-five years. He was a graduate of Jefferson Medical College, and after serving for a short period as resident physician in the Trenton Hospital became a resident physician in the Philadelphia Hospital, where he served for two years.

Dr. HORACE M. HOLMES of Adams, Mass., died on May 3 at the age of eighty-one years. He was born in Waterville, Vt. After graduating from the Bakersfield Academy he went to Illinois, where he taught school, one of his pupils being John Hay, later Secretary of State. He soon took up the study of medicine, and was graduated from the Berkshire Medical College in 1852. After practising for a short time in Cambridge, Vt., he moved to Adams, where he practised medicine for over half a century. He was president of the Berkshire County Medical Society in 1881 and 1882.

Dr. CHARLES HOMER PERRY of Worcester, Mass., died of pneumonia on May 1 at the age of seventy-three years. He was born in Worcester March 17, 1855, and was graduated from Brown University in 1859. He studied medicine at the University of Pennsylvania, but interrupted his studies to serve as a surgeon of volunteers. At the close of the war he entered the Bellevue Hospital Medical College, where he obtained his degree in 1866. He returned to Worcester and practised there, with a break of two years in West Medway, up to the time of his death. Dr. Perry had been a subscriber to the MEDICAL RECORD from its first issue.

Dr. H. BYRON BAGULEY of Wheeling, W. Va., died on May 1, at the age of fifty-one years. He was born in Wellsville, Ohio, and studied medicine at the Cincinnati College of Medicine. Immediately after graduation he went to Wheeling, where he practised continuously up to the time of his death. He was Surgeon-General of the National Guard of West Virginia.

Dr. Joseph O. Farrington, seventy-eight years old, and a native of this city, died May 4 in the Johns Hopkins University Hospital, Baltimore, whither he had gone for an operation, which was performed two weeks ago. Dr. Farrington had been in continuous practice since 1857, in which year he was graduated from the New York University Medical School. He was elected president of the Harlem Medical Association in 1872.

Dr. Louis Debarth Kuhn died May 7, at his home in Brooklyn, in the seventy-ninth year of his age. He was born in East Berlin, Pa., and was graduated in pharmacy and in medicine from the University of Pennsylvania. He served for many years as surgeon to the expedition which surveyed the boundary line between British Columbia and the United States.

Dr. George Schlereth, formerly of this city, died at New Rochelle on May 6, of pneumonia. He was born in Bavaria in 1844, and was graduated from the University in Bamberg, Germany, and also from the Polytechnic Institute in Munich. He came to the United States in 1873, and was graduated from the College of Physicians and Surgeons. He retired from practice five years ago. Dr. Schlereth was for several years physician at St. Francis's Hospital, and was a member of the County Medical Society. He leaves a widow and a son, both of whom are practising physicians.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described, with remarks on their appropriate treatment.

IV.

New York, December 8, 1907.

Dear Doctor:

With the sincere hope that this communication may merit your consideration, I take the liberty of addressing to you some thoughts on a subject which to me is of vital importance.

Deeply impressed by the striking and beautiful conceptions of "The Autocrat of the Breakfast Table," which I have just finished re-reading, a trend of ideas has been excited in my naturally reflective mind, which leads me to confide in you and submit to your judgment that which I have kept even from those nearest me. "And why," you ask, "do you entrust this to the judgment of a stranger, one whose Ego cannot be expected to be in sympathetic accord with your own, unknown and beneath his notice?"

Well,—during my nineteen years of schooling, I have been under many tutors and instructors, but have as yet found few *real teachers*. The average "college professor" is in my estimation often but a poor excuse for that which he represents. You may imagine my pleasure then to make at ——— the acquaintance of one who showed in the highest degree the faculty of presenting his subject in such a form and manner as to make the maximum impression on a receptive mind.—one who, on my mind at least, has left "scars" of live truths, not medical alone. In fact, you impressed me as a social molecule of unusually high and stable intellectual potential, specialized into its highest form. I, also, feel possessed of a certain potential, but fear for its stability, and whether the radiant energy of yours and mine will vibrate in synchronous harmony, which is my desire, remains to be seen. (In all seriousness, I beg of you to interpret this rightly, for though I would expect the average man to see in this but the vagaries of a fantastic imagination loosing itself in a jargon of technical terms, of you I expect more!).

From past experience I know I can trust you to tell me frankly and candidly the unvarnished truth, and if, through my conceits, I am likely to be "doomed to the pangs of undeceived self-estimate," as Holmes has it, I shall experience a genuine pleasure and relief if I can learn from you that I am really only one of the many ungifted with but a "weak flavor of genius, so detestable in a commonplace person." No, I don't think I overestimate myself, but what I may overestimate is my abilities and natural powers of resistance in coping with an environment such as that of New York, should I attempt to carry out the notion to establish myself here. This, as bearing directly on my future, is something I would like to ask you about.

Of one thing I am aware: that through an innate desire for truth and love for pure science, I have now for years (unfortunately through my exclusion and reserve missing much wholesome and broadening social intercourse) led a laboratory existence with books my sole companions, and these, on account of their limited sphere, have caused a localized development confined principally to what I am pleased to call the "higher science"—which harmonizes the cold logic of the mathematical and physical sciences with the real nature of religion, the passions, and all the actions and reactions of mental energy. As a result, I feel and know there have been engendered in me a number of intellectual germs, which to me and my fellow mortals promise much for the future, but whether this green fruit will ever mature, time and the test, "Qu'est ce qu'il a fait" alone will tell. This much I know,—but what I do not know and what I fear, is that coincidently with this one-sided mental development there has taken place a corresponding degeneration, and that the correlation and controlled physiological function of the elements which form the normal *Homo sapiens* have been permanently disturbed, by perhaps a pathological organic change.

This is what I most desire to know from you before it is too late. I take a calm philosophical view of the matter, and believe that, should such a condition exist or be impending, proper precautions may be taken in time, both for the sake of the individual and the community at large. To what do I refer?—Incipient paretic dementia!

I have implicit confidence in you and expect from you the simple plain facts. My previous visits to you and the "advice" which I had wished from you before, but up to this time not asked, had reference to the above to enable you to make some personal observations. Knowing also the diagnostic value of a letter, I send you this which I think you will find offers ample material.

It is good advice to say "Know thyself," but with the best intentions I find myself as much in the dark as before. It is to satisfy my doubts, to see myself as others see me, that I have made this personal appeal to you.

Should you find (what is my present diagnosis), that I am only one of the cases of aggravated neurasthenia, so common in this country, then there may still be a future for one who in his rambling investigations of chemical and physical phenomena has been able to produce a crystallized form of pure ——— which puzzled a professor of chemistry in ——— University, to preserve perfectly in permanent form not only the beautiful "efflorescenses" of H_2O crystallized in such a variety of fern-like forms on the show-windows of shops when the mercury seeks to hide in its bulb in win-

ter, but also that type of evanescence, the soap-bubble, with all its diffractive phenomena fixed and preserved unchanged—and who signs himself,

Most respectfully,

———.

P. S.—I know how busy you are, and how little I can expect from one whom I have perhaps bothered before; I am not even sure that you consider me worth recognizing as a friend or that I may find in you a friend; however, I expect at least a word, if only to say that you would spare me ten minutes of your valuable time and favor me with a diagnosis. If I do not hear from you at all, I shall feel that I have offended you and earned your contempt. This is my last word to you, though you may hear from me in later years.

DEAR SIR:

Deeply impressed by the striking and concluding words of the 22d verse of the fifth chapter of St. Matthew, I restrain my first impulse and say instead "Come from the deep-domed Empyrean down to the earth and be simple and humble."

If you ask in good faith, are you threatened with, or are you entering upon Paretic Dementia, I say to you most emphatically that you are not. Nor are you "one of the cases of aggravated neurasthenia so common in this country." You are not even an unaggravated case. In fact, you are not a case at all. You are not ill. You need a new perspective glass, not to view your own worth, but to aid you to get an appropriate idea of the relation existing between you and the world. You have seen yourself as if reflected from a convex mirror. I suggest that you will get a far more satisfactory idea of yourself if you devote some years to observing the image that is reflected from the other side of the mirror. If you adopt this suggestion the world will discover you if you have merit. Solomon was an uncommonly wise man, as you have heard. Amongst other things that he said is that wisdom is the principal thing; therefore get wisdom; but with all thy getting, get understanding.

In your profession, as in peace, there is nothing so becomes a man as modest stillness and humility. Even a fool when he holdeth his peace is counted wise.

Yours sincerely,

———, Ill.
Feb. 28, 1906.

DEAR SIR,

I take the liberty to address you, I being a stranger, but perhaps you will forgive, when I tell you my age is 17, years.

I wish to ask you a few questions which I trust you will kindly answer. My name is Everette ———, age 17 yr. Do you think that a boy my age could have seminal losses & not know when they take place? Do you think it a sign of health when the cavity or tube of the Penis looks watery, I have been told so by Dr. here in this city? Do you think it natural to sweat around the genital organs to notice it, Do you think these sweatings are greater in winter weather? That is my case. Do you think it very natural to take cold in the Penis, as in the nose, & lose a little fluid? Do you think that after puberty these sweatings are felt more?

Do you think a man can feel the scrotum growing? I mean a stretching sensation. Do you think these sweatings are caused by a long contracted foreskin this Dr. is my case exactly.

But I can't believe what makes me so nervous, in everything, do you think worry and catarrh in nose causes it. (I have catarh also).

Beging your pardon again

I remain truly yours

EVERETTE ———.

DEAR EVERETTE:

Do you think it makes the slightest difference to any one in the world besides yourself that you have made the discovery that you have a penis? If you do, you are mistaken. My advice to you is to forget it.

You can't believe what makes you so nervous, but I think a flogging would cure you.

Do you think you are the whole thing?

Do you know that you might be quite a happy boy if you made yourself go without a meal every time you thought of yourself and your anatomy?

Do you think you could manage to get on for the next four years without mentioning the word I? Do it. It may be health to thy navel and marrow to thy bones.

Yours very sincerely,

Correspondence.

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

[From Our Special Correspondent.]

IMMUNE SERA FROM CITRATED AND CLOTTED BLOOD—MEDICAL EDUCATION IN THE MALAY STATES—SANITATION OF PROVINCIAL TOWNS—QUARANTINE AGAINST PLAGUE IN CEYLON—PHILIPPINE WATER SUPPLIES—SANITATION IN THE BRITISH ARMY—HEALTH CONDITIONS IN THE PHILIPPINES—PRISON SANITATION—BERIBERI IN MANILA—TREATMENT OF ROENTGEN BURNS—CANCER IN THE TROPICS—APPARENT ABSENCE OF THE LIVER—OBSTETRICS IN THE PHILIPPINES—OFFICERS—RESOLUTIONS REGARDING THE DISPOSAL OF HUMAN EXCRETA.

MANILA, P. I., March 1, 1908.

THE third scientific session of the fifth annual meeting of the Philippine Islands Medical Association was called to order by the President at 10 A. M. The first paper read was by Dr. E. Henry Ruediger, Biological Laboratory, Bureau of Science, and Associate Professor of Pathology and Bacteriology, Philippine Medical School, entitled "A Qualitative and Quantitative Comparison of Immune Sera Obtained from Citrated Blood With That Obtained from Clotted Blood." Repeated tests of horse blood and ox blood, to which ⅛ per cent., ¼ per cent., ½ per cent., and 1 per cent. of potassium citrate was added, showed that ¼ per cent. potassium citrate prevents clotting. In blood containing ⅛ per cent. potassium citrate partial or complete clotting frequently takes place. After centrifugating the corpuscles out of the citrated blood and comparing the neutralizing value of the citrated antidiphtheritic, antitetanic and anticholera serum with that of the serum obtained from clotted blood, no difference was found between clotting within twenty-four hours. From citrated horse blood from 20 per cent. to 25 per cent. more serum is obtained than from clotted blood, while citrated ox blood yields only about 5 per cent. more serum than the clotted blood.

The next number on the program was a brief address with regard to the condition of medical education in the Federated Malay States by Dr. R. D. Keith, Physiologist and Assistant Pathologist, Straits and Federated Malay States Medical School, and delegate from the Straits Settlements. Dr. Keith laid particular stress upon the fact that in educating Malays great care must be taken not to overcrowd their minds with exhaustive data. The best success was to be hoped for whenever a moderate amount only was taught them. He was also of the opinion that the ultimate solution of the sanitary problems in the Orient could be expected only through the aid which could be rendered by properly educated native persons who are thoroughly conversant with the language and customs of the people. At the present time we should not expect as high a standard of medical education among them as obtains

now in the first-class schools of Europe and America. He thought that at least several generations of development would be necessary before an equal amount of scientific attainment could be expected from them.

The next paper on the program was that by Dr. Y. K. Ohno, Biological Laboratory, Bureau of Science, entitled "Aggressin Virulence and Local Immunity."

The next paper, entitled "Sanitary Conditions and Needs in Provincial Towns," was read by Dr. Thomas W. Jackson, Contract Surgeon, United States Army. Dr. Jackson said that the sanitary laws and ordinances in the islands left little to be desired, but that there was a woeful lack of enforcement. He said that in his opinion there had been no progress made in this direction during the last few years in the provinces of the Philippines, and that he felt that on account of the fact that much money was being spent in other educational lines, at least a portion of this sum should be devoted to sanitary purposes. He drew a vivid pen picture of the insanitary conditions that exist in provincial towns, calling attention to the disposal of human excrement, which is practically always accomplished by means of the hog, and the unclean appearance of the streets and back yards, and that some summary measures should be taken with the provincial officials for permitting such conditions of affairs to exist. He said that in Manila, on the other hand, striking changes were everywhere in evidence. Great improvement in highways, buildings, sewers, hospitals, schools, and churches, and better conditions as to the control of epidemic diseases were strikingly notable. He felt that the time had come when force should be used in making it obligatory upon the municipal officials of the provinces to abate the nuisances to which he referred.

In the discussion which followed Dr. Heiser said that after all, in his opinion, sanitary reforms which were not supported by a healthy public sentiment must inevitably fail in the end, and that force in the long run had accomplished few permanent sanitary reforms. The economic condition of the islands was such that only limited sums were available for sanitary purposes, in view of which he thought it was better not to risk encountering the passive resistance and opposition of the people, as would be done by enforcing strictly the minor sanitary ordinances, because the opposition which would undoubtedly be engendered in this way would probably defeat the much larger plans which the Bureau of Health has been steadily carrying out during the past few years. To put the matter briefly, he said he believed that it would be much better to spend $10,000 vaccinating the provinces and thereby probably save 1,000 lives per annum, than to devote this sum to municipal street cleaning and abatement of the small mosquito breeding places and providing for the disposal of garbage, which at the best could only be expected to save, comparatively speaking, but a few lives. He laid particular stress upon the fact that from a sanitary standpoint this is practically virgin territory and that the resources for combatting the different conditions were at best very limited, and that he believed that the efforts should be concentrated upon those measures which would save hundreds, as compared to other methods which would save only dozens. He stated that, of course, it would be most desirable to carry out both plans, but under the present conditions it was only possible to have one or the other, in view of which he thought it was best to choose the plan which would give the greatest results. He thought that the fact that there were 6,000 less deaths from smallpox in some six provinces during the past year than has been the case in any other time in the history of the islands, and that artesian wells had been bored in many of the towns, which had resulted in a reduction in the death rate from 40 per cent. to 20 per cent., and that over one-half of the lepers in the Philippines had been segregated at the Culion Leper Colony, which had already resulted in a reduction in the number of lepers from 4,000 to 3,000, and that, with the exception of the provinces which could be reached from Manila by land, no cholera had occurred in the last few years, and that arrangements are now made to remove the more violent cases of insanity from all the provinces to a properly equipped insane hospital, and that many of the modern provincial market buildings which had been recommended, had actually beeen constructed and were in use, would justify the policy which is being pursued and would indicate that much progress has been made in the provinces.

The next number on the program was a brief address by Sir Allan Perry, the Honorable Principal Civil Medical Officer of Ceylon, and delegate from Ceylon, upon the value of the quarantine restrictions enforced at Colombo, Ceylon, in preventing the introduction of plague into that island. Sir Allan laid special stress upon the fact that they are in daily communication with plague-infected ports of India, which are less than forty-eight hours distant, and when it was considered that more than a million cases of plague had occurred in India last year he was of the opinion that their measures were entirely effective. He also gave considerable credit for this happy result to the Indian medical officers, who examine the personnel of vessels before the ships leave the shores of India, and frequently remove cases of plague in the early stages before the vessel sails. He said that in a number of instances plague-infected vessels arrived at Colombo, but these were promptly quarantined and no spread of the disease had taken place.

In the discussion which followed, Dr. Clark of Hongkong and Dr. Keith of Singapore were of the opinion that the equatorial belt—in other words, places which are located within 15° of the equator—for some reason or other were not likely to be visited by a serious plague outbreak. In support of this theory, Dr. Keith called attention to the fact that Singapore was in the direct line of communication, both from India and Hongkong, and other infected places, and that almost invariably all vessels came alongside the wharves; that no particular precautions were taken to prevent rats from coming ashore, and that it frequently happened that plague was found among the rats at Singapore; that the sanitary conditions among the poorer classes, if anything, were worse in Singapore than in any other of the cities in which plague was present, that the *Pulex cheopis* was abundantly found, and that, in spite of all these apparently favorable conditions, there were never more than fifteen cases of plague per annum in that city.

The next paper, entitled "A Biological Study of the Water Supply of the Philippine Islands, with a Description of a New Pathogenic Organism," was read by Dr. Ralph T. Edwards, Biological Laboratory, Bureau of Science. In brief, Dr. Edwards' paper showed that practically all the natural sources of water supply in the Philippines contained amebæ and that the only water which had been found not to contain them was that taken from artesian wells. He made a number of experiments with different filters, but came to the conclusion that the only safe water to drink was that which had been either distilled or boiled. In specimens taken from a well in Calle Cabildo, Intramuros, Manila, a pathogenic bacillus was detected, which he has named *Bacillus Cabildonis*. It is a single bacillus of a breadth of less than one micron and of an average length of two microns. It stains easily with the standard watery dyes, takes a polar stain with Ziel-Nielsen carbol-fuchsin, decolorizes by Gram's method, has no capsule, vacuoles, or crystals, is actively motile, is a facultative anaerobe, grows well either at room or body temperature, grows well on ordinary media, and on transparent media a greenish fluorescence develops; on nutrient broth it remains alkaline and develops no odor; milk is not coagulated, digested, or acidified; no gases form with saccharose, glucose, glycerin, or lactose; solidified blood serum is not peptonized; growth on potato is abundant; indol is produced in sugar free peptone solution, and the organism is of extreme pathogenicity for small animals.

The next number was a brief address by Lieutenant Ryley, Royal Army Medical Corps, in which he gave a brief outline of the sanitary reforms which have been undertaken in the British army in providing for better sanitary administration. He called particular attention to the importance of examining the water supply, to the success of typhoid inoculations, to the value of proper food inspections, and to the advantage of having medical officers proceed in advance of the troops in order to examine the water supplies.

The next paper read was entitled "Health Conditions in the Philippines," by Dr. W. S. Washburn, Director of Civil Service. In this paper Dr. Washburn took occasion to answer many of the criticisms which have appeared in American medical journals during the past year with regard to his former article on tropical climates, which was read before the third annual meeting of the Philippine Islands Medical Association. He quoted most extensively from army statistics and from the reports of the Bureau of Health, and showed conclusively that the mortality and morbidity among those who carried out only reasonable hygienic rules and regulations were not any higher, and perhaps lower, than for persons who reside in the United States and other temperate climates.

The next paper, entitled "The Prevention of Tropical Abscess by the Early Diagnosis and Treatment of the

Presuppurative Stage of Amebic Hepatitis," by Dr. Leonard Rodgers, Professor of Pathology, Calcutta, was read by title.

The next paper, entitled "Prison Sanitation," was read by Dr. E. C. Shattuck, Medical Inspector, Bureau of Health, and Surgeon, Bilibid Prison Hospital. Dr. Shattuck showed most conclusively by diagrams the results which had been obtained in lowering the mortality and morbidity rate at Bilibid prison by freeing the prisoners of their intestinal parasites. He called attention to the fact that at the time this work was undertaken the death rate in the prison was 60 per 1,000 and that after the prisoners were free from their uncinaria and other intestinal parasites, the death rate fell to less than 20 per 1,000 per annum.

The next paper, entitled "Camp Sanitation as Illustrated at Jamestown, Va., and Pasay," was read by Dr. Percy L. Jones, Captain and Assistant Surgeon, United States Army. Dr. Jones gave a brief outline of the methods which have already been extensively described in the medical journals and the manner in which camp sanitation was carried out at Jamestown, and the success which attended it. He passed around photographs showing the character of the garbage furnace which was used for the purpose of incinerating the camp refuse and also photographs of the screened latrines which were used. Both of these were apparently practical conceptions which might be constructed on the ground without the use of special apparatus.

The next paper, entitled "Beriberi in Manila," was read by Dr. N. Saleeby, Physician-in-Chief, University Hospital. He reported that there were many ambulatory cases of this disease in Manila, and found that it was practically all confined to the poorer classes.

The fourth scientific session of the fifth annual meeting of the Philippine Islands Medical Association began at 3 P. M. The first paper on the program, entitled "Mendelian Heredity and Its Relation to Medicine," was read by Dr. Robert B. Bean, Assistant Professor of Anatomy, Philippine Medical School.

The next paper on the program was a brief address by Dr. J. J. Vassal, Institut Pasteur, Nhatrang, Annam, and delegate from Indo-China. Dr. Vassal stated that at Nhatrang he had the opportunity of studying the therapeutic action of atoxyl in seventeen different cases of malaria. The patients were Annamese and came from among the laborers along the railway. Atoxyl was given hypodermically in 10 per cent. solution in 0.5 gram doses at intervals of three days. The temperature remained above normal for sixteen days. The parasitic action of the drug seemed nil, but the general state of health was improved; the spleen diminished in size in an appreciable manner. After this period half a gram per day was given for four days, and at the end of nine days the disappearance of the organism had not yet been brought about. He was, therefore, of the opinion that atoxyl alone was incapable of curing malarial fever. He next gave atoxyl with quinine and had most excellent success with it.

The next paper was entitled "The Treatment of Inflammation by Roentgen Rays," by Dr. W. J. B. Burke, Professor of Clinical Medicine, University of Santo Tomas. Dr. Burke reported three cases which had been treated with the rays with marked success. In a felon of the finger the pain practically disappeared after the first ten-minute application. He also used the *x*-rays in severe cases of boils with marked success. In no case, however, did it abort the lesion, the advantage being the absence of pain and reduction of the time required for recovery from the affliction.

The next paper, entitled "Importancia de la Amputacion de Pirogoff para la Longitud del Miembro," by Dr. Benito Valdez, Professor of Surgical Pathology, University of Santo Tomas, was briefly abstracted and read in English by the Secretary.

The next paper, entitled "The Prevalence of Cancer in the Philippine Islands," was read by Dr. F. W. Dudley, Surgeon, St. Paul's Hospital, and Associate Professor of Surgery, Philippine Medical School. Dr. Dudley stated that as the Filipino population was gradually coming more and more under medical observation, it was evident that the incidence of cancer was fully as high among them as it was among residents of the United States. He expressed the view that the absence of cancer in the tropics which has been frequenlty dwelt upon heretofore was not real, but was only due to the lack of skilled medical diagnosis, and thus the cases of cancer did not find their way into the vital statistics.

The next paper on the program was a brief address by Dr. H. Fraser, Institute for Medical Research, Kuala Lumpur, and delegate from the Federal Malay States. Dr. Fraser made a few preliminary remarks with regard to the work which is being done at Kuala Lumpur Institute with regard to the etiology of beriberi. He stated that their work was now only about half completed and that he was not prepared to announce any results. He did, however, call attention to the remarkable results which had been obtained by Dr. Fletcher about a year ago, at the Kuala Lumpur Insane Asylum, in following the custom of the Timbals, who boiled their rice before it was husked, and among whom beriberi was practically an unknown disease. Dr. Fletcher practically reduplicated this condition in Kuala Lumpur Asylum. Dr. Fraser is now engaged in making a laboratorial investigation in order to ascertain if possible the underlying cause of this condition.

The next paper on the program, entitled, "Contribuciones á la Cirujia Abdominal," was read by Dr. Gregorio Singian, Associate Professor of Surgery, Philippine Medical School. He cited a case of a young Filipino in whom there was apparent absence of the liver. He stated that an exploratory operation was made for the purpose of locating the organ, and that not less than five of the Filipino physicians who were present explored the abdominal cavity, but were unable to find it.

The next paper on the program, entitled, "Recent Advances in the Science and Art of Surgery," was read by Dr. John R. McDill, Surgeon-in-Chief, St. Paul's Hospital, and Professor of Surgery, Philippine Medical School. Dr. McDill dwelt particularly upon the value of gastroenterostomy for ulceration and cancer of the stomach. He reported three cases which he had successfully operated upon.

The next paper, entitled "Obstetrics in the Philippines," was read by Dr. Fernando Calderon, Professor of Obstetrics, Philippine Medical School. Dr. Calderon gave a brief historical account of the superstitions which existed among the masses with regard to child birth in the islands, and called particular attention to the woeful lack of skilled obstetrical services in the Philippines. He stated that, with the exception of the few cases among the better classes who reside in Manila and in the larger towns in the provinces, practically all births were attended by quacks and charlatans, and that this, no doubt, was one of the most important causes of the high mortality in the Philippines. Many of the practices of the charlatans, he said, consisted in prescribing most horrible concoctions, these in some cases being composed of horse urine and feces and other disgusting ingredients. They frequently examined the hand of a parturient woman, and if a transverse line is found completely crossing it, it is the sign of a difficult birth, and it is necessary at the moment of delivery to cover this line with a handkerchief. In other instances certain cylindrical bricks which were manufactured in the country districts especially for the purpose are heated and applied to the abdomen of the patient in order to expel the wind and cold from the womb, which, in accordance with local superstition, are mortal enemies of parturition. The patient, for instance, is never given chicken broth, because the chicken is a winged animal and flies and, therefore, carries with it much air, which might be transmitted to the patient, thus injuring her.

The above paper closed the scientific session and the business session was then held, at which Dr. Ariston Bautista y Lin was elected *President;* Dr. J. M. Phalen, Captain and Assistant Surgeon, *First Vice-President;* Dr. W. S. Washburn, *Second Vice-President,* and Dr. Paul Clements, *Secretary-Treasurer; Councilor for five years,* Dr. P. E. Garrison, Assistant Surgeon, United States Navy.

After the election of officers a general discussion relative to the methods to be adopted with regard to the attacking of the tuberculosis problem in the Philippine Islands was begun. Dr. Heiser invited attention to the fact that Dr. R. P. Strong, Dr. H. T. Marshall, and himself had been named a committee for the Philippines by the International Congress on Tuberculosis for the purpose of collecting data and to formulate a plan as to the best method of attacking the problem. In view of the conditions which exist in the Philippine Islands, the best results are to be hoped for by first removing the intestinal parasites with which the greater portion of the population are afflicted, and thus increasing the resistance of the individual to infection. In order to put this into definite form the following resolution was adopted:

Whereas, It appears that the treatment of the prisoners for intestinal worms has been an important factor in reducing the death rate at Bilibid Prison; and

Whereas, It would appear, further, that over three-fourths of the population of the Philippine Islands is at the present time infected with animal parasites; and

Whereas, Infection with these parasites can be controlled almost absolutely by properly disposing of human excreta which contains the ova of the parasites; and

Whereas, The proper disposal of human excreta will at the same time remove one of the most dangerous channels for the dissemination of other infectious diseases; therefore be it

Resolved, That the Philippine Islands Medical Association does petition the Government of the Philippine Islands, through the Honorable Dean C. Worcester, Secretary of the Interior, that a commission of five properly qualified members be appointed to decide upon the most practical and efficient means for the proper disposal of human excreta, that can be established in these islands; and be it further

Resolved, That the Government of the Philippine Islands be petitioned to make such appropriation and provide such means for the establishment of a working system for the disposal of human excreta as from the report of this commission may appear practical and expedient.

After the close of the general session the delegates proceeded on Sunday afternoon to visit the Naval Hospital at Cavite, where they were entertained by the Naval Medical Officers. A number of very interesting cases of malaria and intestinal infections were shown. Dr. Balch gave a practical demonstration of a simple method by which the opsonic index could be determined. On Monday afternoon the delegates and members of the association were invited by the medical officers of the army to visit the Army Hospital at Fort William McKinley. Here they were shown over the well-equipped wards and were shown the more interesting cases. Colonel Hoff had an army field hospital set up and gave a practical demonstration of the working of the same, each unit being visited and explained.

OUR LONDON LETTER.

(From Our Special Correspondent.)

CLINICAL EXHIBITS AT SOCIETIES—LYMPHATIC PERMEATION IN DISSEMINATION OF CANCER—MEDICAL INSPECTION OF SCHOOLS—R. C. S. POLL AS TO ADMISSION OF WOMEN—THE LATE PROFESSOR ANNANDALE—DEFENSE OF RESEARCH.

London, April 24, 1908.

We have had an abundant supply of clinical material at the societies lately. The section of the Royal devoted to this department has had a successful meeting. The Medical Society of London has held its clinical meeting and other societies have been supplied with cases and demonstrations. I will select a few here and there which seem interesting from different points of view. Banti's disease, so-called, was shown and at the same time a case of "primary splenomegaly" in an anemic Jewess aged 50 who came from a non-malarious part of Russia. Dr. Weber thought perhaps the condition would become that described as Banti's with leucopenia and hepatic cirrhosis. A case of obscure fracture only demonstrable by *x*-rays was shown in a workman who was supposed to have sprained his ankle in July, 1907. Recovery was slow and incomplete, and in March, 1908, skiagrams were taken revealing that a piece had been broken off the inner side of the head of the astragalus and a fissure fracture made through the scaphoid. The value of *x*-rays was further illustrated by a case of Dr. St. Clair Thomson's, who produced a skiagram demonstrating the absence of the left frontal sinus, and mentioned some other points as to examination of this part by the rays. Mr. Symonds showed a man of 52 who had in 1904 undergone complete extirpation of the larynx with removal of the left thyrohyoid and sternohyoid muscles, all surrounding fascia with lymphatics and left thyroid lobe. The trachea was attached to the skin above the sternum. Primary union took place. Gluck's device of carrying a current of air through a rubber tube from the cannula to the lips enabled the patient to speak well enough to continue his work as a tax collector. He had no difficulty in swallowing. Another man was shown from whom Mr. Symonds eighteen months ago removed the left vocal cord for malignant growth. The case displayed the good voice obtainable when the arytenoid is preserved and the opposite cord unaffected.

Left optic atrophy with right hemiplegia followed an accident to a boy of seven. He was run over by a cab and soon developed left pneumothorax, then aphasia and hemiplegia. These improved but he remained blind in the left eye, that disc having completely atrophied. There is now no trace of the left carotid or its terminal branches which are supposed to be blocked.

Optic atrophy as a rare complication of myxedema was also shown. A waiter of 44 admitted two months ago to St. Bartholomew's Hospital. Both discs in this case were atrophied, the left more than the right. The visual field was slightly contracted on the inner side. He could perceive light with the left eye and could count things with the right. The myxedema disappeared under thyroid treatment and he can walk well and has no tremors of the hands, but the optic atrophy remains unchanged.

Two cases of brawny arm in mammary cancer were shown by Mr. Handley, who had treated them by the subcutaneous insertion of silk threads from the wrist to the soft tissues on the proximal side of the affected axillary glands and lymphatics, according to this view that lymphatic permeation plays a most important part in the dissemination of cancer. Dr. Leaf said he had seen similar cases improved by venesection, though the edema recurred after a time, and he suggested a combination of both modes of treatment, a suggestion supported by Dr. Copeman. Mr. Handley replied to this that it would be better to try each method on a different series of patients in order to be able to compare the effect. He suggested that his procedure might be useful in elephantiasis. Here I leave the exhibition of cases to refer to a discussion on Mr. Handley's views which took place at the Bristol Medical Society, where he gave one address in which he expounded his theory of lymphatic permeation as opposed to the common notion of cancerous emboli and as an explanation of dissemination in accordance with definite laws. Mr. Roger Williams thought the lecturer went further than the known facts justified in formulating a proposal to substitute as a general theory lymphatic permeation for embolism. He would restrict the theory to local dissemination. There were many facts which pointed unquestionably to embolism as a frequent occurrence. Thus it was certain that cancer cells existed and multiplied in the blood—and that, too, in almost every part of the circulatory system. As to intraosseous dissemination it is now accepted that the cancerous disease spreads from the medullary blood-vessels. So in the portal area it spreads from the portal veins. Mammary cancer passes to the lungs by the vascular route, and how can this reach the choroid of the eye except by embolism? Many other metastases seemed inexplicable otherwise. Mr. Carwardine questioned whether obvious enlargement of the supraclavicular glands might not contraindicate operation, as there might be permeation also into the upper abdomen. Another speaker asked for statistics and also how far operations were being carried. Mr. Handley, in reply, recognized no difference between metastasis and local spread. But he freely admitted that sometimes cancerous embolism might occur, but he thought this was not very often, and he denied that it played the chief part in metastasis.

A conference of school teachers has been held during the week. At the Wednesday sitting, Dr. James Kerr, Medical Officer of the County Council (Educational Department), read a paper on "The Medical Inspection and Treatment of School Children," in which he referred to the recent act as loosely worded, and said that statistics of weights and measurements did not constitute medical inspection, nor did a record of children's complaints. Such records would be of no value. About 90 per cent. of the school children had some dental defects, and 10 per cent. had defective vision. Of the last, 30 per cent. needed examination by methods inapplicable at schools. But every child he tested as to its vision, hearing, and physical condition in reference to nutrition and anemia. Cleanliness and freedom from vermin were matters for the nurse. A compromise had usually to be struck between what was practical and what was too costly or so impracticable as to be pedantic. The teacher, he said, must be master of his own school; the doctor was his colleague. Some discussion followed. One member said they would not have the millennium through medical inspection, and they must not forget the responsibility of the parents. Another held that the inspection would bring home to parents that responsibility. A third seemed greatly concerned lest the teacher should lose any authority, and emphasized the point that he must be master in his own school with regard to medical inspection as well as everything else.

Dr. Kerr's paper certainly gave no grounds for misgiving in this matter, and the meeting evidently thought so, from the cordiality with which it accorded him a vote of thanks.

The poll of the College of Surgeons is now being taken by post-card on the question of the admission of women to the diplomas, and will be open until July, so as to give time for replies from the colonies. The Council state on the card that they have decided that it is desirable to admit women to the examinations for the membership, and are advised that they have power to do so, but wish to obtain the opinion of the fellows and members. Their legal advisers further say that no woman admitted to the diplomas would be able to take any part in the government, management, or proceedings of the college. It seems a curious course to ask an opinion with so clear an intimation that the matter was decided, but there are other equally singular facts regarding the poll. As there are other bodies freely admit-

ting women, there is no reason why the college should not compete for their fees for the membership, which is only a license to practice. The Fellows elect the Council which governs the college. If women in any number become members, we may be sure they will submit to the higher examination, and when they are admitted Fellows they will claim a vote for the Council. Perhaps before then they will join in the demand of the members for a voice in their college. You know, the members have for years been agitating for recognition without effect. Perhaps women would teach them a lesson in that respect. The Society of Members has sent out a post-card, asking the recipients to disregard the requirement to reply simply yes or no, and to add to the yes, "with full collegiate rights." This may prove a good electioneering move in the interests of members. At present it has been met by an official communique to the press, stating that the President has been informed that an unauthorized post-card has been circulated, recommending that the official requirement should be disregarded, and hoping that all will return the official card in strict accordance with the direction to reply "simply in the form of yes or no."

A proposal to raise a memorial to the late Professor Annandale is put forth at Edinburgh by the Principal of the University and the President of the College of Surgeons.

Sir R. Douglas Powell has been reelected President of the Royal College of Physicians, London.

Inspector-General James Porter, C.B., M.D., has been appointed Director-General of the Medical Department of the Royal Navy, vice Sir Herbert Ellis, K.C.B., resigned. Dr. Porter was lately in charge of Haslar Hospital, and he saw much service in the South African War.

A Research Defence Fund is being organized, with Lord Cromer as President, and Mr. Stephen Paget as Honorable Secretary.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 30, 1908.

Treatment of Abnormal Rigidity of the Cervix Uteri by Deep Incisions.—N. R. Mason reports two cases in which this procedure was tried with success. The operation consists in section of the portiovaginalis only after complete dilatation of the supravaginal portion. It is indicated when it is imperative to empty the pregnant uterus in the shortest possible time by the vaginal route and the patient has a rigid cervix which is not dilated. The primary indication is a primiparous eclamptic. The necessary condition exists when the presenting part of the fetus is separated from the vagina simply by the thick septum of the infravaginal cervix. The author describes his technique in detail and presents the following conclusions: Where immediate delivery is demanded in the presence of an undilated and rigid cervix, multiple deep incisions from the border of the external os to the uterovaginal junction furnish the most rapid and safest method of emptying the uterus. There is no danger of the incisions tearing in cases under full term, or in cases at full term, where the pelvis is normal and the fetus is of moderate size. There is no risk of hemorrhage when clamps are employed before making the incisions. The chance of septic infection is no greater than after the lacerations occurring at the time of normal delivery. The scars in the cervix and vaginal vault cause no trouble in the course of subsequent pregnancies and labors.

The Plaster-of-Paris Bar or Rope.—The preparation of the bar or rope is thus described by R. Soutter. A very wet plaster-of-Paris bandage is rapidly unwound back and forth to the desired length. No attempt is made to rub it or to apply it to the partially applied dressing. When the roll is entirely unwound it is held at one end by one hand, while the other is grasped around it and slid down to the other end, moulding it into a bar. It is then slapped into place and rubbed three or four times. This method of reinforcement is more rapid than the time it takes to describe it. By means of the "plaster rope" the bandage may be made very light. Sometimes it is not necessary to have lightness, but large windows are needed as in cases of suppuration, and yet position is sometimes most important in the class of cases. The plaster is put on in the usual way but not finished. Then a lump of sheet wadding is applied at the point where the "bar" is to be laid. The plaster is then completed. When the window is cut, the wadding roll is removed and the bar forms an arch which is solid as stone, permitting large windows with good margins around the wound and plenty of room for extensive dressings. In case very large windows are needed, two or three wire bridges previously bent are necessary to support the gap.

New York Medical Journal, May 2, 1908.

Psychic Pnenomena of Intestinal Toxemia and their Treatment.—J. C. De Vries presents an elaborate history of one case and summaries of several others. The symptoms which such patients present may suggest tuberculosis, and even cancer. Many cases are characterized by intense depression and dread, often a suicidal tendency. Peristalsis may be perfect and the bowel movements normal, yet the mental symptoms persist. Often the trouble begins with a nervous anemia. In this condition food should be varied and given at frequent intervals. Bitter tonics should precede meals. In the later stages after emaciation has resulted and the condition is chronic, residence at a health resort for several weeks is necessary. Depression of spirits is very marked. The high frequency current, and occasional forced feeding and hydrotherapy consisting of a salt rub, a needle bath, Charcot douche, an electrothermal bath, with an occasional massage, usually effects a cure in these cases. In certain cases nervous dyspepsia is the prominent feature. If the condition is accompanied by neurasthenia, typical tender spots are found. If we are uncertain in our diagnosis, treatment is best begun with the rest cure. Cold baths, shower baths, and vibration are serviceable. Ichthyol in divided doses for an indefinite period or its albuminate (ichthalbin) in combination with the various valerianates is undoubtedly one of the best remedies in relieving the neuralgic type of intestinal derangement.

Abstraction of Calcium Salts from the Mother's Blood by the Fetus.—To this cause J. G. Drennan attributes much of the dental disease of the mother. The fetus requires calcium salts for the development of its own osseous tissues and leaves an insufficient supply for the maternal organism. The maternal teeth are one of the first tissues to suffer, probably partly on account of their position, where other deleterious factors are at work—fermentation and putrefaction of particles of food, the presence of secretions which contain germs, and the acid vomit from the stomach coming in contact with them. At the present time the food of the average woman is not so rich in calcium salts as formerly, for much of our prepared vegetable food, especially celeals, is adulterated, or at best, so refined as to have removed from it that which is most necessary to the human organism. During pregnancy and lactation the mother's food should be richer in calcium salts than at any other time, because she is then to supply such salts to two organisms—herself and her fetus or infant, the latter being greedy for such material. The fruit diet fad makes soft bones for both mother and child. It may lead to osteomalacia in the former. Milk and eggs should be freely used and the salts may be given in such preparations as the syrup of calcium lactophosphate and its similars.

Angulation of the Sigmoid.—T. B. Spence reports one case, his patient being a man of 39 years whose symptoms of two years' duration began with pain in his left side over the course of the descending colon. The pain was sometimes intense, at other times it was a dull ache. At the beginning of the trouble his bowels became constipated and continued so; his feces were either scybalous or fluid, never normal in character, and the pain was more severe when the constipation was most marked. There was a loss of weight of twenty pounds during the first year, and very little after that. One year before the author saw the patient, the latter had an operation for suspected cancer but nothing was found and no relief was obtained. The author's incision included the scar of the former operation and many adhesions were found in the left side of the abdomen. A kinking of the sigmoid was found and the loop formed thereby was held firmly by adhesions, and, even after the adhesions were torn loose, the sigmoid immediately fell back into its faulty position when it was dropped into the abdomen. Because of the difficulty in overcoming the angulation, and because of the possibility of further trouble from the numerous dense adhesions along the course of the descending colon, it was deemed wise to cut out the colon by a short circuit between the small intestine and the sigmoid. An anastomosis was accordingly done, connecting the lower limb of the sigmoid to the ileum at a point about twelve inches from the ileocecal junction. Two rows of sutures were inserted, the inner one being a through-and-through stitch. The hernia was repaired by imbricating the layers of the abdominal wall. On the eighth day after operation the patient vomited a small amount of blood and on the ninth day a much larger quantity. On the tenth day a small enema brought away a large amount of black fecal matter. The loss of blood from the stomach and bowel affected the patient markedly, but he soon reacted and was able to sit up on the nineteenth day. There has not been any of the old pain since

the operation, and at the end of four months there is a complete return of health and strength.

Journal of the American Medical Association, May 2, 1908.

The Value of Hospital Interneship.—The scientific and practical value of a hospital interneship is the subject of this article by the late Dr. Nicholas Senn. First showing how medicine, of all the learned professions, is the one that requires the most careful preparation for practice, it is pointed out that it may be assumed in advance that the hospital interne is one who has been a student and has fully utilized the college opportunities. Medical college of instruction alone is insufficient, and the hospital service of the interne, with its laboratory advantages, opportunities for observing postmortems, the daily observation of the methods of the members of the attending staff, and the exclusively medical atmosphere in which he lives, make a far better preparation for his life work than could be otherwise obtained. The responsibilities he has to assume, at least in part, help to develop character; he is no longer a mere hearer and onlooker, as in the medical school. The association with his colleagues and the acquaintances made with physicians are also a great help when the time comes for him to decide on his future course of life. But the greatest value of all is in the practical training received. A year and a half in a large well-equipped hospital, and under the tuition and supervision of a competent staff, is more than equivalent to ten years of active practice.

Spinal Segments and Visceral Disease.—S. D. Ludlum reviews the literature of the relations of the spinal cord and sympathetic system to localized disease of the internal organs and the anatomical facts on which these relations depend. He concludes from the data of human and comparative anatomy and physiology that in each segment of the cord we may have a viscerosensory ending, a visceromotor center, connecting collaterals to each other and brainward; connected with this same segment are sympathetic fibers and sensory fibers from the skin. We can locate these segments by changes in sensation (Head) or by cutting roots (Sherrington). Each segment may be affected by altered conditions in the viscerosensory tract, and by applying heat or cold or other stimuli to the area of the skin whose nerve-endings are in a segment whence arise visceromotor, vasomotor, or other activities, we can reflexly affect the organ supplied by these tracts. The spinal region including these segments corresponds to distribution in the cord of the cells of the columns of Clarke and the intermediolateral tract. Ludlum deduces from all the facts and from personal observations as to the localization of these spinal segments that by therapy, thermal or manual, applied to the areas of skin whose sensory nerves end in the segment of the cord whence also originate vasomotor and visceromotor fibers to the organs, we can produce a change in the functional status of those organs. Accuracy of localization is needed for the best results: an ice bag applied to the spine from the sixth vertebra down will influence diarrhea; if applied above, the heart and lung vessels are also affected and a large part of the benefit is lost. Other illustrations are given showing the effects of stimuli, thermal, electric, etc., on the heart, lungs, etc.

Modern Conceptions of Syphilis.—A. Schalek points out how our ideas about syphilis have been modified since the discovery of the *Spirochæta pallida* as its causal organism. Formerly, gummata were considered innocuous, as being due to toxins only, and appearing after the active virus had exhausted itself. Now we know that they may be still infectious, and doubtless are responsible for some obscure cases. The spirochetes are, however, only exceptionally found in these late lesions, and are not to be expected in broken down gummata on account of the destruction of the tissues. The difficulties of the staining methods and the necessary training of the eye to detect them put this method of diagnosis out of the reach of the majority for the present, but it is only in the doubtful cases that it is absolutely needed. The finding of the spirochete is only possible before mercury has been taken; this drug is fatal to the germ, a fact that Metchnikoff has shown to be of value in the prophylaxis of the disease. An occasional examination for the spirochete is useful in the treatment of constitutional syphilis, but the fact of its constant appearance in primary lesions makes it unnecessary to wait for the eruption to verify the diagnosis, and renders a radical early commonsense method of treatment practicable. Excision of the chancre, followed by cauterization, seems the rational procedure to eliminate the breeding of the disease. This should be followed by energetic mercurial treatment to destroy all germs that have already entered the lymphatics. Excision also prevents autoinfection. The discovery of the germ and its antidote, mercury, puts the treatment of late syphilis on a scientific basis and shows the uselessness of solely relying on the iodides, which are valuable only in promoting absorption and eliminating toxin. It also has an important bearing on the question of the marriage of syphilitics. Since it is not yet possible to obtain pure cultures of the spirochete, one can only speculate as to the possibilities of opsonic treatment and other modern therapeutics. Interesting experiments are, however, reported with serum diagnosis and serum therapeutics, some of the results being rather encouraging. Immunization experiments have also been made with positive results. One important fact shown is that not every case of locomotor ataxia is of syphilitic origin, and our means of deciding as to the specific nature of certain brain tumors are greatly improved. Our ideas on autoinfection and reinfection have also been changed. It is now known that there is a period during the existence of a chancre when multiple autoinoculations occur, and that there is a time limit to the protection conferred by a single attack of syphilis, after which reinfection may occur. Finger's explanation of recurrent syphilitic lesions seems most rational: Immunity begins and develops gradually with the first appearance of the primary lesion. It increases during the secondary stage, but never becomes absolute. After reaching its climax, it again decreases, until a virus which may have remained latent for a time can produce new pathological changes, or infection from outside sources becomes a possibility.

The Treatment of Eclampsia.—J. F. Moran says that while the etiology of eclampsia is not yet definitely known its clinical phenomena and pathology point to a probable intoxication of maternal, fetal, or combined origin. Its frequency could be greatly diminished if a more careful supervision of women in pregnancy were exercised. The mere examination of the urine for albumin during the latter weeks of pregnancy is not sufficient; the total solids excreted, the constitutional symptoms, and the hygienic conditions must all be carefully observed. The occurrence of eclampsia is rarely without warning, and when the symptoms of a pregnancy nephritis increase in spite of prophylactic measures and brain symptoms threaten, it is highly important to terminate the pregnancy, and the quicker the better. In case of sudden onset, with undilated cervix, the operation of vaginal cesarean section may be required for sufficient prompt delivery. The views as to the use of narcotics in eclampsia are changing, and the large doses of morphine recommended by Veit are not advised. In the beginning of the attack, while the mind is intact and the susceptibility of the nervous system is preserved, there is no objection to the use of morphine, as its quieting effect is salutary, but in unconscious and comatose states it is best to withhold narcotics. Chloroform is a cardiac depressant and this, with its bad effect on the hepatic and renal functions, should limit its administration to the time when intervention is required. Chloral hydrate is a valuable remedy, but is not always tolerated; Moran has found it useful in the prodromal stage and also after delivery. He has also found nitroglycerin useful when reduction of arterial tension and diuresis were desired after delivery. As eliminatives, he recommends croton oil and elaterium during the attack, and when the patient is able to swallow, the saturated solution of magnesium sulphate to further eliminate the poison from the bowels. Diuretics have but a slight and inconstant effect. The free use of normal salt solution, three or four pints every few hours, is also recommended as a rational measure. When there is a full quick pulse, cyanosis, and labored respiration, great benefit may be derived from venesection. It is particularly serviceable when the seizures continue after delivery. The result in any given case will depend on the severity of the attack, the judgment and skill of the physician, and the rigid observance of asepsis. Essential to success is a well thought out plan of prompt but not overzealous procedure based on the various phases of the disease, combined with a knowledge of the condition of the cervix and the changes which it must undergo before pregnancy can terminate or be terminated.

Unexpected Aural Effects of Common Drugs.—G. B. McAuliffe reports a case in which iodide of potassium caused deafness and tinnitus. Recovery was imperfect, a fact which he attributes to the formation of an exudate in the fossula ovalis. He thinks it sounds a warning against the reckless use of potassium iodide in aural disease, as any idiosyncrasy of the patient is hard to predetermine. He also reports cases of aural pain relieved by salicylate of sodium, and of aural fibrosis apparently benefited by ergot.

Pneumococcal Brain Abscess.—R. M. Green reports a case of brain abscess from pneumococcic infection and gives brief abstracts of other similar cases found by him in medical literature. The onset of symptoms was grad-

ual. The patient, a woman, aged 35, first felt tingling and numbness, followed later by gradually appearing right motor paralysis, fever, stiffness of neck, partial aphasia, and dullness of intellect. She grew gradually worse and died nine weeks and two days after the first appearance of the symptoms. The autopsy revealed a pneumococcic abscess of the left optic thalmus, with secondary pyocephalus, ependymitis, basal leptomeningitis and bronchopneumonia. The points of special interest noted were the cellular proportions in the meningeal exudate and in the perivascular and general infiltration (predominance of lymphocytes and plasma cells) and the absence of determinable source of entry of the infection. In the abscess cavity, the ventricular lumen and the bronchial exudate, polymorphonuclear leucocytes prevailed. Lanceolate diplococci were found freely in all the affected tissues, showing a generalized infection.

The Lancet, April 25, 1908.

The So-Called Rheumatic Iritis.—Three cases are detailed by C. Higgens who believes that many cases so-called are really of gonorrheal origin, while the patient may never have had arthritic symptoms. The chief distinguishing features are these: it is painful, often severely so, there are swelling of the iris, generally much photophobia, a strong tendency for adhesions to form, though there is no very great amount of exudation, with much ciliary and conjunctival congestion. There are also a decided inclination to contraction of the pupil which strongly resists the action of mydriatics of which there is often a marked intolerance; a tendency to increased tension; a general intractability, rendering treatment most difficult and its results most disappointing; and an unlimited capacity for recurrences continuing through any number of years. As to the mode of origin the author suggests that in probability, in many men who have had gonorrhea severely and frequently, there is left for any number of years in some part of the urinogenital apparatus a very much attenuated virus which gives no trouble locally, but from time to time becomes more active, and though still setting up no local irritation is capable, after absorption, of causing inflammation in synovial membranes or in the iris; in fact, it looks almost as if the iris becomes on occasions an excretory organ and tries to eliminate the poison, receiving considerable damage to itself in the attempt. There must also be a personal element or an idiosyncrasy in those who suffer, because the proportion of persons who have iritis to those who have had gonorrhea is very small indeed. The treatment of this form of iritis is very unsatisfactory. Mydriatics irritate and rise if torsion occurs frequently, so they must be used with caution. Hot sedative applications are serviceable. Cocaine and adrenalin should be avoided. While giving immediate relief, the latter is but temporary and the after-vascular paralysis leaves the patients worse than before. Internally we should flush out the system by purgatives and copious draughts of hot water, give mercury, iodide, quinine, etc. Salicylates are unreliable. Aspirin will relieve pain. Alcohol should be avoided and the integrity of digestion carefully maintained.

The Influenza Bacillus as a Cause of Fatal Endocarditis After Eight Years?—F. J. Smith suggests that the patient may have been an "influenza carrier" and attaches a question mark to his title, showing that he desires the verdict of his readers as to the truth of the proposition he advances. The patient, a man of 45 years, was admitted to hospital in a condition supposed to be a relapse from typhoid fever. He had had influenza eight years previously. His immediate illness was of two months' duration. At about the end of the first half of this period a cardiac murmur was audible. Later the lungs began to be affected and the murmur increased in intensity, later diminishing. The patient died from progressive asthenia. Autopsy showed a verucose endocarditis of the mitral valve with, in the organs, the usual changes due to endocardial infection. Blood cultures taken during life were negative, as they died out before the bacillus found in them could be induced to grow, but its morphological appearance was typical of influenza and its behavior on artificial media left no dout that it was the true influenza bacillus. The author says that we have in this case a positive demonstration that the illness was due to the influenza bacillus, notwithstanding the fact that it was called typhoid fever and did present what are commonly accepted as the principal features of that disease. It began with severe headache and bronchitis and diarrhea, and with these were associated an enlarged spleen and a rash said to be that of typhoid fever. As no bacteriological test (Widal) was made at that time one cannot wonder at a diagnosis of typhoid fever being arrived at.

Chronic Polycythemia.—This condition was first described in 1892 and then ascribed to congenital heart disease. But few cases are on record. An additional case is contributed by E. Cautley who describes his experience with a man of 47 years who was admitted to hospital with the diagnosis of perisplenitis and slight pleurisy with effusion. Examination of the blood showed 7,500,000 red cells and 50,000 white. The latter were nearly all polymorphonuclears. The case was seen at intervals for over a considerable period, in the course of which the red cells rose to 10,000,000 and the white to 59,000. The patient had a very florid face varying to a cyanotic tint. Still later the white cells rose to 75,000. Death finally resulted from cerebral hemorrhage. Autopsy revealed no assignable reason for the great cell increase. The author notes that although any condition of cyanosis induces polycythemia it does not follow that the increase in the number of red cells is due to the cyanosis in cases of the above type. More probably there is an actual increase in the production of red cells, and the cyanosis is consequent on the increasing viscosity of blood and difficulty in its efficient aeration. The considerable increase in the number of white cells, especially in the polymorphs, suggests that we have to deal with an inflammatory affection of the blood-forming organs, possibly the result of some toxin. In many instances the number of white cells is little increased. So far microscopical examination of the various organs has yielded no positive information. Venesection in this patient certainly relieved the symptoms considerably. The omission of milk from the diet and large doses of sodium citrate did not appear to produce any beneficial effect.

British Medical Journal, April 25, 1908.

Cobalt Test for Visual Acuity.—A. J. Hull says that cobalt blue is a substance which possesses the property of excluding all but the blue and red rays when white light passes through it. A person looking through a piece of cobalt blue glass receives only the blue and red rays. Blue rays, being more refrangible than red, focus sooner than red. If the retina is nearer the lens than normal it will receive the focus of the quickly focussing blue rays, but will only receive a haze of the red rays, which will come to a focus behind the retina. If, on the contrary, the retina is a greater distance from the lens than normal, it will receive the focus of the slowly converging red rays, but will only receive a haze of blue rays, the blue rays having come to a focus in front of the retina. The only appliances required for the test are a piece of cobalt blue glass and a disk of white light. The latter is formed by placing a piece of thin parchment in front of a lamp, or using a lamp provided with a disk of ground glass. If the light thus formed be looked at through the cobalt-blue glass by an emmetropic eye a purple disk will be seen. If the eye be hypermetropic the blue rays will focus on the retina, the red rays behind the retina, the red rays forming a ring around the blue. The hypermetropic patient will therefore describe a blue spot surrounded by red. If the eye be myopic the red rays will focus on the retina, and the divergent blue rays will surround the red. The patient will therefore see a red spot surrounded by blue. The various forms of astigmatism may be also recognized by applying this principle. The distribution of the colors seen by the patients suffering from the various errors of refraction may be experimentally produced by the observer placing before his own eye a cobalt glass and adding various spherical and cylindrical lenses, thus making himself artificially ametropic. This method possesses some distinct advantages in the examination of recruits, candidates for various kinds of employment, and the investigation of cases of supposed malingering. It is possible to determine by one simple maneuver—the placing of a cobalt-blue glass before the patient's eye—first, whether the patient is emmetropic or not, and, secondly, whether he is hypermetropic, myopic, or astigmatic. The test is particularly valuable in conjunction with other tests and methods of examination when examining a suspected malingerer. The disadvantage of the test is that the surgeon is entirely dependent for his conclusions upon the statement of the patient. However, the person under examination is unlikely to know that he can simulate emmetropia by saying that he can see a purple disk, but will describe the distribution of colors associated with his error of refraction. The malingerer, on the other hand, will see nothing incriminating in saying that he can see a purple disk.

Certain Infections of the Urinary Tract, with Special Reference to Tubercle, Gonococcus, and Bacillus Coli Communis.—After discussing the histology and physiology of the different anatomical elements in the urinary tract, G. L. Eastes says that when tuberculosis of the urinary organs has passed the miliary stage, tubercle bacilli can almost invariably be detected in the urine by the use of the centrifuge and microscope. A purulent de-

posit showing a visible trace of blood contains plenty of bacilli. When ulceration is going on, if after the centrifuge, no bacilli are found, it is almost certain that the case is not tuberculous. In the great majority of cases previous to the use of instruments, the infection is single and will remain unmixed throughout the course of the disease if manipulation be avoided, and, as a secondary infection is the most undesirable complication, this leads me to enter a strong protest against instrumentation, except for the most cogent reason. Disastrous results follow the introduction of a second organism, and instruments should be the last resource in diagnosis and treatment. This warning is intended to apply to all urinary diseases with as much force as in tuberculosis. Infection from the *Bacillus coli* is commonest of all, and this organism may attack the perirenal tissues, renal pelvis, ureter, bladder, and occasionally the urethra. Infection through the lymphatic route is common. The poison lodges in the ureter and extension is upward rather than downward. The commonest effect is pyuria, and we may have a systemic toxemia, varying from slight headache and fever to profound septic intoxication. In pure gonococcus infections of the urethra which light up with extraordinary virulence at each attempt at topical medication, gonococcus vaccine is again most useful, raising the resistance of the tissues until a point is reached when local applications act like a charm in curing the disease.

Solitary Kidney.—B. J. Ward enumerates the varieties of fused or solitary kidney, and says that during the routine examination of the body of a man of 30 years who died from valvular heart disease, he felt for the right kidney but found that the usual site of the organ on that side was quite empty and no trace of the kidney could be found, either in the pelvis or elsewhere. On dissection it was also apparent that neither the corresponding renal vessel nor ureter had been developed; there was not even a pad of fat or other tissue to represent the missing organ. The adrenal gland was present and in its usual situation, but was supplied with blood by branches of the diaphragmatic arteries only, the usual aortic branches being absent. The left kidney was twice the normal size, and weighed 12 ounces; it was of the usual bean shape with a smooth surface, and it lay in the normal position. A section showed chronic congestion, the result of a gradually failing heart; its vessels were at least twice the normal size, but the pelvis and ureter were normal both in size and shape. The bladder was healthy, but the trigone gave a very curious appearance, the result of the absence of the right ureteric opening, the plica ureterica, and the interureteric bar. The left ureter opened in the usual situation, and its orifice was healthy; but the band of muscle which passes down from the ureter, and which should interlace with its fellow of the opposite side before passing downwards (forming the prominences of mucous membrane known as the plica ureterica and the interureteric bar), in this case ran straight down to the crista gallinaginis of the prostatic urethra, which it appeared to join. The result of this was to give the base of the bladder a curious lopsided appearance which must be quite characteristic and could not be mistaken if seen by the cystoscope. Methods at our command for the detection of single kidneys are cystoscopy, segregation, or separation of the bladder into two halves by a special instrument which enables one to collect the urine from the two kidneys separately, and inspection of the two kidneys.

Prolapse of the Inverted Bladder Through the Urethra.—C. Leedham-Green saw in hospital a little girl with a small swelling between the labia. On examination, a soft red protrusion could be seen between the labia, about the size of a walnut, and covered with mucous membrane. On abducting the thighs, it was observed that this mucous membrane was thrown into several small longitudinal folds, which, at the neck of the swelling, were continuous with those of the urethra. The small openings of the ureters were distinctly visible on either side of the prolapse, and from them urine was intermittently ejected in a characteristic manner. The whole of the bladder was not affected by the protrusion, although it was large, for a metal sound could be passed in front of it for a short distance into the diminished cavity of the bladder. When the child cried or strained the swelling became tense and larger, and the mucous membrane of the rectum protruded at the anus. Under an anesthetic the prolapse was readily reduced through the dilated urethra, which was large enough to admit the little finger with ease. The protrusion of the bladder seemed to cause little or no pain. The urine was free to escape from the exposed ureters, and the urethra was so lax that the blood supply to the bladder was scarcely interfered with. The delicate mucous membrane, however, had suffered from its exposure, and several small ulcers had developed in consequence. Apart from this special trouble nothing abnormal could be detected in the child. There was apparently no congenital defect of the bladder, urethra nor vagina. She was an unusually healthy, well-developed, breast-fed baby, without a sign of rickets or other constitutional disease. According to the mother the child had never suffered from worms, constipation, or diarrhea, and had never had any difficulty or straining when the bowels were moved or the urine evacuated. Apart from the baby's being somewhat weakly during the first month or two of its life, the mother could not suggest anything that might have predisposed to the condition. Various remedial measures were tried such as strapping the buttocks, stuffing the vagina with gauze, etc., but without avail. Finally, under anesthesia a small amount of liquefied hard paraffin was injected into the periurethral tissue at the neck of the bladder. This measure at once proved successful. The prolapse has not been down since; the cystitis which was present rapidly cleared up, and the child when last seen, some four months after the injection, had perfect control over the bladder. Two illustrations accompany the article, and the bladder appends brief summaries of the histories of 22 similar cases he has found on record.

Berliner klinische Wochenschrift, April 20, 1908.

Etiology of Tuberculosis.—Ravenel in a résumé of the literature upon the infection with tuberculosis by ingestion of food and by contagion comes to the following conclusions: The alimentary canal is a frequent portal of entry of the tubercle bacillus, which is capable of penetrating the healthy mucous membrane of the canal without leaving any traces of such penetration. This occurrence takes place most easily during the digestion of fat. The bacilli reach the blood by the way of the chyle vessels and the thoracic duct; from the blood they find their way into the lungs, being retained there by the filtering property of lung tissue. Such infection by way of the alimentary canal is most frequent in children. The milk of tuberculous cows is often a source of infection, but the present state of our knowledge does not enable us to state the proportion of cases in which this cause is active. Tuberculosis may also be spread by contact, such as takes place in kissing, in performing autopsies, and in cleaning various utensils used by tuberculous patients. Contact infection, however, plays a subordinate rôle in the spread of the disease.

Deutsche medizinische Wochenschrift, April 9, 1908.

The Diagnostic Value of the Ophthalmic Reaction in Typhoid Fever.—Orszag tested the ophthalmic typhoid reaction of Chantemesse in fifteen cases of the disease during the febrile period, in eighteen convalescent patients, and in twenty-one persons suffering from various other febrile and nonfebrile maladies. As the result of these observations he comes to the conclusion that the impossibility of obtaining a typhoid toxin of uniform strength is a serious obstacle in the application of the method, and that on this account the procedure cannot be regarded as practically useful. The appearance of the eye should be considered, not at the expiration of six hours as Chantemesse recommended, but at the end of twenty-four hours, for during the former period a positive reaction may also be obtained in cases that are not typhoid infections. At the end of twenty-four hours most cases of typhoid will be found to exhibit a positive reaction. In febrile cases a negative reaction permits the conclusion that typhoid is very probably not present. Convalescent patients give the reaction in about one-half the cases. In diseases other than typhoid the reaction is usually negative at the end of twenty-four hours, though in some instances positive results were obtained. Attempts to obtain diagnostic indications by means of a cutaneous reaction were unsuccessful.

Bradycardia in Appendicitis of Children.—Bokay considers the subject of bradycardia in appendicitis, especially in children, and describes, with temperature and pulse curves, the cases of ten patients from seven to sixteen years old. He finds that during the period of absorption of the exudate slowing of the pulse lasting from several days to more than two weeks appears almost as a rule. The same thing may be observed after the drainage of an appendicular abscess, and here again the symptom may persist for days. Bradycardia may also follow removal of the appendix during the interval. The pulse rate in children of the age specified may go as low as fifty-two, and in the author's cases it fluctuated between fifty-two and eighty. There does not seem to be any relationship between the bradycardia and the temperature curve. Slow pulse under the above conditions is not an unfavorable sign, and when it appears in cases with periappendicular exudate it may indicate that absorption of the exudate has begun.

Book Reviews.

Diseases of the Nervous System. Edited by Archibald Church, M.D., Professor of Nervous and Mental Diseases, and Medical Jurisprudence, Northwestern University, Medical Department, Chicago, Illinois. An Authorized Translation from "Die Deutsche Klinik," under the General Editorial Supervision of Julius L. Salinger, M.D. With 195 Illustrations in the Text and 5 Colored Plates. New York and London: D. Appleton & Company, 1908.

This is a translation of a German "system," and has the faults and the virtues of works of this kind. The authors are among the best of the German neurologists, Schuster, Schultze, Wernicke, v. Leyden, Redlich, Erb, Remak, Eulenburg, and others, and the work is an exponent of the best teaching of the justly celebrated neurologists of the German-speaking nations of Europe. The different articles are not of equal value, as they never are in composite works of this character, but in general they are all that could be desired. As might be expected of a German work, the best sections in the several articles are those on symptomatology and pathology. The therapy is weak, though it is not strong at best in any neurological treatise, yet the general tone in this important though often hopeless subject is more optimistic than one would expect from German writers. There is sometimes a curious lack of harmony between the two sections of etiology and treatment. In the article on headache, for example, the etiological factor of visual defects is mentioned more than once, but the logical treatment by correction of these defects by glasses is strangely neglected. The translation is excellent, smooth and free from Teutonisms. The typography is good, and the illustrations of a superior order. The work is a valuable addition to the literature of neurology, and one that will be found of service to the general practitioner, as well as the neurologist. It forms one of the volumes of the excellent series, entitled, "Modern Clinical Medicine."

Principles and Practices of Modern Otology. By John F. Barnhill, M.D., Professor of Otology, Rhinology, and Laryngology, Indiana School of Medicine, etc., and Ernest deWolfe Wales, M.D., Associate Professor in the Same Institution. With 305 Original Illustrations, Many in Colors. Philadelphia and London: W. B. Saunders Co., 1907.

Printed on heavy paper (so heavy, in fact, as to make the book a bit burdensome to handle), and with illustrations of unusual clearness, this handsome volume comes to us, a credit to both authors and publishers. The former have had in mind in its preparation five main objects, which are thus stated: To modernize the subject; to correct traditional beliefs; to advocate the earliest possible prophylaxis and treatment; to emphasize the importance of a thorough examination and a definite diagnosis a basis for rational treatment, and thoroughly to illustrate the text. The chapters on the anatomy of the temporal bone, physiology of the organ of hearing, and bacteriology of the ear have been written by Dr. Wales, who has also furnished the matter under the various headings concerning pathology. The rest of the book has been written by Dr. Barnhill. The subdivisions of otological subjects is in the main that usually followed in text-books of this class. It is in reference to accurate definite diagnosis and rational treatment that special commendation may be made. Books of this class are now following each other in such rapid succession that the limits of the columns of a weekly journal permit of only a general consideration, but, with reference to the Barnhill-Wales book, we may say that it is in every way a credit to American Otology, and will, we are sure, become a general favorite with both practitioners and students.

Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fourth (Enlarged) Edition. With 215 Illustrations, 28 in Colors. Philadelphia and London: W. B. Saunders Co., 1907.

We have already given Dr. Kyle's previous editions favorable notice in these columns. In the present edition, no less than twenty-nine articles on new topics have been added, while a very much larger number have been entirely rewritten. The author is one of the few men in this country who are both clinicians and pathologists, and many of the views advanced on pathology are the result of personal laboratory investigation. Concerning former editions, we said that in "a work of this kind the path traveled must necessarily be a beaten one. Under the head of treatment, the author has been very specific, giving not only the names of remedies, but also their dosage and minute directions for administration. Under such conditions, he is, perforce, dogmatic, and makes some statements which universal experience may not perhaps bear out, but throughout his pages there is the unmistakable stamp of sincere and thorough work and an honest record of personal experience." All this we can confidently repeat with reference to the present edition. If there is one criticism we might make, it is that there is rather too fine a subdivision of varieties of some of the common affections, and while this does not bother the practitioner, who sifts all such matters in the light of his own experience, it is rather apt to bother the student, to whom all such matters are new. In view, however, of the many excellencies of the book, it would be ungracious to lay too much stress on this point. Dr. Kyle's book is eminently safe and sane, and may be commended most warmly to the profession. The chapter on voice and speech is a new feature in the works of this class.

A Short Practice in Aural Surgery. By J. Arnold Jones, M.D., Hon. Assistant Aural Surgeon to the Manchester Eye and Ear Hospital, etc. New York: The John Law Co., 1908.

The author's endeavor "to present a concise account of the principles and practice of modern aural surgery" is evident throughout. The chapter on Clinical Examination discusses this matter at some length, and is worthy of careful consideration. While aural pathology is not taken up as thoroughly as we might expect in a "modern" work, more attention is given to symptoms and treatment. We cannot agree with all the author's ideas of treatment and technique. He freely quotes from the works of Richard Lake. Original plates are few, and the treatise of Politzer furnishes most of those in descriptive anatomy. A vocabulary of German medical terms used in relation to aural surgery, various conversational examples, and a score of formulæ are appended.

Technique Chirurgicale Journalière au Lit du Malade, par le Docteur A. Besson, maitre de conférences à la Faculté libre de Médecine de Lille. Deuxième édition revue et augmentée. Paris: Vigot Frères, 1908.

Over one-third of this little manual is taken up by the consideration of general and local anesthesia, the most prominent place being given to chloroform. The rest of the book treats of the various minor surgical procedures, arranged in alphabetical order, among them the preparation of bandages, catheterization, gynecological examinations, thoracocentesis, vaccination, etc. The directions given are throughout simple and sufficient, and the book should prove of value to the senior student or the interne on the surgical service of a hospital.

A Text-Book of Minor Surgery. By Edward Milton Foote, A.M., M.D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University); Lecturer on Surgery, New York Policlinic Medical School; Visiting Surgeon, New York City Hospital; Visiting Surgeon, St. Joseph's Hospital; Consulting Surgeon, Randall's Island Hospitals and Schools; Formerly Chief in Surgery at the Vanderbilt clinic. Illustrated by 407 Engravings from Original Drawings and Photographs. New York and London: D. Appleton & Company, 1908.

The subject of this volume receives but scant attention in the larger books on surgery and in the average medical curriculum; the result is, as the author correctly states, that "more bad surgery is performed upon the hand than upon the organs of the abdomen." Yet most of the patients in need of minor surgical treatment are found among laboring men and women, who are least able to stand the economic and physical loss caused them by bad treatment. The appearance of a large volume on the subject by a man of Dr. Foote's long and varied experience is, therefore, especially welcome. The author has adopted the topographical method of classifying the various affections, and takes up the head, the neck, the trunk, and the extremities in their turn; in each section, the material is further subdivided into inflammations, tumors, and deformities, while fractures and dislocations are also considered in the affections of the extremities. The symptoms and signs of disease are fully entered into, but the chief stress is laid upon treatment. The directions, moreover, found under the latter heading, are not of a general nature, but are in each case specific instructions of what to do and how to do it. The numerous illustrations serve to drive home the clinical pictures of the various lesions and the results of treatment. In the last section, the dressings, bandages, and the technique of minor surgery are taken up. But one serious omission may be noted, and that is the absence of all mention of Bier's method of treatment by active or passive hypermia; however unsettled its final value, no book on surgery dated with the present year should omit all mention of a principle of treatment that has found such wide adoption in recent years. Dr. Foote's book is a valuable one, and may be safely recommended to the practitioner of medicine or surgery, as well as to the student.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

216th Regular Meeting, Held April 3, 1908.

The President, Dr. Robert Abbe, in the Chair.

Chronic Myocarditis, with Dilatation and Extra Systole.—Dr. Walter B. James presented a man, 50 years old, for the purpose of demonstrating some interesting cardiac phenomena. The patient first came to the Vanderbilt Clinic with an attack of tachycardia, his pulse averaging 200 per minute. He was cyanotic and short of breath, and stated that he had suffered from similar attacks for many years. An examination of the heart showed evidence of a chronic myocarditis, with considerable dilatation and a slight systolic murmur. The patient was sent to the hospital, and after his admission he developed bradycardia, his pulse falling to 30 per minute. A distinct jugular wave was obtained between the radial pulsations, and on measuring this wave and taking a cardiogram he was able to determine that the wave, which was seen and felt and could be distinctly shown in the radial tracing, was due to ventricular and not to auricular contraction. This phenomenon eliminated heart block, which had been suspected, as it demonstrated that the auriculo-ventricular bundle was intact. The possibility of hemisystole was also suspected, but further investigation and a careful study of the jugular and radial tracings proved that it was a case of extra systole—a not uncommon phenomenon. His pulse was now beating regularly, about 30 times per minute, and each pulsation corresponded with a systole of the entire heart. Almost immediately after each pulsation there was an extra systole, rather feebler than the preceding, and coming as it did so soon after the first, the blood pressure was still so high that this comparatively feeble systole failed to open the aortic valves, and had instead a backward effect, producing a mitral regurgitation, the evidences of which were manifest.

Dr. Francis P. Kinnicutt said that about a year ago he had observed a very similar case in his wards in the Presbyterian Hospital. In that case, as in the one described by Dr. James, there was an alternating tachycardia and bradycardia. In the same minute the pulse might have a rate of from 120 to 180, the beats to the touch being of equal force and regular in rhythm, and an equally regular rate of 40. The change from one to the other was instantaneous. The successive periods of tachycardia and bradycardia were followed by periods of varying duration of a pulse of normal rate and regularity. Unfortunately no cardiograms were obtained. Dr. Kinnicutt believed that the explanation offered by Dr. James was the correct one. The speaker accepted Dr. Mackenzie's definition of extra systole, as limited to the response of auricle or ventricle to a stimulus from some other portion of the heart, but where otherwise the fundamental or sinus rhythm of the heart was maintained.

Cases Treated by Radium.—By Dr. Robert Abbe. The first patient was a schoolboy of fourteen years, who had had extreme hypertrophic granular lids since childhood. Photophobia and mucopurulent discharge were excessive. The case was classified by the ophthalmologists as an intractable one of vernal catarrh, rather than trachoma, which it resembled closely. Eversion of the upper lids showed masses of granulation tissue-like vegetations everywhere on the mucous membrane. For contrast one eye only was treated by radium, the worse one being chosen. One application a month for six months had practically cured the condition.

The second patient, who was still under treatment, was a man fifty years old, who presented himself in November, 1906, with a tumor of the right parotid gland, size of a hen's egg, of six years' duration. Excision of a small piece was made from the growth and the radium tube inserted into the cut. The tumor continuously decreased in size, and now, after the fourth exposure to radium, there was nothing left but a small and apparently inert mass, which had remained unchanged since July, 1907. This growth was reported to be a mixed sarcoma. Photographs and casts of the condition before and after treatment were shown as well as the exhibition of the patient.

The third patient presented was a little girl, who, when she came under Dr. Abbe's observation, had a tumor which occupied the entire parotid region extending beneath the jaw, upward to the zygoma and forward on the cheek. It was regarded as an angiosarcoma. An attempt was made to excise it, but this had to be abandoned on account of its extent, vascularity, and nerve involvement. Application of strong radium in a glass tube was thereupon made. At one time the tube was pushed into the center of the cavernous angioma and left over night. This produced great reaction, high fever, and tenderness in the region of the growth. Since then the mas had become flattened so that it was now scarcely noticeable and apparently nothing remained but the shrunken fibrous remnant of the huge soft tumor.

The next patient was a boy with an extensive tuberculoma of the skin of the hand and foot which had been unsuccessfully treated for seven years by every possible means, including liquid air. After a few applications of radium the lesions disappeared. One year later, soft, pink, cicatricial skin remained, as witnessed.

The next patient was a man with a round-celled sarcoma of two-thirds of the eyelid, who had been unsuccessfully treated by various methods, including six weeks with the *x*-ray. The growth disappeared within eight weeks, after four exposures to radium. The patient had received no further treatment for three years; there were no signs of a recurrence, and it was now impossible to distinguish which eyelid had been involved. This patient was exhibited to the Practitioners' Society in 1905, before treatment.

Dr. Abbe also exhibited casts of two other cases, showing the lesions before and after treatment with radium. One was a case of epithelial cancer behind the ear of six years' standing which had disappeared and remained cured after three exposures. The other was a case of extensive giant cell sarcoma of the jaw in a boy who had been shown at a meeting of the Society about four years ago, before treatment. Under radium treatment the growth, as well as the enlarged glands in the neck, had disappeared, and up to the present time there were no evidences of a recurrence.

On the Occurrence of Epileptiform Attacks in Diabetes Mellitus.—By Dr. Lewis A. Conner. (See page 801.)

Dr. George L. Peabody suggested that possibly arterial changes were present in some of these cases of diabetes in which epileptiform attacks developed. It was well known that arterial sclerosis was exceedingly common in diabetes. It was that factor alone that accounted for diabetic gangrene, for instance.

Dr. Francis P. Kinnicutt said that the epileptiform convulsions and bradycardia of the Stokes-Adams syndrome were so often associated with or dependent upon arteriosclerotic changes that it would be of interest to know whether these vascular lesions were not present in at least some of the cases reported by Dr. Conner. Dr. Kinnicutt asked whether the paraplegia and so-called tabes occurring in the course of diabetes were not commonly regarded as evidence of a peripheral neuritis rather than of spinal cord disease.

Dr. Edward G. Janeway suggested that the evidences of a multiple neuritis sometimes observed in the course of diabetes were perhaps due to the large doses of arsenic that were frequently administered, rather than to the disease itself.

Dr. M. Allen Starr said that Jacksonian attacks had

been observed occurring as a convulsive symptom in uremia; these would naturally be of toxic origin, and the same might possibly occur in the course of diabetes. There were many well-authenticated cases of epilepsy on record in which unilateral attacks occurred during the course of the epilepsy, and many cases of epilepsy began as attacks of the Jacksonian type. Many cases of Jacksonian epilepsy had been reported where no local lesion could be discovered post mortem. The speaker said he could confirm Dr. Kinnicutt's observation that the pseudotabes occurring in the course of diabetes was usually regarded as a peripheral nerve tabes.

Dr. Conner, in closing, said that of the eleven fatal cases reported in his paper, autopsy findings were given in seven, and none of those showed any evidence of cerebral arterial sclerosis, either grossly or histologically. In several of the most severe cases of diabetes, no pancreatic lesion was found. No mention was made in any of the cases of a bradycardia. Most of the patients were comparatively young people. There had been much discussion as to the association of epilepsy and diabetes and the development of glycosuria after epilepsy, but the consensus of opinion seemed to be that to find an appreciable amount of sugar in the urine after an epileptic attack was rare. The pseudotabetic attacks occurring in diabetes were generally regarded of peripheral origin. In addition to convulsive seizures, without apparent lesion, these diabetic patients sometimes present various other nerve symptoms without obvious lesion, such as cord symptoms without any changes in the cord. The convulsions were comparable, as Dr. Starr had said, to those of uremia.

Two Rare Lesions of the Superior Vena Cava, with Specimens.—By Dr. Walter B. James. The first specimen was removed from a man, 41 years of age, who had suffered for a number of years from moderate shortness of breath, and for six months prior to his death had complained of vague pains under the sternum. The sixth of last July he went off on a spree, and when he awoke the following morning the pain under the sternum was more severe and was of somewhat different character. His wife noticed that his face was puffed and dusky. His hands and arms were a little swollen. He went to his work, that of a mason, but was obliged to stop after a few hours on account of the discomfort and pain, and went home. Two weeks after this, the symptoms persisting, he came to the hospital. He was a heavily built man, with general anasarca, and suffering from dyspnea and orthopnea. The face, arms, and shoulders were swollen and cyanosed, relatively somewhat more markedly than was the rest of the body. The heart was moderately enlarged and there was a slight area of dullness extending about an inch to the right of its normal location in the second and third right intercostal spaces. Cardiac impulse was heaving, and there was a slight tracheal tug. Over the above mentioned area of dullness there was a systolic thrill prolonged so that it was almost continuous. Over the base of the heart on both sides of the sternum there was a systolic and diastolic murmur most marked on the right side; and with these, but fairly distinguishable from them, there was a soft, blowing or humming continuous murmur which could be distinctly separated from the above systolic and diastolic murmur. The diagnosis was a small aneurysm of the arch of the aorta which had perforated into the vena cava. The right chest contained a large amount of fluid. This was withdrawn, and reaccumulated repeatedly unusually rapidly, so that he had to be tapped every five or six days with well marked but temporary relief. He lived just three months after the onset of the acute symptoms on July 7, and for the greater part of this time he was in reasonable comfort, part of the time sitting up out of bed. The autopsy revealed an aneurysm the size of a small lemon given off backward from the beginning of the transverse portion of the arch of the aorta closely adherent to the superior vena cava with the lumen of which it communicated with a small oval opening measuring 3 x 4 mm. The edges of the opening were firm and smooth. The chief points of interest in the case were the history of the onset, the length of time the patient lived after the perforation took place, and the presence of all the characteristic signs and symptoms which enabled the diagnosis to be made with positiveness.

The second specimen exhibited by Dr. James was from a patient who was presented to the Practitioners' Society by Dr. William Gilman Thompson, in 1906. For sixteen years he had shown enormous dilatation of the superficial epigastric veins, many of the superficial veins of the thorax communicating with the inferior mammary veins. The blood current in these veins was from below upward. The patient also had pulmonary tuberculosis involving the right upper lobe. The diagnosis at the time he was exhibited was chronic pulmonary tuberculosis with total occlusion of the superior vena cava. The case was described subsequently by Dr. Theodore B. Barringer, Jr.* The patient died under the care of Dr. James, and the heart and lungs were exhibited to the Society showing total occlusion of the superior vena cava at the level of the vena azygos.

Dr. Kinnicutt, who also had had the patient under his care in the Presbyterian Hospital, said that a diagnosis of obstruction to the superior vena cava was made, and as the patient at the time was phthisical the obstructive lesion was believed to be of tuberculous origin

Dr. Janeway said that some cases of obstruction of the superior vena cava got well, perhaps by the establishment of a collateral circulation.

Case of an Orbital Tumor Recurring Fourteen Years after the Removal of the Eyeball.—By Dr. Charles Stedman Bull. The patient was a truckman, aged 68, who first came under Dr. Bull's care on March 16, 1908. The left orbit was partially filled by a black, lobulated, very soft, pultaceous mass, over which the eyelids closed easily. The mass bled freely with the slightest touch, but was entirely painless. The patient gave the following histor: In 1885, twenty-three years ago, he came under the care of Dr. Agnew at the Manhattan Eye and Ear Hospital for a protrusion on the front of the eyeball, which prevented the closure of the eyelids. It proved to be a corneal staphyloma, apparently arising from a neglected ulcerated pannus of the cornea, due to granular lids. The staphyloma was excised in the usual way and the sclera stitched together, the case healing promptly. The eye gave him no further trouble until the autumn of 1894, nine years later, when he noticed a return of the protrusion. He then came to the New York Eye Infirmary under the care of Dr. Noyes. The protruding mass was pigmented and connected with the iris, and after watching the case for some time, Dr. Noyes advised the enucleation of the eyeball, which was done on March 1, 1895. No macroscopic evidence of disease was found in the orbital tissue, and the patient was subsequently fitted with an artificial eye. Half of the globe was mounted and kept in the laboratory museum; the other half was prepared for microscopic examination, and the sections showed it to be an extensive spindle-cell melanosarcoma of the iris, which had extended to the ciliary body and chorioid. The patient wore his artificial eye with comfort until the present winter, when he noticed that he had difficulty in inserting the eye between the lids, and in February, 1908, this became impossible. On March 16, under cocaine, Dr. Bull removed as much of the soft pultaceous mass as was possible. The tissue bled profusely, but a careful examination of the orbit did not reveal any localized tumor. Under the microscope, the specimens removed from the orbit showed an edematous mass of loose connective tissue, filled with immature, poorly-defined cells, together with numerous ordinary round cells, and some newly-formed connective tissue cells. The growth contained considerable pigment; the vessels were small and their walls thin. In view of the history of this case, and

*Medical Record, April 20, 1907.

the very suspicious nature of the sections examined, the pathologist of the infirmary, Dr. George S. Dixon, thought he was warranted in regarding the present growth as a form of melanosarcoma. On April 1 Dr. Bull cleaned out the entire orbit of a rapidly-growing, soft, melanotic tumor, and he was then enabled to determine that the growth had invaded the ethmoid cells and extended from the ethmoid into the superior nasal meatus. The sphenoid was apparently not invaded, but the growth extended into the sphenoidal fissure. The floor of the orbit was sound, and the maxillary antrum was not involved. No attempt was made to remove the periosteum of the orbit or to clean out the adjacent sinuses, as many years' experience had taught the futility of attempting a total or radical removal of a malignant growth which had once invaded the sinuses connecting with the orbit, and that every such attempt at a radical removal hastened the return of the growth and tended to shorten the life of the patient.

Dr. Abbe said that about twelve years ago he saw a case where the entire antrum and nasal fossæ were invaded by a hemorrhagic sarcomatous mass. A radical operation was done, both external carotid arteries being simultaneously ligated and the tumor removed, together with the upper jaw and the nasal bones. The patient was still alive and in perfect health, without recurrence twelve years after the operation.

Dr. Bull, in closing, said he had no doubt that the original growth, dating back to 1885, was a sarcoma of the iris. There were no evidences at present of any metastatic growths elsewhere in the body. It was formerly thought that any tumor involving the eyeball and invading the orbital tissue must be thoroughly eradicated, but experience has shown that it was impossible to clean out a growth after it had once invaded the sinuses adjacent to the orbit, and that any attempt at a radical operation usually shortened the patient's life.

A Case of Acute Ascending Myelitis.—Dr. M. Allen Starr reported this case. The patient was a boy of seventeen who, after competing in a running race with some of his school-fellows, was extremely exhausted. About a week after the race he began to complain of malaise and general fatigue, and had slight incontinence of urine. The next day his legs became weaker, until he could scarcely get about. Within a week he became totally paralyzed from the waist down, and there was incontinence of urine and feces. From day to day the paralysis ascended, gradually involving the arms and shoulders, and when Dr. Starr first saw him the face was slightly affected and the neck was stiff and painful. After remaining in this condition for two or three days, the paralysis subsided from the face and the stiffness of the neck disappeared. At the present time he was in a state of apparent complete paraplegia below the sixth rib, with marked weakness and reaction of degeneration in all the muscles of the arm up to the deltoid. These cases of rapidly ascending myelitis, Dr. Starr said, were extremely rare, and were usually due to an infection. In this case the spinal canal was tapped and the fluid carefully tested on various media, with entirely negative results. No evidences of any infection could be found so far as the spinal fluid was concerned.

Dr. Starr also reported the case of a young woman who, after dancing all night, went out during a severe snow storm, and upon her arrival home she was unable to pass urine. During the night both of her legs became paralyzed and there was incontinence of urine. Her symptoms gradually subsided, and now, at the end of three years, she was perfectly well with the exception of a small anesthetic area in the groin. In her case, the last symptom to disappear was the incontinence of urine.

Dr. Kinnicutt, in discussing Dr. Starr's case of ascending myelitis, said that two or three cases had been reported in which the typhoid bacilli were found in the cord. This raised the possibility that at least some of these cases were of bacterial origin.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held April 21, 1908.

Dr. Herbert S. Carter in the Chair.

The Association of Tuberculosis of the Lungs with Diabetes Mellitus.—Dr. Henry L. Shively read this paper. He said that for two diseases so essentially different in their nature as were pulmonary tuberculosis and diabetes mellitus, there were certain points of analogy between them which were at once curious and striking. Diabetes was to be considered a typical example of a disease of metabolism, of disturbed function due to the action of unknown toxins originating within the body itself, and it was assumed that the pathological basis of true diabetes was a congenital or acquired insufficiency of certain histological structures of the pancreas. Both diseases were usually progressive in their course and were regularly attended by emaciation; in both there was an impairment of the power to utilize carbohydrates; both diseases were very fatal in early life, and were, on the other hand, comparatively well withstood when they appeared after middle age. Both diseases had strong racial affinities. Both were more common in cities than in the country, and in both the hereditary predisposition was of some account in the etiology. In both diseases drug treatment was of relatively little value as compared with the importance of detailed attention to hygiene and diet. The prognosis in both was largely dependent upon the social and financial status of the patient. Both diseases exercised a decided effect upon the psychical attitude and morale of the patient. Finally both tuberculosis and diabetes were often associated in the same person. In most cases the tuberculosis was secondary to the diabetes, but this was not invariably the case. The tuberculous tendency of diabetics was now, however, very generally considered to be due to the hyperglycemia and hyperglycosis of their tissues, for it was well known that the tubercle bacillus had a "sweet tooth," developing most luxuriantly in a culture medium to which sugar had been added. Frequent as was the association of the two diseases, one or the other in its early stages was not infrequently overlooked. Tuberculosis of the lungs in diabetics, especially of the obese type, frequently ran an atypical course. It had frequently been observed that when phthisis developed in a diabetic subject there might be a marked diminution in the quantity of urine and the percentage of sugar would fall, delusive signs of improvement. The diabetes continued unchecked, and was hastened in its progress by the complicating tuberculosis. Diabetics who neglected their diet and thus invited an access of glycosuria were more likely to become tuberculous. The recognition of the coexistence of diabetes and tuberculosis had an important bearing on the prognosis and treatment of the patient. Not infrequently, in examining tuberculous patients, individuals were discovered to be diabetic who had had no instruction as to diet and who had been receiving a syrupy cough mixture and cod liver oil with extract of malt, the latter consisting of more than 50 per cent. maltose, which was immediately converted into grape sugar in the intestine. Some of these patients were found to have developed a marked acidosis. The presence of acetone bodies, which were to be regarded as forerunners of the danger of coma, made it a question of more than theoretical interest whether the administration of large quantities of oils and fats, which was an important part of the dietetic treatment of tuberculosis, might not possibly hasten a fatal termination in diabetic coma. Fortunately, many of the indications for treatment were the same for both diseases. One could not too strongly urge the importance of safeguarding the diabetic from tuberculous infection. Of six cases of associated diabetes and tuberculosis recently under observation at the tuberculous clinic of the Presbyterian Hospital, in all but one the diabetes

preceded the development of the pulmonary disease. In this case the patient was undoubtedly tuberculous at least a year and a half before the appearance of the diabetic symptoms. In four cases the tuberculosis developed eighteen months, twelve months, seven months, and two months respectively after the patients were known to be diabetic. In the remaining case the time could not be ascertained. A valuable and seemingly practical extension of the work of district nurses and the diet kitchen, which had been so helpful in the tuberculosis clinic, would be the instruction in the preparation and supervision of food for the diabetic, which was now very imperfectly attended to in the tenement home.

Dr. Charles M. Cauldwell said that twenty-five years ago the late Dr. Alfred Loomis, knowing that Dr. Cauldwell was handling many cases of consumption, asked him to investigate carefully a few hundred of the cases in order to find out how many had diabetes; this was to give Dr. Loomis an idea as to how they were running clinically in New York. He expected to find a large number of the consumptives, those advanced and far advanced in the disease, with sugar in the urine. Among 506 cases examined, only 16 had genuine diabetes. In 23 there was a small quantity of sugar at times only, and with no other symptom of diabetes. They would not have suspected sugar in the urine, and it was found only because of the systematic examinations made of those cases under their care. Almost all the patients were Irish or German or Americans of Irish parentage. There were a very few English, French, and Swedes among them. The proportion of only 16 cases of associated diabetes among 506 patients known to be tuberculous he believed to be much smaller than really existed to-day if one looked over a a like number of cases in this city. With regard to the use of arsenic in the treatment of these patients, he did not believe sufficient emphasis had been brought to bear on it. He thought that if they could expect anything from the use of drugs, in the majority of the cases, in addition to the proper diet, much could be expected from pushing arsenic; this would cause at least a temporary disappearance of the sugar and produce a marked improvement in the patient's condition. Arsenic must be pushed to its highest point; it should then be held at that point, and later increased if the patient would tolerate it.

Dr. Walter Mendelson said that the concurrence of diabetes with tuberculosis in cases occurring in private practice was not so great as Dr. Shively's statistics would seem to indicate. He said he had seen many cases of diabetes in the course of his practice, and yet he could recall but one patient who subsequently developed tuberculosis. There was no doubt but that the class of patients had a great deal to do with the association of these two diseases.

Dr. Leonard Weber said he had tried to divide cases of diabetes into two series, first, those occurring from infancy to thirty-five years old, and, secondly, those occurring between thirty-five years and seventy or over. Of four cases he recalled three were girls, and one was a boy. One of them developed acute diabetes after an acute attack of scarlet fever; another after the administration of large doses of bromide of potassium; he could not recall what diseases preceded the diabetes in the other two. Of seven cases four or five developed acute tuberculosis, and two of them died after three months; the post mortem in these cases showed a breaking down of the lung tissue. There was certainly a predisposition for diabetics to become infected with the tubercle bacillus, as there was after any acute disease whose character was not only severe but deleterious. He reported the case of a man, thirty years old, who always was perfectly well, but occasionally became intoxicated. One winter he became intoxicated in Brooklyn, returned home standing on the ferry boat, was chilled and, four weeks later developed an acute diabetes. He died within one year from pulmonary tuberculosis. In the second series of cases there were found many which were generally subacute or chronic. Among these cases there was not a single one, so far as he had been able to determine, in which tuberculous deposits in the lungs were even suspected. With regard to acidosis of the blood, and the fact that it might not be the cause of coma in these cases, Dr. Weber said he was decidedly of the opinion that it was the cause. Oxybutyric acid was the great power that destroyed life in acute diabetic coma. He reported the case of a lady, seventy-two years old, who had an attack of coma, not very severe. She had had diabetes for eighteen years. When in this coma he caused the bowels to be freely evacuated, and then gave two or three ounces of bicarbonate of sodium in twenty-four hours, continuing it for three days, and the patient is alive to-day.

Dr. Henry S. Stark said that after a careful study he had come to the conclusion that there was no pathological relationship that could be established between these two diseases; this opinion was based upon clinical observation. He had recently made ocular tuberculin tests in 18 cases of diabetes, and he was surprised to get negative results in 95 per cent. of the cases. Most of the patients were well-established diabetics, with suspicious symptoms, including cough, and it was to be suspected that a tuberculous lesion accompanied the disease. He proved that there was no pathological relationship between diabetes and tuberculosis. In many of the skin manifestations, such as carbuncles, furunculosis, etc., sections were taken and subjected to microscopical examination, and the tubercle bacilli, which might be expected to be present, were never demonstrated. Consequently he came to this conclusion, that there was no pathological relationship between the two diseases. With regard to the sanatorium treatment which the doctor advocated, it was a difficult matter to get diabetics to submit to sanatorium treatment, because, as a rule, they were well people; many confirmed diabetics were never aware of their condition until told by the insurance examiner. He emphasized the fact that diabetics were very liable to tuberculous infection. The real relationship between these two diseases existed only in the fact that the tissues of the diabetic made an excellent pabulum, especially for the growth of the streptococci. With regard to the relationship between diabetic coma and acidosis, he said he had on several occasions denied such a relationship. He was about the first to deny that oxybutyric acid was a cause of the diabetic coma. He believed, however, that if proper facilities were to be had for examining the urine, oxybutyric acid could be demonstrated in the urine in every confirmed diabetic.

Dr. A. Mayer did not believe that the question of age entered materially into this relationship as much as the question of the patient's surroundings and the severity of the disease. Among 50 diabetics he recalled 20 with tuberculosis, making 40 per cent. Von Noorden called attention to the fact that tuberculosis occurred in 25 per cent. of the cases. Dr. Mayer said he had been able to follow 168 cases in private practice. These cases did not include those seen in consultation or cases only seen occasionally. Among these 168 cases occurred 21 deaths; of these 21 4 were tuberculous. One was an individual of seventy years with hemoptysis; another was an individual of seventy-three years with no sign of tuberculosis at all except in the sputum; another was a young man, thirty-four years old, who contracted syphilis with his diabetes, the diabetes running a very rapid course; another was a patient aged forty-three, without symptoms of tuberculosis at all except the ordinary physical signs and the sputum. In a paper read before the Section six or eight years ago in a symposium, he said he mentioned the fact that diabetes and tuberculosis were commonly associated and also that one-fourth of the patients that died, died from other troubles.

Dr. Heinrich Sterne said he had made some interesting investigations regarding diabetes in New York City and had gone to the Board of Health and looked over the cases and tabulated them, and he found that of all the cases of

diabetes that were reported to the Board of Health in this city prior to six years ago, less than 8 per cent. died of tuberculosis. This showed that probably in New York City tuberculosis was not so commonly associated with diabetes as it was in Germany or in England. On the other hand, in this country a complication frequently met with, equally as common as tuberculosis, was pneumonia. Among the 21 deaths referred to, 4 died of acute pneumonia. Gangrene of the lungs, complicating diabetes, appeared to be more common in Germany and England than in this country. The statement by the reader of the paper in regard to facts was not exactly correct according to the latest investigations; it was not the intake of fats that produced acetone; experiments had been made by Von Noorden and others on that point, and it had been proven that the fats were the sheet anchor in the diabetic. If the fats produced acetone, or the mother substance, in the body, it must be the fats which can be washed out from the butter. Von Noorden went into this question fully and in only one or two cases was he able to demonstrate that the intake of fat produced acetone. If a given case of diabetes, complicated by tuberculosis, be deprived of fat, one took from the individual the very substance which was absolutely necessary for the diabetic.

Dr. Shively said, referring to the disinclination of the patient with diabetes to go to a sanatorium for treatment, that there were a number of such institutions abroad. The number of diabetics was small indeed as compared with the number of tuberculous in any community, but he thought there was a field of usefulness in the establishment of such institutions for diabetics, especially when they were of the progressive type. He said he only gave a theoretical objection to the fat diet. He said the only safe rule to go by was to treat the patient without too much regard for theoretical considerations.

Treatment of Neuralgia with Chloroform Subcutaneously.—Dr. S. Ormand Goldan described this method of treatment, which he had employed with success during the past ten years. The technique consisted in injecting pure chloroform in quantities varying from two to ten minims into the site of the neuralgic area with an ordinary sterilized hypodermic syringe with aseptic precautions. Superficial injections often acted with certainty even when the pain seemed to be deep seated. While the subcutaneous injection of chloroform was exceedingly easy of application, all patients would not submit to it. The method produced certain reactions which seemed alarming to some patients. In acute neuralgia, where the cause was easily determined, general medical treatment would usually prove effective. Where, however, all palliative measures had failed, the patient would be willing, as a rule, to submit to almost any treatment which would relieve him of his suffering, and in these cases the treatment with chloroform would almost always prove successful, in fact, almost magical, and for this reason he had termed the method specific. The class of neuralgia subjected to chloroform treatment he classed as follows: Supraorbital neuralgia, first branch; infraorbital neuralgia, second branch; mandibular neuralgia, third branch; torticollis, brachial neuralgia, intercostal neuralgia, sciatica, lumbago, inguinal neuralgia, coccygodynia, plantar and tendinous neuralgia.

Dr. Herbert S. Carter asked Dr. Goldan what the intervals were between the injections.

Dr. Goldan replied that the injections were given as often as the patient would permit. He had had patients return for further treatments. He recalled one patient with lumbago and who had been under various treatments; instead of getting better he got worse. After two or three visits to him Dr. Goldan decided to use his specific method and, curiously enough, when he left the office he did so walking perfectly erect and free from all pain. Some patients require injecting every other day. Dr. Goldan then presented two cases to show the results of his treatment.

Pulmonary Arteriosclerosis, with Specimen.—Dr. Harlow Brooks reported this case and showed a specimen. This was of interest because of the condition of the heart and lungs. The patient was a woman, thirty-six years old, with a negative family history except a history of hemiplegia. There was no history suggestive of syphilis, except one miscarriage. She presented herself because of a hemiplegia with the usual manifestations. Upon examining the lungs there were found scattered areas of high-pitched râles, and exaggerated breathing. She had a fibrotic form of chronic bronchopneumonia. Upon auscultation there were found a loud diastolic murmur and a fine systolic murmur at the apex. The patient died finally of chronic nephritis, with amyloid degeneration, dilatation of left heart and arteriosclerosis of the pulmonary artery. There was no microscopical evidence of syphilis. The condition found was a moderate arteriosclerosis of the pulmonary tree. There was an aortic lesion. There was an old and marked sclerosis of the pulmonary cells as well as a marked arteriosclerosis of the pulmonary artery, not only in the artery itself, but in its smaller ramifications. Throughout the entire lung tissue an enormous arterial thickening was present. Dr. Brooks gave two possible explanations for the conditions found. First, it might be due to syphilis which, for some unaccountable reason, attacked one system, the chief point of attack being the pulmonary artery. Second, there might have been a primary endocarditis, followed by an arteriosclerosis of the pulmonary tree. The changes in the pulmonary artery far exceeded those in other arteries of the body. Dr. Brooks' explanation was that there was first a primary disease of the right heart, with some valvular lesion, which terminated in a dilatation of the left heart. Following the endocarditis and the valvular changes there occurred a great increase in intrapulmonary pressure. There was quite a remarkable degree of hypertrophy of the walls of the right ventricle. This was the only explanation he could advance for the extreme degree of sclerosis present.

The Surgical Treatment of Alveolar Pulmonary Emphysema.—Dr. Charles Goodman and Dr. Siegfried Wachsmann presented this communication, which was read by Dr. Goodman. (See page 807.)

Dr. Rudisch said that he had occasion to look up the literature on this subject, and he found that Dr. Goodman differed with Freund somewhat as to the cause of the condition. Freund stated that emphysema was produced by a primary rigidity of the cartilages. Of primary interest was this rigidity of the cartilages, the second, third, fourth, and fifth, mostly on the right side, thus accounting for the distortion of the thorax seen in emphysema. He recalled one instance where, at the post mortem, upon opening the thorax, the lungs collapsed. In the ordinary cases produced by asthma, they did not collapse.

Dr. A. Jacobi said he was delighted to know that these patients could be operated upon, and in such a short time be so improved. He asked Dr. Goodman if these patients had been receiving any medicines at the time of operation or since.

Dr. Goodman replied that they had been receiving narcotics and medicines for their bronchitis, but not so much as previous to operation. They received one-sixth of a grain of heroin occasionally, only the first few nights, to relieve them of their pain, which resulted from the operation. They received iodide of potassium, heroin, and digitalis.

Dr. Jacobi said that this operation was on trial, and the outlook was favorable. But the time was too short to pass a fair judgment upon it, and he warned against its abuse. He could well imagine that many would attempt the operation in cases where it was not indicated. They should not operate upon every case of emphysema, whether primary or secondary. Dr. Jacobi wondered if they all knew who Freund was. Freund published his first writings in 1858; that was fifty years ago. In 1859 he wrote a paper

on ossification of the first costal cartilage in connection with the origin of apical tuberculosis. He was a man of superior qualities. He stopped writing on that subject for a time because he had the chair of Obstetrics and Diseases of Women in two different universities, one at Berlin, the other at Strasburg. Six years ago he returned to his original work. Four years ago he presented a new paper on the same subject, and he had been writing upon it ever since. That the cases presented by Dr. Goodman, operated upon such a short time ago, were not entirely well was self-evident. Freund said that rigidity of the thorax was the result primarily of an early ossification of the costal ribs; and, further than that, a change in the cartilages themselves. There was a final deposit of lime in the cartilages, as well as much thickening. The rigidity of the chest wall was not only the result of the ossification, but also because of the rigidity of the costal cartilages. These were the cases that Freund wanted to operate upon. Other cases should not be operated upon. If every case of emphysema was operated upon where the ribs and cartilages were normal, there would remain the same condition after. The majority of the cases they met with were the result of a chronic bronchial catarrh, with changes in the lungs, sometimes complicated with cardiac disease, etc. The presence of heart disease as such was not a contraindication. Dr. Jacobi said he could not imagine a case where at autopsy an inflated lung would bulge out, that would be benefited by any sort of operation unless it was the removal of large pieces from a large number of ribs. On the other hand, Dr. Goodman had told them that when the chest wall was opened the lung retracted. Here the emphysema was the result of rigidity of the chest; when the chest was opened the lungs did not bulge, but retracted. These were the two kinds of emphysema. He believed that, for the time being, they should refrain from operating upon those cases that did not result from any change in the bones. He feared the operation would be abused unless they operated only upon such cases. Many might be disappointed with the operation unless the cases were selected, and he did not want to see the operation consigned to the junk heap without a full and thorough trial.

Dr. GOODMAN said that in cases of pure emphysema with asthmatic complications local anesthesia might be tried. The technique he had outlined as a result of his experience could be employed under local anesthesia. He had already pointed out the fact that the ribs distinctly retracted; when the pleura was exposed at operation the lung could be distinctly seen to retract and to pull the ribs along at times. All the cases they had operated upon had shown a very decided improvement.

Post-Typhoid Sepsis.—Dr. FORBES R. MCCREERY reported a case of post-typhoid sepsis. An ordinary course of the disease occurred until the fourth week, when, instead of becoming normal, the temperature remained up, and became still higher in the fifth week, reaching 103°. The patient was twenty-one years old, and very much emaciated. He started feeding with solid food, and this worked nicely for a time, when, at the end of the fifth week, the temperature went to normal, and remained normal for four or five days. In the sixth week, the patient had chills, and continued to have chills and rise in the temperature for the next two weeks. The chills were very severe, lasting at times for hours. Nothing could be found to account for the condition. The patient was allowed to get out of bed with a temperature of 105°. In the seventh week there developed a phlebitis of the left popliteal vein, which cleared up in the course of a week. The temperature became normal in the eighth week, and the patient left the hospital. No malarial organisms could be found in the blood. The disease was not influenced by quinine as much as it would have been had there been a malarial organism present. There was a slight increase in the number of leucocytes.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 9, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	518	185
Diphtheria	394	37
Measles	1668	47
Scarlet Fever	908	43
Smallpox	—	—
Varicella	136	—
Typhoid Fever	32	8
Whooping Cough	32	5
Cerebrospinal Meningitis	8	7
Malarial Fever	—	—
Totals	3696	332

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending May 8, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, San Francisco	Apr.	11–18	15	..
District of Columbia, Washington	Apr.	15–25	2	..
Illinois, Chicago	Apr.	18–25	7	..
Galesburg	Apr.	18–25	3	..
Rock Island	Apr.	18–25	1	..
Springfield	Apr.	16–23	3	..
Indiana, Ft. Wayne	Apr.	18–25	1	..
Indianapolis	Apr.	19–26	24	..
Iowa, Ottumwa	Apr.	18–25	8	..
Kansas, Topeka	Apr.	11–25	31	..
Louisiana, New Orleans	Apr.	18–25	5	1
Michigan, Detroit	Apr.	18–25	3	..
Grand Rapids	Apr.	18–25	5	..
Kalamazoo	Apr.	11–18	3	..
Port Huron	Apr.	11–18	1	..
Missouri, Kansas City	Apr.	18–25	16	..
St. Joseph	Apr.	18–25	10	..
St. Louis	Apr.	18–25	7	..
Montana, Butte	Apr.	14–21	1	..
Nebraska, Nebraska City	Apr.	19–26	5	..
Ohio, Cincinnati	Apr.	17–24	13	..
Toledo	Apr.	11–18	1	..
Tennessee, Nashville	Apr.	18–25	3	..
Texas, Galveston	Apr.	17–24	1	..
San Antonio	Apr.	11–25	21	..
Virginia, Richmond	Apr.	18–25	1	..
Washington, Spokane	Apr.	11–18	12	..
Wisconsin, La Crosse	Apr.	18–25	5	..
Milwaukee	Apr.	11–25	3	..
Racine	Apr.	18–25	4	..

SMALLPOX—FOREIGN.

Algeria, Algiers	Mar.	21–31	..	2
Arabia, Aden	Mar.	30–Apr. 6	..	1
Brazil, Manaos	Mar.	21–28	2	..
Para	Mar.	28–Apr. 11	2	1
Canada, Halifax	Apr.	18–25	4	..
Toronto	Mar.	21–Apr. 25	18	..
Winnipeg	Apr.	1–18	1	..
Ecuador, Guayaquil	Mar.	28–Apr. 4	..	2
Egypt, Cairo	Mar.	25–Apr. 8	12	4
France, Paris	Apr.	4–11	5	..
Toulon	Mar.	1–31	8	..
Great Britain, Leith	Apr.	4–11	1	..
India, Bombay	Mar.	24–31	..	67
Italy, General	Apr.	9–16	67	..
Catania	Apr.	9–16	1	..
Naples	Apr.	4–11	1	Imported
Japan, Kobe	Mar.	21–28	23	13
Osaka	Mar.	21–28	238	96
Malta	Mar.	21–Apr. 4	3	1
Mexico, Aguascalientes	Apr.	12–19	..	3
Monterey	Apr.	5–12	..	1
Vera Cruz	Apr	13	1	Imported
Russia, Moscow	Mar.	28–Apr. 4	43	13
Odessa	Mar.	28–Apr. 4	1	..
St. Petersburg	Mar.	21–Apr. 4	42	16
Spain, Almeira	Mar.	1–31	..	1
Cadiz	Mar.	1–31	..	1
Denia	Apr.	3–10	10	3
Valencia	Apr.	5–12	30	3
Vigo	Apr.	4–11	..	1
Straits Settlements: Penang	Mar.	11–21	..	1
Singapore	Mar.	7–14	..	1
Turkey, Constantinople	Mar.	22–Apr. 2	20	..
Zanzibar	Mar.	7–14	..	1

YELLOW FEVER.

Barbados, Bridgetown	Apr.	18	1	1
Brazil, Manaos	Mar.	21–Apr. 4	6	6
Para	Mar.	28–Apr. 11	10	8
Cuba, Santiago	May	2	1	..
Ecuador, Guayaquil	Mar.	28–Apr. 4	..	5

CHOLERA.

India, Bombay	Mar.	24–31	..	1

PLAGUE.

China, Amoy	Apr.	25	..	Present
Ecuador, Guayaquil	Mar.	28–Apr. 4	..	35
Egypt, Provinces—				
Assiout	Mar.	20–21	5	2
Beni Souef	Mar.	21	1	..
Fayoum	Mar.	20–26	2	2
Galyoobeeyah	Mar.	21	1	1
Garbieh	Mar.	23–26	2	..

Medical Record

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Original Articles.

A CLINICAL STUDY OF A CASE OF BRAIN TUMOR; OPERATION; COMPLETE RECOVERY.

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The results achieved in surgery of the nervous system are not sufficiently brilliant to cause widespread optimism in the medical mind. Indeed, the profession generally holds decidedly pessimistic views regarding the treatment of nervous diseases whether by medical or surgical means. This is not true, however, of most of those whose lines of work compel them constantly to deal with morbid states affecting the nervous system. Such are *usually* optimistic, but their optimism in surgery of the nervous system is founded not upon the many brilliant results, but upon the very few; and upon the palliation which may often be secured by surgical means. This is especially true of surgical therapeutics of brain tumor. The successes of surgery in tumor of the brain are indeed few as far as complete restoration is concerned, but when one considers the absolute and inevitable hopelessness of such cases without surgical intervention, and the possible palliation of indescribable suffering even when complete restoration cannot be obtained, these results, few though they be, are still sufficient to cause both the surgeon and neurologist to be optimists in this field of work. The problems confronting them are plain, but their solution is difficult. The problems briefly stated are these: First—*early and accurate diagnosis;* second—*proper surgical technique.* Brain tumor is usually localizable; therefore, an early and localizing diagnosis is always desirable if complete restoration is to be hoped for. If palliation alone is to be expected, precise localization is not absolutely necessary though always desirable. It may be stated, however, that tumor of the brain giving rise to symptoms indicating palliation will usually present unmistakable localizing symptoms. The presence of brain tumor, its location, its probable nature, and the surgical indications, whether extirpation or mere palliation, are problems the surgeon has a right to expect—the neurologist to attempt to solve. On the other hand, the neurologist expects, and the interest of the patient requires, the surgeon to be possessed of a degree of technical skill commensurate with the difficulties constantly met with in this field of work. The *ideal* would be a surgeon who is at the same time a neurologist. The difficulties encountered in surgery of the nervous system are so great that it is rapidly becoming, and justly so, a special department of surgery. The development of more men like Horsley and Balance in England; Krause and Borchard in Germany; Kocher in Switzerland; Chippault in France; and Keen, Cushing, and Frazier in America, will go a long way toward dissipating the pessimism in the general medical mind concerning surgery of the nervous system. By this statement, I do not mean to imply that only such men should operate on the nervous system—far from it—but I do mean that he who would do this work should have had some special training—not only special technical training, but also in the physiology, anatomy, and pathology of the central nervous system—in other words, he should have given the whole subject his earnest consideration before invading the brain or spinal cord with the same degree of assurance that he would the abdominal cavity. The surgeon and the neurologist are indispensable to each other at the present time in surgery of the nervous system. It is a field wherein they should both work shoulder to shoulder, and when it is tilled with earnestness and mutual consideration, their joint labor can only have the result of saving or prolonging many lives.

The case, the subject of this study, is one wherein the joint labor of surgeon and neurologist happily resulted in the relief of distressing symptoms and a complete restoration of function.

On September 25, 1906, I was asked by Dr. P. G. Paugh to see Mrs. B., age 50, in consultation. She had been under his observation for a few weeks, complaining of motor weakness of the right extremities, constant paresthesia of the right forearm and hand and a peculiar speech defect. The immediate history was to the effect that on the evening of September 23, 40 hours prior to my visit, the patient had been seized with a convulsion beginning in the right hand—extending to the arm, face, and leg on the same side of the body—covering a period of three hours and ending with complete loss of consciousness. Since the cessation of the convulsion, the patient had been totally and completely paralyzed on the right side and though consciousness returned early, she had been unable to speak, yet showing evidence of being cognizant of her surroundings, and of being able to understand everything said to her.

A physical examination at this time revealed an individual small in stature, prematurely aged, poorly nourished, and having rather a cachetic appearance. She was unable to make the slightest voluntary movement with either the right upper or lower extremity—voluntary movements of the other extremities were normal. The right lower face was distinctly paretic but the innervation of the upper face was in every way normal. The left pupil was slightly larger than the right, both pupils were symmetrical, reacted normally and with the exception of slightly defective convergence, the ocular excursions were normal. The cranial nerves were otherwise intact. An ophthalmoscopic examination revealed well nourished discs. Respiratory excursions, notably inspirations, were much less on right than on left with normal lung findings. Respira-

tions 20; pulse 80 per minute and regular, with nowhere evidence of arteriosclerosis, and the heart sounds were normal. The right forearm, hand, and fingers were distinctly cyanotic, and particularly the finger nails, which also showed distinct longitudinal corrugations. The muscle volume of the right extremities was somewhat less than the left. The upper extremity was in position of adduction and inward rotation at shoulder, semiflexion of elbow, pronation of forearm with slight flexion of wrist, adduction of thumb, and flexion of fingers. There was decided rigidity of adductors at shoulder, pronators and flexors of forearm and of flexors of wrist, and finger clonus was readily elicited. There was slight foot drop with outward rotation at the hip; distinct rigidity in hip adductors, in quadriceps and calf muscles with patellar and ankle clonus on the right. No disturbance in muscle tone in left extremities. The tendon reflexes were decidedly more active on the right than on the left. Babinski, Oppenheim, and Gordon reflexes were present on right with plantar response on left; abdominal reflexes absent in all divisions on both sides. Sensation to temperature, pain and touch normal throughout. Palpation of the skull revealed no scars, no abnormal depressions or elevations. The skull was not tender to palpation or percussion, but the percussion note in the left superior frontoparietal region, in an area somewhat larger than a silver dollar, was distinctly of lower pitch than in the corresponding area on the other side or in the adjacent area on the same side. The patient readily understood everything said to her, showed that she recognized various objects and their uses but was unable to name them or to repeat what was said to her. She would seemingly make the greatest effort to talk, and about the only words she could say were "I can't" and "yes, yes." From her daughter with whom she lived and from Dr. Paugh, the following facts were obtained as to her family and personal history:

Her father died before his 30th year of some acute illness, and the mother in her 65th year; three sisters died during childhood, two sisters—one older and one younger—are both healthy; family history otherwise negative. Patient had always been healthy and had never had serious illness. She was married in her 16th year, had given birth to four healthy children; one of these died when 3 years old; others are living and healthy—oldest 32, youngest 19. She had menstruated in her 12th year and menopause occurred 3 years ago. In her first confinement she had sustained a severe perineal laceration and had suffered since then with uterine prolapse and frequent micturition. Her husband had been dissipated and about 16 years ago he had struck her a violent blow over the top of the head with his fist; she was momentarily stunned but suffered no apparent inconvenience therefrom. She had never been subject to headaches, nausea, or vomiting.

Her first indisposition occurred in 1903 with sudden flushes of heat coming on at varying intervals; during these attacks she would be compelled to sit or lie for 15 or 20 minutes, and these were attributed to change of life, and she received no medical attention on account of them. During the summer of 1904 she began complaining of numbness in the thumb and index finger of the right hand and a few months later came home one day from a shopping expedition complaining of feeling sick and dazed and of inability properly to use the right upper extremity. After this a constant numb or unnatural sensation developed in the fingers of the right hand and the hand and fingers became reddened. This discoloration was at times quite noticeable, at other times less so, but the numbness was almost constant. For months, she used liniments and massage, and in April, 1905, upon medical advice, spent three weeks in Hot Springs, Ark., taking baths daily, but obtaining no relief. Her symptoms increased, and in the summer of 1905 she became suddenly ill during the night, and a physician, who was called and whose name could not be remembered, diagnosed, "blood clot, pressing on the brain," and advised operation. She was paralyzed on the right side of the body and was speechless for 36 hours, but recovered within three days, and in addition to the weakness in the right arm, which became more pronounced after this illness, she noticed a tendency to drag the right foot in walking. A few weeks following this attack, while stepping out of a bath, she fell and bruised her right shoulder and arm. She consulted two prominent physicians at this time, submitted to an *x*-ray examination, but nothing abnormal was found about the right shoulder joint where the trouble was believed to be located. The weakness about the right upper extremity having progressed to that degree that she could no longer attend to household duties, she came to live with her daughter in November, 1905. During the last week of December, 1905, she had an attack of what was thought to be apoplexy. The muscles of the right side of the face and body became convulsed, eyes turned upward and to the right, respirations labored. She frothed at the mouth and voided urine during the attack, the whole attack having a duration of about 15 minutes; and within a period of about half an hour, she had a similar attack in every way, lasting 35 or 40 minutes. During the succeeding 24 hours, she was absolutely speechless, though conscious; she seemingly understood what was said to her and swallowed medicine and liquid nourishment. The right arm and leg were totally paralyzed and the face was drawn to the left for about 36 hours. She remained in bed for a week and after a couple of weeks seemed nearly as well as before the attack, excepting that the weakness seemed rather more pronounced in the right extremities than it had been before. In the beginning of 1905, the patient developed a peculiar speech defect. In the midst of a sentence, she would suddenly stop with the words: "Oh! I can't talk," though she would seemingly make the greatest effort to continue. After a variable period, from a few seconds to five minutes, she would suddenly begin talking again.

At about the same time the speech defect developed, the patient began complaining of a frequent recurring momentary inability to use the right upper extremity and especially the hand. If when she attempted to make a fist or grasp an object, and if at other times she attempted to extend the fingers or to release an object she would be unable to do so. This disturbance would frequently occur coincidently with the speech defect, but usually independently of it and was of more frequent occurrence than the speech defect.

At about 5 P. M. September 25, a few hours after my visit, the patient had a rightsided convulsion involving only the hand and face and having a duration of about 15 minutes. She remained free from convulsions until October 4, when she had another attack similar to that of September 25, excepting that it was preceded by a one-half hour period of intense nervousness. The patient was seen by me daily and about three days after the

attack of September 23, was able to make feeble movements with the right extremities and to speak both spontaneously and by repetition. She was at first decidedly paraphasic, but always recognized her errors. She made rapid improvement in all respects, and within 10 days was able to walk about the room and had fair use of the right upper extremity. During my visits, I had frequent occasion to observe the sudden impediment in speech and motility previously mentioned. The following observations were made on October 4, 1906: When the patient was told to make a fist, she was momentarily unable to do so, and instead made slight adduction movements at the shoulder and then a little later was unable to make these movements; still a few minutes later, she was able to abduct the arm to a horizontal position, to make limited extension and flexion movements at the elbow, pronation and supination of the forearm, and all normal movements of the wrist and fingers, though these movements were weak. She was able to make all normal movements of the right lower extremity, though in a slow and hesitating manner. On this occasion, while the patient was talking about her trouble, she suddenly ceased in the midst of a sentence and for the next five minutes was unable to utter a sound though apparently making every effort to talk, during which irregular and sighing respirations occurred and she appeared to be worried and uncomfortable. Her daughter finally said: "You surely can say yes or no, can't you?" when suddenly the patient's face brightened with a smile and then, and in an explosive manner, she repeated several times "you can say yes or no, can't you?" The patient then resumed the thread of conversation in which she confirmed the statement that she had never had headache, nausea, or vomiting, but had frequently complained of momentary dizziness and at such times had often had a thumping in the left side of the head, and it had often been so distinct that she imagined others could hear it, too. Patient also stated that she had frequently experienced shooting pains in the right arm, especially in the fingers, but in no other part of the body. The pain was paroxysmal and was always most severe when the hand showed the greatest discoloration.

The result of an ophthalmoscopic examination on September 27, 1906, by Dr. John Green, Jr., was as follows: "Both nerve heads clean cut, tinted a healthy pink throughout; retinal vessels presented no deviation from the normal either in caliber or course. In brief, the ophthalmoscopic picture was that of a well-nourished optic nerve head and retina."

Dr. Paugh had made repeated examinations of the urine since patient had been under his observation and also since the attack of September 23, and had never found any abnormal condition.

On October 4, while inspecting the patient's right hand, it was noticed for the first time that irregular clonic contractions were present in the extensor tendons of the fingers, especially of the index and middle fingers, in the short extensor for the thumb and the interosseous primus muscle. These were not constant, but occurred in "little spells" and could be felt when they could not be seen. Patient stated that she had frequently noticed these jerkings about the back of her hand ever since the numbness began, and she had never noticed them in any other part of the extremities. Repeated observations failed to disclose these contractions in any other muscles. At this time there was no sagging of the right shoulder and she could elevate her shoulders equally. The defective innervation in lower facial had entirely disappeared, her gait was only slightly paretic on the right, and ankle and patellar clonus had disappeared; there was no longer rigidity in the calf-muscles, but it was still slightly present in quadriceps and adductor groups, also in the adductors of the shoulders, flexors and pronators of the forearm and was especially marked in the palmaris longus muscle. On passively extending the wrist, the tendon of this muscle stood out prominently and clonus was always readily provoked. The difference in the tendon reflexes between the two sides of the body was still pronounced. Babinski, Oppenheim and Gordon reflexes were still present on the right. The abdominal reflexes were still absent in all divisions on the right, but were now present on the left. Sensation in all qualities including posture and form was normal. The pupils were now of equal size and as at first examination, reacted in every way normally.

Comment.—The immediate problems presenting themselves on September 25, 1906, were: First, What was the cause of the convulsion of two days ago, the total paralysis of the right extremities and of the complete motor aphasia accompanying it? Second, As to the prognosis.

A physician being suddenly called into the presence of an individual presenting the condition of our patient on September 25, 1906, and being unable to obtain any history other than that pertaining to the immediate illness, would probably find the solution of these problems very difficult if not impossible. With such limited knowledge, he would probably make the diagnosis apoplexy and give a guarded prognosis. Certainly, such a diagnosis would seem the most probable since cerebral hemorrhage, thrombosis, or embolism occurring in certain localities might account for the convulsive seizure, the total paralysis with attending phenomena, and the speech defect; but a careful analysis of the findings would render such a diagnosis and prognosis highly improbable.

The findings militating against these conclusions were: First, the totality of the paralysis of the right extremities with decided weakness in lower facial muscles still persisting after 40 hours, during which time the sensorium had been entirely free; second, the absence of the slightest weakness in upper facial muscles with entire freedom of the 12th and other cranial nerves; third, the vasomotor trophic disturbance about the right upper extremity.

Such findings did not preclude the possibility of an acute process having taken place such as hemorrhage, thrombosis, embolism, or uremia, but they did render such a diagnosis highly improbable; especially so, since as is well known, clonic convulsions persisting over a considerable period of time are frequently followed by total paralysis in the same muscles for a variable period of time after the cessation of the seizure. The immediate history was to the effect that 40 hours previously our patient had been suddenly seized with clonic contractions in the muscles about the right hand, that the convulsive movements had rapidly extended to the upper arm, face, and lower extremity, and that all of these parts were violently convulsed for a period of three hours, and that since the patient had regained consciousness, she had been unable to make the slightest voluntary movement of the right extremities and had been absolutely speechless. While it must be admitted that both apoplectic and uremic states may be ushered in with muscle

twitchings, they practically never have the character, mode of progression, and the persistence as those which had occurred in our patient. Furthermore, for either apoplectic or uremic states to be followed by such total and persistent paralysis with free sensorium almost from the cessation of the seizure would hardly be conceivable. The normal urine, heart and vascular findings and free sensorium absolutely precluded the possibility of a uremic condition and at the same time rendered the diagnosis of apoplexy very improbable.

From these considerations, based wholly upon the immediate history and physical findings, the diagnosis of apoplexy of whatever causation, became less and less tenable and a more probable diagnosis, *i.e.* "exhaustion paralysis" following a Jacksonian fit dependent upon a previously existing condition, became more and more urgent. The vasomotor and especially the trophic disturbances about the right finger-nails added additional support to such conclusions. These conclusions became practically certain when taken in connection with the previous history of our patient. From this we learned, that her first symptoms occurred three years ago and consisted in flashes of heat, accompanied by what must have been suddenly occurring dizziness, since at such times she was compelled to either sit or lie down. In the course of time paresthesia and vasomotor disturbances developed about the right hand, and a little later peculiar momentary motor and speech inhibitions and permanent weakness of the right extremities ensued. Furthermore, it was ascertained that she had had two distinct seizures similar in all respects to the seizure of September 23, 1906, excepting as to duration, and that in both instances there had been complete paralysis of the right side of the body accompanied by a total motor aphasia; that these conditions invariably subsided, so that within a period of two weeks at most the patient had regained her usual state of health and the only change noted was that the weakness of the extremities became a little more marked after each attack.

Therefore, a consideration of the immediate and previous history of the patient, in connection with the findings of the physical examination, rendered the diagnosis *exhaustion paralysis*, following a Jacksonian fit, the only tenable one. The same considerations made it highly probable that the recent Jacksonian fit as well as others preceding it, the paresthesia, the vasomotor trophic disturbances, the character of the persisting weakness, the peculiar momentary motor and speech defects were all dependent upon an essential lesion involving the left cerebrum and having its location in the Rolandic area involving particularly the ascending frontal convolution and to a less extent the ascending parietal convolution. Furthermore, that the portion of the Rolandic area, commonly called the arm center, was most involved. These diagnostic and localizing conceptions were rendered positive by the developments in the case in the succeeding days following the seizure of September 23. It will be remembered that the patient rapidly regained her previous state of health, that she was able to confirm the evidence given by Dr. Paugh and her daughter concerning her history; that we were able to detect the presence of minute Jacksonian spasms in certain muscles about the right upper extremity, and that the patient informed us that she had been conscious of the spasms for more than two years. No more valuable information could be desired than the presence and the history of these spasms in confirming both the diagnosis of a lesion and its exact localization. Both were strongly supported by the presence of decided dullness to percussion in a limited area in the left superior frontoparietal region.

Having determined the presence of a lesion in a certain location, the question naturally arose, what is its nature? The determination of the exact nature of a lesion within the cranial cavity is one of the most difficult problems in neurology. Upon a more or less correct solution of this problem will depend our efforts in relief, whether medical or surgical, whether curative, palliative, or radical. A solution of the problem of the nature of the lesion responsible for our patient's symptom-complex was materially aided by the history, the nature of the speech defect, and motor weakness. It must have been a constant and progressive lesion but at the same time both irritative and variable. While it is true that a certain degree of motor weakness was present, yet the lesion must have been one, to say the least, not rapidly destructive. Indeed, the patient was able to make almost every normal movement at times, though in a paretic manner. In a destructive lesion, let us say, that has already destroyed a motor area or materially interfered with its integrity, certain synergic movements will be found to be impossible. For example, with a more or less complete destruction of the center for the upper extremity a normal fist cannot be made. Our patient could make this movement at times as well as other normal movements of the right upper extremity. The lesion then, strictly speaking, had not yet become a destructive one. What, then, could have been the nature of the lesion which, after a period of three years, had not yet absolutely destroyed any part of the Rolandic area and which was nevertheless progressive and one which was constantly irritative and variable? One could hardly think of any lesion meeting all of these conditions other than a new growth. Assuming this view to be correct, it must have been a new growth neither cortical nor subcortical, but one growing primarily either from the bony or other coverings of the brain. It could not well have been a tumor growing from the bony coverings because the outer table of the skull would certainly have been invaded and for the further reason that a bony tumor could hardly have given rise to any but a destructive brain lesion within a period of three years. There are really but two forms of growth, either one of which might be made responsible for the above-mentioned requirements in bringing about our patient's symptom-complex; one a cavernous-angioma, the other an arachnoidal cyst. The volume of either might be variable yet constantly assuming greater proportions and either, therefore, might account for our patient's symptoms. Head trauma is frequently found in the histories of brain tumor cases, and it will be remembered that 16 years before, our patient had received a stinging blow on the top of the head. Brain tumor usually gives rise to two classes of symptoms: the one called *general*, the other *focal*. In our patient, as we have seen, we had exquisite focal or localizing symptoms but absolutely no general symptoms. The classical general symptoms of brain tumor are severe, often excruciating headache, projectile vomiting, and choked disc; none of these symptoms had ever been present in our patient. General symptoms are frequently in the beginning the only symptoms of brain tumor and they are rarely absent during the course of the disease. They are indeed so constant that without the presence of one or more of them, one is rarely justified in

making the positive diagnosis *brain tumor*. Yet despite this fact, such a diagnosis seemed the only tenable one in our patient and the remaining problem, namely, the possibility of relief, came up for consideration. If relief were to be had, it could only be surgical, and it was naturally not a question of palliation but possible extirpation. From the preceding considerations, it seemed highly probable that radical relief might be secured. Dr. Frank R. Fry kindly saw the patient with me in consultation on October 7, confirmed my deductions, and agreed with me as to the surgical indications in the case. The patient was also seen by Dr. T. C. Witherspoon, and on October 9, 1906, the patient entered the Mullanphy Hospital.

Operation:—The probabilities of radical relief were so great that Dr. Witherspoon elected to do the bone-flap operation. The patient was placed on the table on October 10 under ether anesthesia. A flap comprising three-quarters of a circle was laid in the left frontoparietal region having dimensions of four inches horizontally and three inches vertically and extending to the middle line above and having its base in the mid-temporal region below. Upon turning the bone flap downward, decided tension of the dura was noted near the anterior margin of the opening. Upon deflecting the dura

Fig. 1.—Showing the circumscribed area in which "dullness" was found at the first examination and repeatedly verified. Drawn from a photograph.

at this point, a clear and thin walled cyst was found through which the normal appearing, though greatly depressed convolutions could be seen. The cyst was almost immediately underlying that area of the skull in which dullness had been previously mapped out and having the dimensions and configuration of a small hen's egg (Fig. 1). The larger end of the cyst was overlying the ascending frontal convolution, the other portion over the first and second frontal convolutions and the pre-central sulcus was immediately beneath its center. The ascending frontal convolution was pushed backward against the ascending parietal by the cyst wall, causing a distinct concavity in both. No attempt was made to remove the entire wall of the cyst, which, after its upper portion had been removed, collapsed and could not be dissected out. The curcial incision in the dura was accurately united with gut sutures and without drainage of the cyst cavity; the bone flap with attached scalp was replaced; but since there had been considerable oozing from the diploë, a small rubber tissue drain was inserted between the dura and the bone flap at the posterior inferior angle of the wound and the scalp was united with gut sutures. The whole operation was completed within 45 minutes and the patient was returned to her bed in a state of rather profound shock, but she reacted in a very short time. The rubber tissue drain was removed on the third day, and upon its removal quite a quantity of bloody serum followed it. The wound was not seen again until the twelfth day when the dressings were removed and complete scalp-union had taken place; after this only a protective dressing was employed and the patient returned to her home on the nineteenth day following the operation. After the change of dressings on the third day, the case no longer presented surgical interest, but many interesting neurological phenomena occurred in the succeeding days following the operation, the most striking of which follow:

Post-Operative Phenomena and Present Condition.—When the patient returned to consciousness, she had complete motor aphasia and was unable to make the slightest voluntary movement of the right extremities; and in about six hours after the operation, Jacksonian fits developed, invariably starting in the right thumb and index finger, rapidly extending to the muscles of the upper extremity, shoulder, and face, but rarely involving the lower extremity. During the fits, the muscles about the orbit and brow on both sides, but only of the right lower face, were violently convulsed and the globes oscillated in a clonic manner from the primary to the extreme right lateral position. For the next six or eight hours, there was but little intermission in these seizures and it might well be said, the patient was in a state of Jacksonian status epilepticus. These fits diminished both in intensity and duration, the last occurring on the fourth day after the operation, and she has remained entirely free from them up to the present time. Twenty-four hours after the operation, the patient's speech had returned; she was, however, decidedly paraphasic but could make herself understood. She could also feebly move the right lower, and to a less extent, the upper extremity. It was noted at this time that every vestige of rigidity had disappeared, that the tendon reflexes on the right were less active than at any previous examination, that the abdominal reflexes were again absent on both sides, and that Babinski and Oppenheim reflexes were absent, with Gordon's reflex still present on the right. Forty-eight hours after the operation the patient became absolutely aphasic, she could neither make any effort at talking nor could she understand anything said to her. Effort was made to communicate with her by written and printed symbols but met with failure and the only possible way of communicating with her was by pantomime which she seemed readily to understand. It was believed by both Dr. Witherspoon and myself that these new aphasic symptoms as well as the return of former ones were due to retention of possible oozing, accumulating beneath the bone flap, and it was decided to investigate the matter on the following day in the event of no amelioration occurring within the succeeding few hours. No improvement being noted in the aphasic symptoms, the rubber tissue drain was removed on the following morning with the result as stated above, and after this time the speech defect, both sensory and motor, rapidly disappeared; and since the twentieth day following the operation the patient has remained free from every aphasic symptom. During the first 24 hours after the operation the patient complained of intense pain in the right upper extremity, especially about the finger tips and nails, and particularly the thumb. On examining the extremity, the previously existing hyperemia had almost disappeared and the finger nails were paler than they had ever been before. A large bleb or blis-

ter formation was found involving the radial, palmar, and tip surfaces of right thumb. This increased from day to day and eventually involved fully one-half of the surface of the distal phalanx. Within the next seven days, similar blebs appeared about the tips of index, middle, and ring fingers in the order named. For some hours preceding the formation of each blister, the patient complained of excruciating pain in tip of finger next to be invaded, and after the formation of a blister, the pain became less. When the blisters first appeared they were translucent, but as time went on they became a brownish-black color, hard and dry, and were cast off in the next three or four weeks (Fig. 2). The finger tips even beneath the sloughs, remained exquisitely tender and painful for some time. The patient continued to complain of un-

Fig. 2.—Thee apparance of the thumb and finger tips on the twentieth day after operation.

natural sensations in the hand and fingers for several months following the operation, and while immediately following the operation the previously existing hyperemia of the forearm and of hand was noted to be decidedly less, it did not entirely disappear for several months.

Since the patient left the hospital she has never had a recurrence of her former momentary motor and speech inhibitions. She rapidly regained the full use of her right extremities, is now able to sew, to do the finest needle work, and she experiences no weakness about the right side of the body. Her only complaint now is occasional shooting pain in right little finger. I shall not at this time dwell upon the probable causation of the postoperative neurological phenomena as recited above, but suffice it to say that the necessary exposure and manipulation of the cortex incident to the operation, the processes incident to healing, and the re-establishment of the new relations between the brain and its coverings might well be considered as being responsible for them.

The patient was seen by me only a few days ago, September 30, 1907, when the facts as just recited pertaining to her general condition were ascertained. The physical examination revealed a thoroughly well nourished, contented, and happy individual. Her gait was in every way normal and every vestige of the former hemiplegic attitude had disappeared. Her pupils were equal, reacted promptly, and the ocular excursions, except in convergence, were normal. This slight bilateral defect in convergence was as at the first examination and is probably inherent with this patient; at least the brain tumor was, in my opinion, in no way responsible for it. The patient was able to make every normal syngeric movement with the right extremities, and while the coarse strength in these were slightly less than in those on the left, the difference was proportionate to the muscle volume between the two sides. Every vestige of rigidity had disappeared and no twitchings could be detected in the extensor muscles for fingers and thumb. The skin of the right hand and forearm was no longer cyanotic; the corrugations of the finger nails were less prominent; the finger tips, the former seat of blister formation, were somewhat atrophic but no longer hypersensitive; the tendon reflexes were practically equal; the pathological toe reflexes were all absent and the abdominal reflexes were now present and equal in all divisions on both sides. An ophthalmoscopic examination by Dr. John Green, Jr., made five months after, showed exactly the same normal picture as before the operation.

In conclusion, let me revert to the pessimism now existing in the general medical mind, in reference to surgery of the nervous system. The case just reported is an illustration of the possibilities of neurological diagnosis and neurological surgery, and upon such possibilities our optimism finds a firm foundation. Indeed, in any medical endeavor whatsoever there is no place for the spirit of pessimism and least of all in surgery of the nervous system.

Metropolitan Building.

PNEUMOTHORAX AND POSTURE; THE IMPORTANCE OF THE ABDOMINAL POSTURE IN OPERATIONS ON THE PLEURA AND LUNGS.*

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The danger of the sudden entrance of air into the normal pleural cavity has, more than anything else, impeded the progress of the surgery of the lung and of the other intrathoracic viscera. There are other dangers, such as that of great susceptibility to infection, but the grave symptoms from acute pneumothorax are those that have to be most considered. Much careful experimental and clinical work has been done to overcome and guard against the dangerous respiratory embarrassment which is apt to ensue.

When there are adhesions between the visceral and parietal layers of the pleura, the danger from

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the sudden entrance of air when the chest is opened is a small one. Such adhesions are, fortunately, present in from 50 to 75 per cent. of the cases with inflammatory processes, such as abscess and gangrene of the lung. Unfortunately, however, one is never able to say with certainty in any one case whether or not adhesions are present.

Much work has been done and many methods devised to produce these adhesions. Some have advised the injection of irritating fluids; others have exposed the parietal pleura and cauterized it with zinc chloride, nitrate of silver, iodine, etc., so as to cause a localized inflammatory process; others have sutured the visceral and parietal pleuræ together without opening the pleural cavity. The sutures were soaked in turpentine or other drugs to cause adhesive inflammation. Witzel recommended that the pleural cavity should be filled with fluid before the pleura is incised. Still others have incised and packed the opening at the first sitting. All these methods have been proven to be uncertain, as adhesions may not be formed in spite of their use.

Délagenière was the first to call attention to the fact that after the pleural cavity has been opened, one can often prevent the occurrence of serious symptoms from the sudden collapse of the lung by quickly grasping the lung and drawing it into the wound, fixing it there by a few sutures.

The greatest advance has been made by Sauerbruch and Brauer in Germany; the former has devised a large and complicated cabinet in which the pressure is negative corresponding to the normal intrapleural pressure, the patient's head being outside of the cabinet. The latter has devised an apparatus by which the patient breathes compressed air. By both of these methods the lungs remain distended even when a very large opening is made into the chest. While both methods constitute distinct advances, they have been adopted by only a small number of surgeons on account of the complicated apparatus required and the large expense. The subject requires further study and investigation.

During the past year I have done some experimental work on dogs in the Department of Physiology and Pharmacology of the Rockefeller Institute. I desire, in this place, to make acknowledgment to Dr. S. J. Meltzer for much aid and many suggestions. The results obtained from my experiments I later applied in practice.

Much work has been done on the subject of pneumothorax, and the symptoms which follow the sudden entrance of air into the normal healthy pleura have been studied experimentally in dogs. Most of the animals died from the pneumothorax when a large opening was made. Gluck lost all of the dogs he used; Biondi lost four of five; Block, Marcus, Schmidt, Pourrat and Rodet, Tuffier, Murphy, Quenu and Longet had similar experiences.

In some recent experimental investigations of open pneumothorax I obtained similar results. Many of the dogs either died suddenly as soon as an opening into the pleura was made, or a violent expiratory dyspnea ensued, soon followed by rupture of the mediastinal septum, double pneumothorax, and death. The method of operating on the dogs was the following: The animal was given a hypodermic injection of morphine, and a few hours later was anesthetized with ether; tracheotomy was performed, a cannula inserted, and the administration of ether continued through the cannula. One or more ribs were resected, the intercostal muscles divided, the pleura exposed, and a small opening carefully made in it and gradually enlarged. In a number of the animals the pressure of the inspired and expired air was roughly measured by allowing the animal to breathe into a large bottle, the tube leading to it from the tracheal cannula being connected by means of a T-tube with a water manometer.

If a small opening (1 to 5 mm.) is made in the right or left pleura of a dog which is lying on its back, or on its right or left side, the animal will in most instances continue to breathe well, although the amount of inspired and expired air will be less than (about two-thirds of) the normal. That such an animal is very sensitive to the slightest influence which disturbs the breathing is shown by the fact that if the animal is deeply under the anesthetic, clamping the trachea for part of a minute will bring on the dyspnea; if the dog is not deeply under the anesthetic, the struggling of the animal or irritation of the cornea, mucous membrane of the nose, etc., will bring it on.

While most dogs stand a small opening well, sudden heart stoppage or dyspnea and death will follow in some instances. The larger the opening, however, the more likely is the occurrence of serious interference with respiration. In almost all of the animals in which the size of the opening approached to or exceeded that of the diameter of the trachea, dyspnea and death followed. No matter how slowly and cautiously the opening was made, typical expiratory dyspnea ensued, the heart became irregular and weak, the mediastinal septum bulged into the opening with each violent expiration, and rupture of the septum and double pneumothorax or sudden stoppage of the heart occurred. Nor did it make any difference in what part of the chest the opening was made, whether on the right or left side, near the apex or base of the lung, near the sternum or vertebral column. When, however, the animal was operated upon while lying flat on its belly, very different results were obtained. When the dog is lying on its belly, not only can a small opening be made and the dog continue to breathe like a normal animal, but even a very large opening (2 to 4 cm.) can be made, and breathing go on regularly and quietly, almost if not quite like the normal. Even one-half of one chest wall can be removed and the animal survive. Furthermore, if a dog on its back, with an opening in its chest 1 cm. in diameter and with typical violent dyspnea due to the pneumothorax, is turned on its belly, the breathing will often become regular and quiet again, and the pressure of air breathed in and out will be found to be several times as great as when the animal was on its back. On the other hand, a dog on its belly with a large opening in one pleural cavity and breathing quietly, can be brought into a condition of grave dyspnea and asphyxia by turning it on its back. Sometimes it is even possible to resuscitate an animal that has stopped breathing by thus turning it on its belly.

A dog on its back will sometimes stand a double pneumothorax when the opening in each pleura is a very small one, not more than 1 or 2 mm. in diameter and very slowly made. But with the dog on its belly, an opening almost 1 cm. in diameter can sometimes be made in each pleura, if cautiously done, and the animal will often continue to breathe and survive for hours. The amount of inspired and expired air in such an animal is surely small as compared with the normal, but it is apparently sufficient to keep the animal alive.

The explanation of this great difference between an animal on its belly and one on its back with an open pneumothorax, is not an easy one. The fol-

lowing considerations and experiments are offered as a preliminary contribution to a solution of the problem.

The two pleural cavities are separated by the layers of the anterior and posterior mediastinal septa. Between the two lies the heart. In the dog the posterior seems to be somewhat tougher than the anterior, and somewhat more fixed and tense. With violent respiratory movements, it is the anterior septum which more especially flaps to and fro and bulges when an opening in the pleura has been made, and it is the anterior septum which is so apt to rupture and thus cause double pneumothorax and death of the animal. When the dog is on its back, the heart falls backward and the bulging of the anterior mediastinal septum is made more easy. It is different when the animal is on its belly. The heart falls toward the anterior chest wall and thus supports the anterior septum; hence the flapping of the septum, the interference with the respiration of the lung on the sound side, the bulging on expiration on the open side, cannot so readily occur. The following experiments, which I have repeated several times, are, I think, of importance in this connection.

After several ribs had been resected and before the pleura was opened, with the dog *lying on his back,* the pericardium was attached to the anterior chest wall by a suture, so that the heart was pulled forward. A very large opening could now be made in the pleura, almost as large as when the animal was on its belly, without causing the occurrence of serious symptoms. The moment, however, that the stitch was cut and the heart allowed to drop backward, the typical pneumothorax symptoms appeared. In a second dog, *lying on his belly,* the pericardium was attached to the posterior chest wall by a stitch before the pleura was widely opened. The heart could, therefore, not drop toward the anterior chest wall. When an opening was made in the pleura of this animal, the typical pneumothorax symptoms started. They ceased soon after the stitch was cut and the heart allowed to drop toward the sternum. In this way it was often possible to reverse conditions; to put a dog with an open pneumothorax on its belly into the conditions of one on its back, and *vice versa.*

From the above experiments, the conclusion may be drawn that in dogs, at least, pneumothorax is better borne when the animal is on its belly than when in any other posture. Also a pneumothorax is much better borne when the animal is deeply under the effects of the anesthetic.

These results I then applied in my work on the II Surgical Service (Dr. Lilienthal) at Mt. Sinai Hospital. All of the patients in whom operations were performed which required the opening of the pleura, were operated upon lying flat on the abdomen. Care was taken that the patients were deeply under the anesthetic at the moment when the pleura was opened. Operations on the lateral or posterior aspects of the thorax could be done with ease. The patient was laid flat on the belly with the head turned to one side or supported beyond the end of the operating table so that the anesthesia could be given without trouble. The position did not interfere with the operator or assistants. In this posture I have operated upon a large number of patients with empyema, upon two patients with abscess of the liver, upon three with subphrenic abscess, and upon one with a bronchiectatic cavity in the left lung. In all of the last-named patients the pleura had to be opened. The patients in whom a normal pleura had to be opened showed unusually few untoward symptoms when the opening was made and air was allowed to enter the pleural cavity. In the patients in whom an operation for empyema was done, it was noted that with only one exception the coughing and interference with breathing, regularly observed when the opening in the pleura is made for this affection, was entirely absent.

While these cases are too few to be conclusive, they seem to demonstrate that what is true for dogs is also true in this respect for the human being, and that there are decided advantages in operating upon these patients in the abdominal posture.

I believe that those who try this simple procedure will soon appreciate its manifest advantages. It is a very simple method of safeguarding our patients a little more in our intrathoracic operations, and may be used in conjunction with other methods.

A REPORT OF THIRTY-ONE CASES OF CONGENITAL DISLOCATION OF THE HIP JOINT REDUCED BY MANIPULATION.

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The object of publishing this report is not to present any radical departure from the familiar method of reducing congenital dislocations of the hip-joint by manipulation, but merely to place the work on record.

The ages of the patients varied from two to thirteen years, and, as usual, the greater number were females. Twenty-nine cases were unilateral and two were bilateral. The operation performed was the same as that described by Lorenz, with the exception that, in some instances, the plaster-of-Paris spica was extended below the knee in order to better control the after position of the limb. (Whitman: Orthopedic Surgery.) In three cases weight-traction was used preliminary to the reduction.

Case I. Girl, two years of age, dislocation of left hip, three-fourths of an inch shortening. The reduction was easily accomplished, and a plaster dressing applied, which was worn for four months. The successive spicas were applied at intervals of three months, the limb being lowered each time until it was brought to a normal position at the end of two years. Examination at that time showed limbs of equal length, slight eversion of the foot due to a twist in the neck of the femur, and slight limp. Subsequent examination, one year later, showed some improvement in the eversion of the foot, gait normal, and the joint in an anatomical position.

Case II. Girl, three and one-half years of age, dislocation of the right hip, shortening 1¼ inches. Reduction was accomplished with some difficulty, and, owing to the shallowness of the acetabulum, the replacement was very insecure. At the first change of the plaster spica it was noticed that the head of the bone had slipped forward beneath the anterior inferior spinous process. There was, however, so little shortening that no attempt was made to replace the head within the acetabulum. Spicas were worn for eight months with a final result as follows: One-third inch shortening, very slight limp, and anterior displacement of the head.

Case III. Girl, three years of age, dislocation of both hips, marked lordosis, extremely awkward gait. Reduction was readily accomplished, and the patient was removed from the Maine General Hospital in a few days. The child was of an extremely nervous temperament, and some member of the family re-

moved the spica in a short time. The result was an anterior displacement of both hips, with marked improvement in the gait.

Case IV. Girl, nine years of age, dislocation of the left hip, shortening one inch and three-fourths. Reduction was accomplished with much difficulty, as the patient was well developed. Spicas were worn for eighteen months, with a result as follows: One-third inch shortening, nearly normal gait, and anatomical position of the joint correct. Subsequent examination some four years later showed joint in position with improvement.

Case V. Girl, age eleven, dislocation of the left hip, one and one-half inches shortening. In this patient preliminary extension was employed, and reduction was easily made at first attempt. Plaster spicas were worn for twenty months, with the following results: One-third inch shortening, very slight limp, and head of femur firmly held in the acetabulum.

Case VI. Boy, four and one-half years of age, dislocation of the right hip, shortening three-fourths of an inch. Reduction easily accomplished, but the acetabulum was found to be very shallow, and it was with great difficulty that the joint was held in position while the plaster was applied. The first spica was worn for six months, and, when removed, the head of the bone was found to be again dislocated posteriorly. Another operation was advised and performed with a final result of an anterior dislocation. The gait was so nearly normal, however, that nothing further was attempted.

Case VII. Girl, aged eight years, dislocation of the left hip, shortening one inch, extreme intoeing. Reduction was easy, and joint very secure afterwards. Patient wore spicas for sixteen months with a final result as follows: one-fourth of an inch shortening, normal gait, and joint in correct position.

Case VIII. Girl, eleven years of age, dislocation of the left hip, shortening one and one-fourth inches. Reduction was accomplished with difficulty after repeated attempts, and the joint was very unstable. When the first spica was changed, the joint was found to be dislocated again posteriorly. Another reduction was made, but at the next change of plaster the bone was found anterior to the acetabulum. Nothing further was attempted in this case, as the gait was much improved and the condition of the patient at the time did not warrant another operation.

Case IX. Boy, six years of age, dislocation of the right hip, shortening one inch. The capsule of the joint in this case was extremely lax, and it was possible to replace the head without an anesthetic, but the muscles were so shortened that the limb could not be placed in a favorable position, therefore it was necessary to administer ether. The acetabulum had but little depth, and considerable difficulty was experienced in holding the joint in a normal position while the plaster was applied. Successive spicas were worn for sixteen months, with a marked improvement over the first condition, but the joint was not in an anatomical position. An open operation was repeatedly advised, but refused.

Case X. Girl, aged eighteen months, dislocation of the left hip, shortening three-fourths of an inch. Reduction was easily accomplished and limb placed in plaster. At the end of six months the joint was so firmly fixed in a normal position that the spicas were discontinued. The result was the best obtained in this series of cases. The shortening was less than one-fourth of an inch, and the gait at the end of the first year after operation was normal.

Case XI. Girl, three and one-half years of age, dislocation of the left hip, shortening one inch, marked twist in the neck of the femur. Reduction was made with some difficulty, as the capsule prevented the head from easily entering the socket. Plaster in this case was worn for eighteen months. The result was good, with the head in the correct position. Eversion of the foot was pronounced after the foot was brought to a normal position, but two years later this deformity was much less apparent.

Case XII. Girl, eleven years of age, dislocation of the right hip, shortening one and one-half inches, with considerable deformity of the head. Reduction was accomplished with much difficulty, and the joint was easily displaced upon the slightest motion. Patient was kept in plaster for twenty-two months, with a final result as follows: Shortening one-fourth of an inch, slight eversion of the foot, and joint in an anatomical position.

Case XIII. Girl, aged seven years, dislocation of the right hip, shortening three-fourths of an inch. Reduction was easily accomplished, and the limb placed in plaster, where it was kept for seventeen months. Final result was good: Normal gait, joint in anatomical position, and slight eversion of the foot.

Case XIV. Girl, aged twelve years, bilateral dislocation. Preliminary traction was made for ten days. Reduction was accomplished with difficulty in the right hip, but the best result that could be obtained in the left was an anterior position. The limbs were fixed in plaster for twenty months, with a final result as follows: Normal joint on the right side, and an anterior position on the left. There was shortening of one-half inch in the left limb, which caused a slight limp. The lordosis, which was extreme before the operation, entirely disappeared.

Case XV. Girl, aged eighteen months, dislocation of the left hip, shortening less than one-half inch. Reduction was easily accomplished, and the first spica was removed at the end of the fourth month. The joint was so firmly fixed that it did not seem necessary to apply another. This proved to be a fact, with a final result of a perfectly normal condition. Subsequent examination two years later showed joint in position with both limbs of the same length.

Case XVI. Boy, twelve years of age, dislocation of the right hip, shortening one and one-half inches. An attempt was made to reduce the hip without any preliminary traction, as the child could not remain in this vicinity for any length of time. It was impossible to make a reduction by manipulation, and the cutting operation was refused. The limb was placed in the abducted position and held by a spica with the hope that an anterior displacement would be the final result. He passed from observation, however, and his present condition is unknown through examination, but a recent letter from his parents, which states that his gait is much improved, leads one to believe that the expected result was obtained.

Case XVII. Girl, four years of age, dislocation of the right hip, shortening one-half inch. The acetabulum was well formed and reduction was easily made. Spicas were worn for thirteen months with the following result: Limb normal in length, joint in anatomical position, and gait free from limp.

Case XVIII. Boy, seven years of age, dislocation of the right hip, shortening one inch. The head of the bone was deformed and the neck twisted. Reduction was accomplished without much difficulty. The patient remained in plaster twenty months with the following result: Joint in anatomical position, slight shortening with corresponding limp, and

marked eversion of the foot. An osteotomy was advised to correct the eversion, but was refused.

Case XIX. Girl, two and one-half years of age, dislocation of the left hip, shortening one-half inch. Reduction was easily made, but it was with difficulty maintained. At the first change of plaster it was found that the head had slipped from the acetabulum, and another reduction was made. The patient was kept in plaster for fifteen months, with a final result as follows: Limb the same length as its fellow, joint in normal position, and gait showed no limp.

Case XX. Girl, eight years of age, dislocation of the right hip, shortening one and one-half inches, head of the bone much deformed. Reduction was very difficult, and the stability of the joint not good. At the first change of plaster the head of the bone was found in an anterior position, but it was not considered best to attempt another replacement; so the plaster spicas were continued with the following result: One-half inch shortening, slight limp, and head in the anterior position.

Case XXI. Boy, aged twelve years, dislocation of the right hip, shortening one and three-fourths inches. Preliminary traction could not be obtained in this case; so the reduction was attempted without it, and accomplished with considerable difficulty. There was much bruising of the tissues, and marked discoloration followed the operation. Sloughing did not follow, however, but the joint dislocated again, and another attempt to better the condition was not allowed.

Case XXII. Girl, aged three years, dislocation of the right hip, shortening three-fourths of an inch. Reduction was easily accomplished, but the acetabulum was so shallow that the joint was very insecure. Spicas were worn for fifteen months with the following result: Limbs of equal length, no limp, and joint in the correct position.

Case XXIII. Girl, nine years of age, dislocation of the right hip, shortening one and one-fourth inches. Preliminary traction was used for nine days in this case. Reduction was accomplished with much difficulty, but the joint was exceptionally stable. Spicas were worn for eight months with the following result: Slight shortening of the limb, anatomical position of the joint, and slight limp.

Case XXIV. Girl, aged twenty months, dislocation of the left hip, shortening one-half inch. Reduction was easily made. A spica was worn for four months, and, as the *x*-ray showed the head of the bone well situated, the plaster was discontinued. Massage and passive motion were commenced immediately. An examination one year later showed the limbs of equal length, joint in position, no limp.

Case XXV. Girl, thirteen years of age, dislocation of the right hip, shortening one and one-half inches. Preliminary traction was used in this case for two weeks. Reduction was accomplished with much difficulty, but the joint was very secure. Plaster was worn for eighteen months, with a final result as follows: Joint in correct position, one-third inch shortening, and slight limp.

Case XXVI. Boy, four and one-half years of age, dislocation of the right hip, shortening three-fourths of an inch. Reduction was easily accomplished, but as neither the acetabulum nor the head of the bone were well formed it was very difficult to hold the joint in normal position while plaster was applied. Spicas were worn for twenty months, and the final result was as follows: One-third inch shortening, slight limp, and joint in the correct position.

Case XXVII. Girl, aged ten years, dislocation of the right hip, shortening one and three-fourths inches. Reduction was accomplished with extreme difficulty, and the head of the bone slipped from the acetabulum with the slightest movement toward adduction. At the first change of the plaster it was found that the head was anteriorly displaced. It was not considered advisable to attempt to make another replacement. Subsequent examination showed the following result: One-half inch shortening, slight limp, and joint dislocated anteriorly.

Case XXVIII. Girl, aged six years, dislocation of the left hip, shortening one inch. The *x*-ray showed the acetabulum and the head of the bone to be in nearly normal condition. Reduction was made with great difficulty, but the joint was very stable. Plaster was worn for eighteen months, with a final result as follows: One-fourth inch shortening joint in correct position, normal gait.

Case XXIX. Boy, nine years of age, dislocation of the left hip, shortening one and one-fourth inches. Reduction was accomplished after several attempts and the joint was very stable. Spicas were worn for eighteen months with the following result: Shortening one-third inch, joint in correct position, and slight limp.

Case XXX. Boy, nine months of age, inferior dislocation of the left hip, lengthening one inch. Abduction of fifteen degrees was present and an *x*-ray examination showed the head of the femur in the obturator foramen. A reduction was made, and the head of the bone seemed to be so firmly held in position that a spica was considered unnecessary. The patient returned in a few weeks, and it was found that the dislocation had returned. Another reduction was made and a plaster spica applied, which was worn for six weeks. An examination five months later showed the head in a normal position.

Case XXXI. Girl, two years of age, dislocation of the left hip, shortening one-third inch. Reduction was easily accomplished and the limb placed in plaster. The acetabulum was not well formed in this case, and doubt was expressed at the time of the operation as to the outcome. Subsequent examinations, however, showed the parts in normal relation.

Although the number of these cases is small and definite conclusions cannot be drawn, there are some problems in the operation which have been demonstrated to the satisfaction of those who were engaged in the work.

The only case in which there was even an approach to an accident was No. XXI., and in this later observation showed that the operator was too hasty in removing the spica, thereby allowing the dislocation to occur again.

At what age it is best to attempt reduction is a matter of dispute. The results obtained seem to indicate that it is wise to operate while the patient is young, and that, although a good result may be accomplished after the child is well developed, still greater improvement might have been secured had the child been seen at an earlier age. It seems pretty safe to state that development in a dislocated joint is much retarded, and that after reduction is made the whole limb grows in a normal manner.

Undoubtedly, preliminary traction lessens the amount of force necessary at the time of reduction, and should be employed in all older patients. In the cases reported above, the extreme sensitiveness which has been so often mentioned was not seen. Almost without exception, every patient could be easily handled without pain on the third day after operation; many of them moved about freely at a very early period, and in not one was there any pain after the final removal of the plaster spica.

There is one point in the application of the plaster which seems to be of importance, viz., the necessity of making firm pressure just behind the trochanter major, while the plaster can be easily moulded, as it prevents the head of the bone from slipping backward into its former position. The danger of a recurrence of the dislocation through rotation of the thigh bone can be removed by extending the spica below the knee.

The operator should not be in too much haste in trying to accomplish a reduction, as nothing is gained thereby, while, on the other hand, ill-directed force may be productive of serious results. There has been some severe criticism of the operation on account of the use of so much force; the procedure has been termed brutal and unscientific, and in lieu of it the open operation has been advised. It is hardly necessary to state that in such a serious deformity as congenital dislocation of the hip any method of operation which holds forth the hope of such a brilliant result in a large percentage of cases, as this does, *i.e.* a perfectly normal condition, is not to be discredited too readily, and a method substituted which, at its best, offers only a partial relief.

The use of skiagrams has been found to be misleading, and often a case which seemed to present most favorable features has resulted in failure, while others which looked difficult were not so.

Paralysis has never followed any of the above operations, and it is a complication which has never been seen by me.

Summary of Results.—If the two bilateral dislocations are considered as four unilateral, the results may be summed up as follows: Whole number of hips operated upon, 33; 22, or 66 per cent. normal; nine, or 27 per cent., anterior position; two, or 6 per cent., complete failures.

It is to be noted in analyzing this work that the most of the anterior dislocations and failures occurred in the cases operated upon in the earlier part of the work. The better results obtained in the later cases were probably due to a better understanding of the necessary steps of the operation.

SOURCES OF ERROR IN GASTRIC DIAGNOSIS.*

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Probably no department of Medicine requires more careful observation for diagnostic purposes than does the study of abdominal diseases. In the present obscurity surrounding many questions involved, it very often happens that apparently unimportant details, taken into consideration sufficiently, will clear a situation left in doubt by the simple consideration of classic signs and symptoms. It so happens that the diagnosis of some abdominal conditions has reached a stage of such uncertainty that the intelligent examiner is often loathe to accept as positive the results of chemical analysis and physical examination heretofore judged competent to determine fixed pathological states, and is forced to yield to the dictum of the surgeons that the only method to decide anything abdominal, is to have "a look in."

The reason for this dilemma must be apparent to those who have had occasion to make use of the accepted theories and practices of the past. While in the main some of these will remain standard, how many of us have had our sensibilities shocked and pride shattered by accepting too confidently certain supposedly pathognomonic signs in order to render imperative decisions according to the fixed rules of evidence of experimental law. How often has it happened that some minor and apparently unimportant detail, properly observed and estimated, might have saved the situation even though it seemed to contradict all signs of graver import.

That any fixed standard of symptomatology for abdominal conditions should prove faulty in a good proportion of cases, is not surprising when we consider our present knowledge of the subject. We may have carcinoma of the stomach, even in advanced stages, with any degree of acidity. Even the loss of weight can be deceiving in this same disease. We can have ulcers with hyperchlorhydria or achylia. We encounter numberless catarrhs with the same variation of analytical findings. A perfect history of hyperchlorhydria often accompanies absolute achylia. Physiologically and anatomically normal stomachs at times give rise to the most pronounced dyspeptic symptoms, whereas it very often happens that the pronounced abnormal conditions of the same organ produce no symptoms whatever. How often do remote abdominal abnormalities cause distress in perfectly normal stomachs? Vice versa, how often do pathological conditions in the stomach produce deceptive symptoms in other regions?

To a certain extent abdominal surgery has come to the relief of the situation with its exploratory methods. It is, however, a difficult matter to convince the laity of the harmelssness of this procedure, and it can hardly become popular. Even from a professional standpoint, it often fails in its object, and we are no wiser after than before operation. I once had the temerity to ask a well-known surgeon during such an operation, as to the possibility of an existing ulcer. My presumption was met with some sarcasm, which, with other experiences at the operating table, served to convince me that the ordinary abdominal incision and rubber gloved finger do not always enlighten and often reveal only a suspicious nodule or induration with which information we must be satisfied.

One word here in regard to the actual relief measures of surgery. I refer to gastroenterostomy and allied operations. They are a great help in many cases, provided the results obtained are permanent. This, unfortunately, is not always the case. That relief should follow directly after such an operation is natural, for conditions are changed and the stomach for the time being at least, is, to a certain extent, eliminated from the digestive tract. Excessive acidity diminishes as food stasis is improved. Little by little, however, the organ accommodates itself to the new conditions and resumes its functions with the result that old symptoms begin to reappear, due, in all probability to the original abnormalities of secretion. Much has been written about the influence of these operations upon the gastric secretions. Subacidity and hyperacidity should return to normal. That this may result for a few months after operation is apparent from the reasons given, but that such a result must necessarily be permanent, is a fallacy.

In 1900 I published some observations bearing upon this subject. In a series of cases in which it was possible to make systematic examinations over a period of four to six years after operation, it was demonstrated that the secretions were not materially influenced after the lapse of a certain interval, notwithstanding that a certain relief had been accomplished. This applies as well to purely medical

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cases. We are too prone to believe that because symptoms have been relieved that the actual secretory conditions causing them have disappeared under treatment. On the contrary, it will often be found that these remain the same for years and the relief afforded will continue just so long as general nutrition remains good and an impressionable nervous system is held in check, both generally and locally.

It is a serious business even partially to eliminate from the digestive tract such a protective organ as the stomach. The importance of the selective motor function of the pylorus and the delicate and intricate cooperation of all alimentary secretions for the purpose of complete digestion of all classes of food stuffs, should warn us against thoughtless and indiscriminate operative interference. Aside from immediate surgical complications, such as jejunal ulcer, adhesions, vicious pyloric circles or fictitious hyperperistalsis, due to pyloric elimination, there exists one which is not usually considered, especially by the surgeons. I refer to the difficulty of subsequent medical treatment in those cases where gastroenterostomy has not afforded the expected relief. In such cases the internist has not only lost all moral support, but his usual mechanical and dietetic measures are rendered ineffective by the artificial conditions created by operation.

It is depressing to admit, on the other hand, that after twenty years of research we possess no positive means to determine certain crucial questions in diagnosis without exploratory measures. We may suspect early malignant conditions, but we cannot diagnose them in the stomach. Were the difficulties limited to the early stages alone, one's natural pride might still be saved. Unfortunately, however, this is not the case. Owing to the delicate arrangements of digestion whereby delinquencies of one part of the tract are counteracted by the increased activity of the other, abnormal growths are often well advanced in their development before their presence becomes known, or even suspected. The usual classic signs and symptoms and the most approved diagnostic methods of the books, will fail use in a goodly number of cases. Let us look at a few of the common signs and symptoms.

It is natural to suppose that the first thing to suffer in carcinoma of the stomach would be the general nutrition as revealed in a loss of body weight. Nothing can be more deceptive. The fundus of the organ may be well involved without affecting nutrition, provided the pylorus remains patent. On the other hand, pyloric malignant conditions may develop so rapidly that death takes place from mechanical causes before sufficient time has elapsed for general malnutrition to become marked. Any rapid loss of flesh in the early stages of a suspected case, can have practical significance, in that it is presumptive evidence that the process is so localized as to interfere with gastric and intestinal cooperation, and thus may still be amenable to operation with some hope of relief.

The maintenance of body weight naturally implies a sufficient appetite to stimulate the nutritive intake. This natural craving for food at regular intervals, while generally impaired in malignant conditions of the stomach, may be perfectly normal and at times even increased until the disease is well advanced. It appears that in the early stages, in some cases, where no dyspeptic symptoms are prominent, the appetite may be stimulated by the increased tissue development of abnormal cell proliferation. Of more diagnostic importance than mere loss of appetite, are certain peculiarities of the same. I refer to sudden disinclination to take a particular variety of food notwithstanding it causes no distress. This phenomenon is, apparently, a mental one, and may appear very early in the disease. It is especially true of the proteids. When it occurs in a suspected case, with no neurotic tendency, it is worthy of note, and should act as a warning.

It is generally conceded that loss of strength is of greater diagnostic importance than loss of weight. Both of these signs require some time for their development, and thus are deprived of their value for early diagnosis. It sometimes happens, however, that very early in malignant disease of the stomach, patients give evidence of loss of strength in a subtle way. It is not general weakness, but rather a disinclination to pursue activities which previously had been a pleasure. It is a psychological state rather than a physical one, and is entirely out of proportion to any actual suffering. If this occurs in individuals with normal nervous systems and surroundings, it should be taken into consideration. I refer to a loss of ambition on the part of an individual of middle life, suffering from slight dyspeptic symptoms, not calculated to produce any marked nervous disturbance. It appears to be a subtle psychological influence upon the mental condition of which he has no definite consciousness. In these days of general neurosis, it is evident that such evidence may be easily overlooked or discarded. At the same time, when it occurs under the circumstances mentioned, it may serve as a hint as to the actual state of affairs. It can be of value at a time when all physical and chemical methods are premature, so far as definite results are concerned.

Some such indefinite phenomena occur in almost every case, but are usually discarded because we do not wish to appear visionary. The more we have to deal, however, with abdominal disease, the more we must recognize that each case is analytical and individual and that any hint or detail may not be disregarded. In no class of cases are actual pathological conditions and signs and symptoms so out of proportion and badly related. Under such conditions, apparently unimportant details, properly observed and estimated, will often save the situation.

Most sources of error in gastric diagnosis involve conditions at the pyolrus. The primary question in all cases of obstruction, is that of malignancy, and it very often happens that after all chemical and physical data have been collected in a given case, even in advanced stages, we are obliged to rely upon minor facts of the history in order to reach some sort of a conclusion. The presence or absence of a tumor mass is often a matter of such doubt that little reliance can be placed upon any individual examination. Too much depends upon the tactile erudition and imagination of each examiner,—both very uncertain quantities. Granted, however, that these faculties are fully trained and developed, we have still to reckon with the pylorus itself. Unless this sphincter is absolutely destroyed by new tissue infiltration, it may assume a changeable consistency dependent upon the vigor of manipulation, length and number of examinations, and local irritability. What one examiner may feel as a suspicious hardening may have disappeared by the time of the next manipulation. Hence, the first examiner always has the advantage, and no two examinations should be made in immediate succession. This uncertainty will continue until infiltration is so complete as to render contractions impossible, by which time other symptoms will probably have decided the question. If the pyloric contractions are vigorous and continue into the late

stages of the disease, it is evidence that the sphincter has not been completely involved, for complete infiltration would tend to suppress muscular contraction entirely, whereas a small and hard nodule, acting as a foreign body, would serve to stimulate contractions. Hence, complete infiltrations may be more difficult to detect than incomplete ones, especially if the same be soft in their nature. They have destroyed the power of contraction. At the same time, their own consistency does not betray them.

In this connection, we must consider tenderness to pressure in this region. As a sign of malignancy it is of doubtful value, for the pylorus may be more or less sensitive under normal conditions. If the examination is made under or induces contraction of the sphincter, there is certain to be more or less pain on pressure. Continued pressure may result in relaxation of the muscle and disappearance of the tenderness. In the one case the pylorus may be felt. Two examiners, thus, may secure entirely different impressions according to the actual state of the structure at the moment. Hence, tenderness to be of value must be not only constant, but localized.

Another peculiarity of pyloric tumors is a tendency to induce muscular irritability of the esophageal structures, resulting in spasmodic resistance to the passage of the stomach tube. If, in a given suspicious case, in the earliest stages, this phenomenon occurs, it is worthy of consideration, and has been referred to by earlier writers. It is of value only in cases where neurotic tendencies can be excluded. It is a reflex pure and simple, but under certain conditions may be a hint of value.

Visionary as some of these suggestions may seem, we are obliged to consider them on account of the failure, in many instances, of the hard-and-fast rules of diagnosis of the books. It not infrequently happens that an operator reveals conditions calculated to produce and which have failed to produce the classic signs and symptoms. Of such conditions there are four which occur to me at the present time. These are: small, hard, nodular growths at the pylorus, tubular infiltration of the pylorus, spasmodic reflex contraction, and duodenal obstructions just beyond the pylorus.

We have been taught to believe that in cases of pyloric stenosis, with resulting dilatation, the differential diagnosis between malignancy and benignancy depends largely upon the duration of the disease, all other things being equal. Slow development should signify a benign condition. It sometimes happens, however, that instead of a simple connective tissue contraction we find a small nodule, very hard in consistency, causing a partial obstruction, but sufficient to give all the characteristic symptoms of retention without previous history of ulcer. The duration and development, in these cases, may be very long and hyperchlorhydria, due to overstimulation of retention, may be marked. The dilatation is usually very marked, but benign obstructions of long duration produce this result as a rule. Such a nodule may grow very slowly, and does not produce emaciation necessarily, for its bulk is not great, and there is no absolute obstruction. In such cases, it is almost impossible to avoid error at times.

Another condition which is apt to be confusing is one in which infiltration has resolved the pylorus into a rigid tube with a fairly patent lumen. In these cases there need be no great food retention and no dilatation whatever. On the contrary, the stomach may not only be quite empty, but almost constantly contains bile. This, in itself, can be misleading, for the constant presence of bile is supposed to contraindicate stenosis. All the vomited material will contain bile and be exceedingly bitter to the taste. As the history may be one of some duration and the loss of flesh slight on account of preserved intestinal digestion, the diagnosis may be obscured or rendered impossible. Some suspicion of the actual condition may be aroused by physical examination. In such cases it is sometimes difficult to determine the size and position of the stomach by filling with water or by insufflation, as both air and water escape readily into the intestine. A normal pylorus will close instinctively upon the sudden introduction of either of these elements in any considerable quantity. In the normal state, the stethoscope placed over the pylorus discloses interrupted gurgling or bubbling, whereas in the condition described the sounds are those of constant rushing of air or fluid through the opening. The same phenomena can be noted in pyloric insufficiency, but this condition is so rare, and the general neurosis producing it so pronounced, that no difficulty should arise on this score.

Under ordinary circumstances, the differential diagnosis between gallstone disease and benign pyloric stenosis should not present much difficulty. It sometimes happens, however, that a reflex spasm of the pylorus of such intensity and duration may be induced as to cause doubt as to the proper diagnosis. Test foods can be found in the stomach twenty-four to forty-eight hours after their introduction, and the vomited material may be large. This condition may persist for days after the actual gallstone colic has disappeared. Examined during this period, the physical and chemical findings would indicate pyloric stenosis, and as both benign pyloric conditions and gallstones are of long duration, the differential diagnosis may be difficult. In such doubtful cases it is necessary to persist in the examination of the stomach. If it be found that the food retention and hyperchlorhydria gradually disappear, the diagnosis of gallstones is the most probable one. No dilatation results, in these cases, as the organ returns to normal between the attacks. In this respect, they differ from ordinary recurrent pyloric spasms, due to persistent hyperchlorhydria, and which may eventually result in dilatation.

In certain cases the spasmodic contraction may exist at a point just beyond the common duct. This can occur in gallstone disease or as a reflex from other organs in the immediate vicinity. According to recent investigations there exists at this point of the duodenum a certain thickening of the circular muscular fibers of the intestine which, under reflex stimulation, may cause retention. In such cases the symptoms are those of pyloric obstruction, whereas, in reality, the pylorus may be entirely relaxed. This relaxation may be permanent or temporary. In either contingency the distinctive feature of these cases are absence of gastric dilatation, absence of hyperchlorhydria, and the constant presence of bile in the retained contents. It is difficult to outline the stomach on account of the constant escape of fluid or air into the duodenum. If, however, the history is one of long duration, with symptoms resembling pyloric spasm and copious bilious vomiting without hyperchlorhydria and dilatation or marked emaciation, the possibility of the suspected cause may be entertained. At best, only the closest analysis of details can lead to any sort of a conclusion in such cases. In instances where the attacks are not frequent, the stomach returns to normal between the attacks. This feature is im-

portant in that in connection with absence of general emaciation and dyspeptic symptoms, it differentiates the condition from one of duodenal ulcer.

Among remoter influences which may affect the pylorus and direct attention to it as the seat of some organic lesion, are sudden atmospheric changes, sudden mental irritation, and hysteria.

The first condition occurs in individuals, usually males, of middle life, robust physique, and normal nerve tone. As a rule, there is a gouty diathesis. These patients admit no indiscretions in diet, but attribute their attacks to sudden atmospheric changes. The distinctive feature of these cases consists of sudden seizures of acute pyloric spasm leading to food retention, with all the accompanying symptoms. The gastric acidity is usually high, but there is no evidence of food decomposition to a marked extent. There may or may not be considerable mucus present. These attacks differ from acute gastritis in that they occur with great suddenness and the absence of diffuse tenderness over the fundus. The pain is spasmodic and corresponds to the rhythmical contraction of the pylorus, which may be felt at times as a hard elongated body. There is no dilatation, and the organ returns to normal within a day. If the attacks occur with any frequency, gallstones are usually suspected, and it is only by thorough physical examination during an attack that the real cause may be revealed. The history of previous attacks must be carefully considered.

Emotional disturbances will occasionally cause such marked gastric symptoms as to mislead. They are of interest from a psychological standpoint. They may be controllable or uncontrollable, that is, within or without the individual volition. The first class is represented by conditions of what is ordinarily called "temper." The second class is identified with hysteria. It might be called post-prandial hysteria. Whichever the cause, the result is the same, namely, sudden pyloric spasms, with the usual result.

The first condition can be dismissed with few words. It occurs in young individuals whose mental disposition is such that upon slight provocation they "fly into a rage." This, in turn, induces pyloric spasm and food retention. If this combination occurs frequently, it may lead to some doubt as to the actual gastric condition and cause parental alarm. Examination of the stomach reveals nothing abnormal between the attacks. The difficulty, in these cases, lies not so much in diagnosis as in treatment. They submit to examination unwillingly, and their whole disposition is antagonistic. It almost seems that they do not desire relief, and the summoned physician becomes their enemy. It appears to be a morbid satisfaction to them to inflict their suffering upon others, and treatment is well-nigh useless. The latter resolves itself into a question of moral suasion, family influence, or parental firmness.

In post-prandial hysteria we have an emotional condition reflecting upon the pylorus, which is somewhat out of the ordinary. In these cases, instead of the usual exaggerated post-prandial lethargy and torpor of the ordinary neurasthenics, we have general mental excitation and alarm and physical restlessness. There may be palpitation, poststernal oppression, and other nervous symptoms, but these are not distinctive. The principal feature is the hysterical seizure and mental attitude of the individual. The attack occurs immediately the meal is finished, that is, before any digestive disturbance is possible. It occurs further only after a certain meal and at a certain time of day. It affects both gastric sphincters so that the stomach becomes a closed sac. When the cardiac orifice relaxes, eructations and vomiting occur. This may or may not bring relief. Gastric analysis and physical examination of the stomach give normal findings. The local discomfort of these patients is due to tonic contraction of the sphincters. If this is most pronounced in the pyloric region, it may lead to doubt as to actual condition of this orifice, especially if the attacks occur with more or less regularity, and exploration with the gastric tube reveals the cardiac end of the stomach to be normal. The guiding feature in these cases should be the peculiar mental condition following immediately after certain meals at a given period of the day.

Two conditions in the immediate vicinity of the pylorus may cause doubt as to its normality. One of these is distention of the hepatic flexure of the colon. As a result of mechanical causes due to position, antiperistalsis in the ascending colon, etc., this flexure is more or less distended normally. Should this become excessive for any reason, it may cause discomfort amounting at times to painful spasms either in the regions of the appendix or pylorus. In nervous individuals attention is at once directed to the appendix on account of the prevailing fear of this affliction. In the physical examination of such a case, the high distention may direct attention to the pylorus, and at times it is difficult to determine the size of stomach by ordinary methods, especially if there be considerable distention of the transverse colon at the same time. If, as it sometimes happens, hyperchlorhydria and atony of the stomach are also present, the situation becomes still more complicated. As these cases are usually very insidious in their onset and of long duration, it is advisable before making a physical exploration of the stomach to thoroughly relieve the colon by high oil rectal injection, repeated over a period of several days, if necessary.

It seems hardly necessary to refer to prolapsed right kidney as the cause of pyloric spasm and gastric symptoms, and yet, in its early stages this cause can easily be overlooked. If both kidney and stomach have prolapsed to a pronounced extent, symptoms of spasmodic retention are not so likely. The organs accommodate themselves to the new conditions. The greatest tension of a prolapsing kidney occurs in the very early stages, before the ligaments have become thoroughly relaxed. At this time the tension is more or less constant, and is not relieved by varying bodily position. Reflex influence upon other abdominal organs at this time is greatest, and as the movable kidney is easily overlooked, false conceptions may result. If the reflex is directed to the pylorus, in such a case, repeated attacks of pyloric spasm may result and, as the primary condition is a slow one, the constant recurrence of these attacks will lead to permanent changes in the stomach. In the course of time, as the ligaments of both stomach and kidney become more and more relaxed, the acute attacks cease of their own accord, and give place to the typical train of symptoms of gastroptosis. Ordinary treatment in the early stages is useless. Operation upon such a kidney will at once relieve at this time. Both patients and surgeons, however, take unkindly to this radical procedure at this early stage, and these unfortunates are doomed to suffer until Nature comes to the relief of their acute symptoms through absolute relaxation of the suspending structures, thus insuring at the same time some hope of help from a supporting bandage.

To what extent a reflex from a slightly loose

right kidney may deceive, is illustrated by two cases which have come under my observation. In both cases there were marked evidences of pyloric spasm, with food retention and hyperchlorhydria. In both cases masses the size of a goose egg were discovered located midway between umbilicus and ensiform cartilage. These were tender to pressure. These conditions had existed for months. There was no gastric dilatation or displacement. The abdominal walls were tense, so that no kidney displacement could be discovered upon ordinary physical examination. There was considerable loss of weight and strength, due to repeated attacks and enforced curtailment of nutrition. Both cases were those of very young neurotic women. Gastric ulcer was suspected, but no cardinal signs of this affection were present. The tumor masses were puzzling and permanent. Exploratory operations were decided upon, and the young women placed under ether. Under the anesthetic the epigastric tumors disappeared. Nothing could be felt at the pylorus, but careful examination revealed the right kidney, in each case, to be slightly loose. The real nature of these cases was suspected, and the kidneys were placed in position by the usual operation. Both cases made good recoveries, and have been free from symptoms ever since. In these cases we had primary nephroptosis and secondary reflex pyloric spasm. As the latter became more constant, the abdominal muscles contracted as a relief measure, and this finally resulted in phantom tumors.

It would hardly seem possible at this late day to evince much interest in two very common conditions of the body of the stomach, such as atony and catarrh. They are easily diagnosed, and have been thoroughly investigated. Being easily diagnosed, however, may lead to their being too frequently diagnosed, and in this lies the danger.

In the case of atony, we have been in the habit of relying upon Leube's seven-hour fasting test, and according to this method it has developed that fully fifty per cent. of all chronic gastric conditions contain the element of atony. Reliable as this test is there still lurks in it some possibilities for error. These consist chiefly in errors of judgment as to the quantity of residual food which would warrant a diagnosis, and the frequency of its occurrence. As to the quantiy of residual food present, I have found that it is common practice to pronounce certain cases atonic when the lavage fluid, seven hours after a Leube test, contains only a few flocculi or is simply turbid. This procedure may constitute error, for small quantities of food may easily adhere to the gastric mucosa, even where there exists a condition of hypermotility. It is almost constant in cases where there is a catarrhal condition. Now catarrh and atony are not only not usually associated but, on the contrary, catarrhal stomachs empty themselves as a rule most readily. It is this feature of a catarrh of stomach which makes it possible for this condition to exist for years without producing distressing symptoms, and the maintenance of good and often excessive appetite. Lavage, however, will almost always reveal a small suspended quantity of food in these cases. Hence, it is unreliable to depend entirely upon this procedure. If a stomach is really atonic, it will contain a decided quantity of food at the end of the time limit. This can be extracted by ordinary suction without lavage. It is important to observe the proper time-limit for this examination, for it is a popular fallacy that a normal stomach must empty itself completely in the short interval between meals as ordinarily taken at the present day. A hearty eater may have food in his stomach at all hours of the day, and still be apparently normal.

Quite as important as the presence of food after the Leube test, is the constancy of its presence and the nature of the food administered. Just as in the determination of the secreting capability of the stomach, it is necessary to analyze the gastric contents after various meals, under varying conditions, so in determining the presence of atony, repeated examinations are obligatory. The occasional presence of a small quantity of food is no proper evidence upon which to base a diagnosis. A true atonic stomach always contains food in a certain state of decomposition at the end of seven hours. The occasional presence of food may only indicate a temporary weakness or rather sluggishness on the part of the muscular structures, for in these days of general neurasthenia the activity of both voluntary and involuntary muscles depends largely upon the state of the nervous system at the time. Examine a neurasthenic on his days of general mental and physical depression, and you are more than apt to find residual food in the stomach at a time when it should be empty normally. This may be purely temporary, and does not constitute atony as we understand it. More than likely this same stomach will empty itself too rapidly during periods of general nervous excitation. In doubtful cases it is, therefore, necessary to make repeated tests. It is superfluous to caution against accepting as evidence of atony the presence of vegetable fibers, seeds, etc., These substances will remain in perfctly normal stomachs hours after all digestible foods have disappeared. If the test meal be given as breakfast in the morning, for instance, and include an orange, the pulp of that fruit will be found long after all the other substances have passed on. Substances absolutely indigestible for the whole alimentary tract, if present in any bulky form, are apt to be retarded by the pylorus in its capacity of selection. In other words, a normal test-meal should contain only foods which have the right to pass out of the stomach within a certain prescribed time.

What constitutes a chronic catarrh of the stomach? Formerly everything connected with the stomach was catarrh. Experience has taught us to limit the diagnosis, however. It is no such simple matter to properly estimate this condition. The mere presence of a small quantity of mucus is not sufficient to confirm the diagnosis. This may normally be present in any stomach. Certain other factors must be taken into consideration. If mucus is found in a stomach, these would be principally the age of the individual, the kind of test administered, and the effect of nervous influences.

The age of the individual is important, because a certain quantity of mucus can always be found in cases of very old or very young persons. This mucus may have no special significance, at least, may not constitute a catarrh, in the strict sense of the term. For the latter there must be a causative basis and corresponding history. In the very young a certain quantity of mucus is rather an expression of cellular activity common to this period of life. It disappears as the years advance. In persons of advanced age, mucus results from the degenerative changes to be expected at this time, and may not be an evidence of disease. In middle life the presence of mucus, in any considerable quantity, must arouse suspicion. Even here, however, there are chances for error, not so much in estimating the mucus itself, but in the methods employed. It frequently happens that a simple test breakfast of tea and roll produces no mucus, whereas, if meat be added to

the test, the gastric contents will appear viscid and stringy, adhering to the sides of tube and vessel in the manner of true mucus. This may be deceptive, for a test meal containing meat, especially if the latter holds much connective tissue, can take on this character as a result of the action of the hydrochloric upon the fibrous elements. In reality, we have nothing but dissolved or swollen connective tissue. Hence, in examining for catarrh, it is better to employ only the simple test. In doubtful cases, a simple chemical test may be employed as follows: five cubic centimeters of filtered gastric contents are thoroughly shaken with five cubic centimeters of a 5 per cent. alcoholic solution of bichloride of mercury and ten drops of Erhlich triacid stain. All mucus and proteids are precipitated. Filter and wash the precipitate on the filter thoroughly with water. If the precipitate is composed of much mucus, it will remain a dark green; if it is composed of acid albumin it will be red or purple. This latter dissolves readily in 25 per cent. acetic acid, whereas the mucus combination is insoluble. This simple procedure is a modification of a similar von Noorden test for mucus in the stools.

An interesting question in connection with gastric mucus secretion is the effect of nervous influences upon the same. The idea seems rather remote; at the same time there apparently exist certain relations between nervous conditions and gastric mucous secretion which cannot be ignored, especially as we have ample example of this relation in other regions. The question of the nervous origin of mucous colitis is not settled, and we know that acute coryzas may result momentarily from nervous influences. I have on various occasions found the stomachs of neurasthenics filled with mucus under the impulse of sudden emotional disturbance, whereas, ordinarily, these same stomachs were free from this substance. Such rapid accumulation leads to nausea and vomiting and, at times, to severe gastric pains. There can be no question of acute gastritis, for evidences of inflammation are entirely absent and the causes are apparent in the nervous origin. Such stomachs may be perfectly normal in the interim, and represent cases of what might be called "acute neurotic mucous gastralgia." The diagnosis of these cases depends upon repeated observations over an extended period of time. A single examination can and must, necessarily, mislead.

My only excuse for offering the apparently unimportant details of this paper is that, in the mad rush for novelty and reputation, it can do no harm to occasionally pause for a survey and correct understanding of what has been accomplished in the past.

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PREVENTION AND TREATMENT OF CYSTITIS.*

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Etiology.—Cystitis is always due to infection with bacteria. There are many forms of congestion, hyperemia, and edema of portions of the bladder which are not due to infection, and which resemble very closely true cystitis, but at the same time they can not be considered as typical forms of inflammation although they frequently end in cystitis. The ingestion of irritating drugs, exposure to cold, extensive burns of the body, traumatisms, highly acid urine, oxaluria, and retention of urine may cause congestion and hyperemia, but unless bacteria gain entrance and attack the mucous membrane, true cystitis does not develop. These congestions and traumata may be present without symptoms. By the use of the cystoscope, in cases in which extensive hysterectomies have been done, we almost always find congestion of the base of the bladder, and frequently numerous areas of ecchymosis. Where extensive cystocele exists, patients often suffer from pain, retention, and frequency of urination due to hyperemia and edema of the trigonum, and yet no cystitis exists. Such cases are mistaken for cystitis and treated as such without any result.

Gouley tells us that cystitis may be due to "deviations in the quantity or quality of the urine," and "to the stagnation and fermentation of the urine." It is true that the first may be an underlying cause and retention may predispose, but the cystitis does not develop until the bacteria gain entrance, changing the urea to ammonium carbonate which, in turn, irritates the bladder mucous membrane and prepares it for the invasion of the bacteria. The presence of the bacteria alone is insufficient in the normal bladder to cause an inflammatory reaction, and as long as the mucous membrane or the tissues of the bladder wall are uninjured, cystitis is not likely to develop. Wreden (quoted by McWilliams, Medical Record, July 7, 1906) demonstrated that on traumatizing the rectum and injecting colon bacilli into it, the bacteria could be recovered from the urine in the bladder; also that oil and vaseline may be transmitted directly from the rectum into the bladder. Seventy per cent. of the cases of cystitis, according to the consensus of many observers, are due to the colon bacillus. The wonder is that so many cases escape infection.

Almost invariably instrumentation of the bladder causes some slight abrasion; cystoscopic examination after sounding for stone shows numerous abrasions of the mucous membrane; and even the introduction of a soft catheter is damaging to the trigonum.

For the object of our study it is not necessary to review the various predisposing causes of cystitis, most of them are well known; it is important to remember, however, that instrumentation and retention of urine are the two most frequent predisposing factors. Tuberculous inflammation occupies a separate chapter.

Cystitis which follows abdominal section in pelvic operations should be noted. It occurs, according to Taussig, in 60 per cent. of the cases after the radical operation for cancer; it is in direct proportion to the amount of injury to the bladder itself, its blood-supply, or nerve-supply. Retention of urine usually follows the operation, the resistance of the patient is greatly lowered, and many patients have to be catheterized for a prolonged period; the inflammation rarely develops after a few catheterisms, provided the proper aseptic precautions be observed, but after five or six days in the cases where there has been some trauma to the bladder, the inflammation frequently occurs.

Pathology.—Clinically, cystitis may be classified according to location and distribution of the lesion, as: 1. *Localized cystitis,* in which only a limited area of the bladder is involved; generally the trigonum and base of the bladder. 2. *Diffuse cystitis,* involving the entire mucosa of the bladder. 3.

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Patchy cystitis, where the areas of inflammation are scattered irregularly over the mucosa.

Etiologically, cystitis may be classified as: 1. *Traumatic cystitis,* due to infection following trauma. 2. *Cystitis* due to *extension* of *infections* from other organs. 3. *Obstructive cystitis,* following stricture of the urethra, hypertrophy of the prostate, cystocele, and paralysis of the bladder. 4. *Neoplastic cystitis* (Casper), due to the pressure of new growths and infection. 5. *Tuberculous cystitis.*

The first classification is the outgrowth of the modern methods of examination. We have found by repeated cystoscopic examinations that in many cases the inflammation is a limited one, and this emphasizes the necessity of a more thorough knowledge of the lesion before treatment is undertaken. In the *localized* and *patchy* cystitis there is frequently more healthy bladder mucosa than there is inflamed mucosa, and Kelly has pointed out that strong solutions, if used in these cases, would injure the healthy membrane.

The second classification is equally important, since it directs our attention to the underlying cause of the disease, which must be removed before recovery is possible.

The most frequent site for the development of acute cystitis is the trigonum and base of the bladder; this region is naturally the first attacked because it is the most dependent portion of the viscus; its mucous membrane is continuous with that lining the urethra and the ureters, and is most frequently injured by catheterism. The rich capillary supply of the trigonum makes the hyperemia more pronounced at this point.

In the cases of cystitis in which there is obstruction to the flow of urine, such as hypertrophy of the prostate and stricture of the urethra, the muscular bands of the bladder hypertrophy and are seen on the inner surface of the bladder as innumerable trabeculæ which by their interlacings form pockets of varying depths, and when this type of bladder becomes infected it constitutes a most intractable form of the disease. At times those trabeculæ dilate and form diverticula or pouches, which increases the difficulty.

As the inflammation advances destruction of tissue may occur, abscesses form, break down, and leave unhealthy ulcers.

Diagnosis.—Many cases come to us with a diagnosis of chronic cystitis having resisted all forms of treatment, with varying periods of improvement but with constant relapses. The reason for the failure in many of these cases is an insufficient knowledge of the predisposing factors. Unless the source of the infection be discovered and removed, local treatment will be unavailing.

The steps necessary to establish a diagnosis of cystitis include (1) the history of the illness; (2) the examination of the patient; (3) the examination of the urine; and (4) an examination of the mucous membrane of the bladder by the aid of the cystoscope.

Hyperemia of the trigonum, as described by Kelly of Baltimore, is a condition which is often mistaken for cystitis. The trigone is deeply congested, a rosy red in color, extending to and often involving the ureteral openings; the mucous membrane is swollen and there is a varying degree of edema which can be easily appreciated by vaginal examination. The symptoms are characteristic; there is frequent desire to empty the bladder, sometimes present both day and night; the patient complains of burning sensations and pressure or bearing down at the neck of the bladder; the passage of urine is accompanied by some pain, but the greatest distress is present after voiding the water, the sense of weight and pressure remaining for some time. When, in addition, the urine is concentrated or highly acid, the suffering is greatly increased, and urgency of micturition may be present every few minutes.

Most of the cases of "irritable bladder," "neuralgia of the bladder," etc., come under this head.

The diagnosis is easily cleared up by direct inspection of the bladder. The trigonum is intensely congested, sensitive, and in some cases the swelling of the mucous membrane is very marked.

The treatment must be directed to the cause, if possible. Rest, diluents, flaxseed tea, citrate of potash, etc., are indicated. It is necessary to emphasize the importance of an exact diagnosis before undertaking the treatment of any case.

Prevention.—It has already been stated that cystitis is apt to develop in those cases in which there is marked obstruction to the efflux of the urine. The prevention here depends on our ability to remove the cause; strictures should be dilated, and the hypertrophied prostate removed; acute retention of the urine from whatever cause must be guarded against; calculi and tumors of the bladder must receive their appropriate treatment. Gonorrhea is a prolific source of infection and great care should always be exercised in giving urethral injections for its cure, particularly in the early stages.

In employing catheterism the most careful asepsis should be used in the preparation of the patient, instruments, and the operator's hands. In introducing the catheter great care must be taken to prevent injury of the urethra and of the base of the bladder. In removing urine from the bladder, the urine should be allowed to escape slowly in order to avoid the violent embrace of the tip of the catheter by the bladder wall. Following catheterism, it is well to instill a few drops of a 1-in-1,000 solution of silver nitrate on the trigonum and throughout the urethra, and to administer by mouth one of the milder urinary antiseptics.

The prevention of postoperative cystitis is a most important question in our hospitals; this is especially true of the gynecological cases where the bladder has been subjected to any traumatism. Our practice during the past two years in these cases has been as follows: During the operation care is taken not to inflict traumatism on the bladder; after the operation, when it is necessary to catheterize a patient, a No. 16 French catheter is introduced into the bladder and the urine is allowed to escape slowly; 4 or 5 ounces of boric acid are then injected into the bladder and allowed to escape. If it does not distress the patient too much, a second injection of 8 ounces of boric acid solution is made in order to remove, if possible, any bacteria or foreign bodies which may have been forced into the bladder by the introduction of the catheter. Personally, I find it better to use a large syringe for the injection, partially on account of the ease with which it may be sterilized, and also because the force of the injection may be entirely controlled by the hand of the one giving the injection; the ordinary douche-bag may be used, but it is not so safe. At the same time, doses of urotropin are given by the mouth.

In cases of repair of the cervix and perineum, the patient is allowed to urinate immediately after the operation, if possible; the perineum, if it has been sutured, being protected by a bit of gauze or sterilized rubber tissue. Following out this method,

we have almost eliminated postoperative cystitis from our wards. One case, a man, during his first two weeks in the hospital, was catheterized thirty-nine times by actual count, and this catheterism was continued for two weeks longer without the development of any cystitis. Many cases may be rescued from catheterism if sufficient time and patience are used in inducing the patients to empty the bladder voluntarily; in almost all postpartum cases the women can be induced to urinate if they are raised up in bed and allowed for a few minutes to assume the sitting posture. Many patients who have been operated upon, also, can be postured so that they are able to avoid the catheter. The use of a warm enema, hot moist cloths over the pubis, or the pouring of water from a container into another receptacle, will often aid their efforts.

The dangers of postoperative cystitis can not be too strongly emphasized; we are constantly seeing patients who have been operated upon and who have left the hospital cured, but owing to a lack of precaution in catheterism a persistent cystitis has remained which had never been suspected, or even reported to the attending physician.

Treatment.—In the treatment of all cases, the removal of the underlying cause is of primary importance; we cannot expect to have a permanent recovery from cystitis if the urethra still remains infected, if the kidney is still the site of pyelitis, if the enlarged prostate still obstructs the efflux of the urine. In the acute cases, from whatever cause, bladder irrigation is contraindicated except in the declining stage of a gonorrheal cystitis. Rest in bed, with the hips elevated, will often give considerable relief from the strangury and the constant desire to urinate; by elevating the hips the water which accumulates in the bladder flows away from the trigonum, which is the most congested and acutely sensitive portion of the bladder. Opium and belladonna may be given in suppositories to control the pain. Heat to the perineum and above the pubis, and hot sitz baths, will greatly relieve the tenesmus, and to some extent lessen the congestion of the bladder mucous membrane. Diluent drinks should be freely given; if the urine is highly acid, mixtures containing potassium citrate and hyoscyamus will render the urine less irritating; hot rectal enemata are also indicated. Since the introduction of urotropin (and allied drugs) there has been considerable discussion as to its usefulness; when administered by the mouth, urotropin is broken up into ammonia and formaldehyde gas, which latter is liberated as such in the urine. Dudgeon (*Lancet*, June 20, 1906, page 159) claims that this drug can not be given in large enough doses to have any marked antiseptic effect in the bladder, but the clinical evidence does not substantiate his objections. However, in our enthusiasm over a drug which has helped in some cases, the tendency is often to forget the agents which were formerly used, and which materially aid in the treatment of these cases; infusion of linseed, buchu, and triticum repens are often of value in acute cases. In the subacute stage, the oil of sandalwood, cubebs, and copaiba are most useful, but should not be employed for more than a few days at a time. In many cases, salol in doses of from ½ to 1 dram a day is more effective than urotropin.

In chronic cases, the treatment may be divided into the nonoperative and the operative treatment.

Some patients may be benefited by the use of drugs, rest in bed, and regulation of the diet, but in most cases, regular catheterism, irrigation of the bladder, and the use of some of the silver salts or of iodoform emulsion are called for. In the gonorrheal cases, oil of sandalwood or oil of copaiba, combined with salol, and given in capsules, is of great benefit.

The object of washing out the bladder is primarily to cleanse the mucous membrane, and to remove the bacteria, mucus and other detritus which are present in the bladder and are constantly irritating its mucous surface; in order to accomplish this, warm sterile water is sufficient. It is not always necessary to introduce the catheter in order to irrigate the bladder, but in order to do it thoroughly it is best to use a catheter of large size, or an evacuating silver catheter; as soon as the liquid returns clear, the irrigation may be stopped.

Solutions of silver nitrate (½ of 1 per cent.), argyrol (20 to 50 per cent.), and iodoform emulsion have been found most useful. The method of using these solutions is as follows: After irrigating the bladder until the liquid returns clear, 2 ounces of ½ per cent. solution of silver nitrate is injected into the bladder and the catheter removed; the patient is to retain this solution for twenty minutes, if possible, and then pass it voluntarily. The argyrol and iodoform emulsion are used in smaller amounts, but in the same way. The instillations may be repeated every two or three days.

Direct application is by far the most efficient method of dealing with chronic cystitis. It is not applicable in the male, but can be done in the female with the patient in the knee-chest posture, and through a vesical speculum. The application is made with the mucous membrane in plain sight; for this, stronger solutions of silver nitrate may be used, and where ulcers are present they may be cauterized by the silver stick, or, if preferable, by carbolic acid or the actual cautery.

Surgical Treatment.—Some cases of chronic cystitis resist all of the ordinary methods of treatment; the patients are worn out by their suffering and are willing to subject themselves to any form of treatment that promises relief. In the case of cystocele and prolapse of the uterus, surgical intervention with the correction of these deformities will lay the foundation for the relief of the existing inflammation of the bladder. In cases of contracted bladder with thickened walls and an old chronic cystitis, the establishment of a vesicovaginal fistula will result in recovery after all other methods have failed. In the male, suprapubic cystotomy or perineal section is indicated; when the bladder is opened the mucous membrane is thoroughly cleansed, ulcerated surfaces are treated, and if necessary the whole bladder may be curetted. It is not sufficient simply to drain the bladder, but it must be subjected to daily irrigations and, if necessary, topical treatment. After the course of a few weeks, the cystitis subsides; as a rule, the fistulæ close, but sometimes secondary operations are necessary.

In reviewing the entire subject, the necessity should be emphasized for exact diagnosis and appreciation of the exact pathological condition. In the acute cases, catheterism is contraindicated; in the chronic cases, as a rule, a direct examination of the bladder mucous membrane is most important; in those cases which resist all treatment, the existence of tuberculous cystitis must be suspected, and to determine this the safest method is the injection of 10 c.c. of the urine into a guinea-pig.

Castor Oil.—Cracked ice held in the mouth before taking castor oil chills the tongue and prevents any disagreeable after-taste.—*Nurses' Journal of Pacific Coast.*

MEDICAL RECORD.

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THE INCREASE OF THE ARMY MEDICAL DEPARTMENT.

THE nation is to be congratulated upon the passage of the law increasing the efficiency of the Army Medical Department—the first step in the direction of preventing the repetition of the camp scandals of the Spanish War. The bill as originally drawn was quite modest, but it was side-tracked in favor of the Ordnance Department, and again the Artillery, and then, instead of being increased still further to provide for these two increases in the army, it was cut down below the original. Nevertheless, half a loaf is better than none, and the readjustment of grades will make promotion reasonable in the future. The medical officer becomes a captain in three years instead of five as formerly, and those who enter the army in the next few years will attain the rank of major in a comparatively short time, as they have only one hundred files to make. After the lower grades are filled to their new limit of three hundred, it will, of course, take longer to reach that rank, though even then the promotion will be fairly rapid. As the pay of all officers has been increased by another bill, the young doctor entering the service will now get $2,000 upon appointment, $2,400 as a captain, $3,000 as a major, $3,500 as a lieutenant-colonel, $4,000 as a colonel, with 10 per cent. increase for each five years' service up to twenty years, though the maximum pay of majors is limited to $4,000, lieutenant-colonels $4,500, and colonels $5,000. This is not unattractive in view of the fact that a house, light, and fuel are supplied to all, and horses when needed by captains and lieutenants, and that there is a retired pay of 75 per cent. if disabled. Though it is far less than what is received by men of equal ability who are the leaders of the civil profession, it is more than the income of 80 or 90 per cent. of general practitioners.

There was formerly no chance for many of the juniors to attain the rank of lieutenant-colonel, and a few could not become majors before retirement. In spite of that fact Congressman Mann stated in the House that certain line officers had told him that the bill was unjust to them, as it gave medical officers too rapid promotion! It is now quite evident where the public can place the blame for opposition which has caused the long delay in increasing army efficiency.

The new bill creates a Medical Corps, which, with the Medical Reserve Corps, the Hospital Corps, Nurse Corps, and Dental Surgeons, constitutes the Medical Department. All the old absurd titles are abolished, and the medical officers are legally given the titles of their rank like other officers. The change has been advocated for a half century, but has always been opposed by those uxorious line officers who never went to war, but who believed that the army doctor's chief duty was to relieve colic among the babies of army posts—a duty not requiring rank. Congress has wisely ignored these unprogressives because it has at last realized that in his main duties of preventing disease, managing hospitals and the Hospital Corps, and the thousand and one things inseparable from what is called "Military Medicine," rank is an essential without which a medical man's opinion on army matters is not given the slightest weight.

The increases are spread over several years, as it would be clearly impossible to obtain so many men in one year, particularly as the present high standard will be maintained, but after all the vacancies are filled there will still be need of more men, as 444 medical officers cannot possibly suffice for an army of 100,000—but that increase is for future Congresses.

The Medical Reserve Corps is to be filled by commissioned first lieutenants, who will be paid only when in service, and it is hoped that they will form a nucleus in civil life for a large body of specialists for professional work in hospitals in time of war—providing they do not all get the notion that their proper place is chief surgeon of an army corps, and then use political influence to obtain commissions to do work for which they are not competent, as too many men without experience, and even nonpractitioners, did in 1898. In war the future professional military medical officer will be engaged wholly in executive and sanitary work, and the hospitals will naturally fall to those hastily called from civil life.

It was absolutely impossible to make any change in the law regulating the medical officer's authority. That must come in time, for the only law of this sort at present in the revised statutes requires the medical officer to attend to the families of married officers and soldiers when his military duties permit, and nowhere does it describe those duties. In addition there is no provision for giving medical officers more complete control over the management, discipline, and inspection of hospitals, which are occasionally dreadfully handicapped by the interference of line officers ignorant of the needs. Nor has any change been made which will visit punishment upon medical or line officers who allow disease to kill more than the enemy. But public opinion will compel such changes in time even if line officers object. A good beginning has been made, although other nations have gone much further.

THE QUESTION OF ANESTHETICS.

THE medical profession of Great Britain, judging from reports which have appeared recently in medical journals, seems to be somewhat profoundly stirred by the large number of deaths which have occurred within recent years as the result of the administration of anesthetics. From an article by Dr. F. J. Waldo in the *Medical Press and Circular* of March 18 we learn that the annual reports of the

Registrar-General for England and Wales for the five years, 1902-6, give the number of deaths under surgical anesthesia as 148, 146, 154, 155, and 183 respectively; but Dr. Waldo says that these figures are much below the actual number, as only a small proportion of the deaths under anesthesia ever come to the notice of coroners or registrars. During this same period there were several deaths from this cause in Guy's Hospital, and some of the more sensational lay journals have seized upon the opportunity to write up the cases in a lurid way. To some extent, however, it seems that there have been grounds for their declamatory articles, for although the accounts given have undoubtedly been grossly exaggerated, more cases of fatal results from the employment of anesthetics have happened than might have been reasonably expected. In fact, there would appear to be small room for doubt that some of the deaths might have been avoided.

For many years vehement discussions have been carried on at intervals with regard to the comparative merits of chloroform and ether in the production of surgical anesthesia. Of course the matter has not been settled, and the advocates of chloroform and of ether, respectively, are as eager to uphold the virtues of their particular choice as ever. Into this question it is not proposed to enter here, nor is there the space to dwell upon the methods of administration. Still, it may be said that the open mode of employing anesthetics seems to be gaining favor in Great Britain. A meeting of considerable interest in connection with the matter of anesthetization was held by the Medico-Legal Society of London, on March 24, at which many prominent lawyers and medical men were present. The meeting was called to discuss a paper read at a former meeting by Dr. L. Freyberger, and was notable for the reason that Dr. Frederic Hewitt, almost the best known anesthetist in Great Britain, expressed it as his opinion that the majority of deaths from or under anesthesia were preventable, and if death took place it was, as a rule, not the patient or the operator who was at fault, but the anesthetist. His argument, in short, was that in all cases in which an anesthetic is administered, it should be administered by a man who has been thoroughly trained in the work, and not, as is too frequently the case, by dentists or by practitioners who have had no previous proper training in the administration of anesthetics. Dr. Hewitt suggested that the two following motions be forwarded in the name of the British Medico-Legal Society to the General Medical Council and to the Privy Council respectively: (1) That in view of the importance of the administration of anesthetics the society is of opinion that it is highly desirable in the public interest, that every member of the medical profession before he is registered shall have received instruction in the administration of anesthetics. It, therefore, earnestly begs the General Medical Council to consider whether they can see their way to include a course of instruction in anesthetics among the requirements in regard to professional education. (2) That as the administration of any drug or drugs with the object of producing generalized insensibility to pain or actual unconsciousness for any medical or surgical operation, or during childbirth, cannot be safely undertaken without medical knowledge and skill, it would be desirable that the administration of any drug or drugs with either of the aforesaid objects by any person other than a duly registered medical practioner or some one acting immediately under his supervision, direction, and instruction, be made a penal offense. Both of these propositions were carried at the meeting. Among the reforms suggested by Dr. Waldo, in the article above referred to, were that a complete record be kept of the details of every case of the administration of anesthetics, that the coroner be notified of all deaths occurring at any stage of general anesthesia, and that coroners be required to hold a public inquiry in every case of death during anesthesia.

In Great Britain it appears that any person, whether qualified or unqualified, experienced or inexperienced, reputable or disreputable, may administer an anesthetic, and provided that he does this to the best of his ability and with no unlawful motive he is not likely to be punished or even blamed if his patient dies as the result of the anesthetic given. In this country also, the law generally as regards the giving of anesthetics is decidedly lax. It may be stated with little fear of contradiction that the average physician in the city or the general practitioner in the country has not had the amount of training or of experience that he ought to have had to enable him to administer anesthetics with safety. No one can cavil at the proposition then, that every member of the medical profession should have received instruction in the administration of anesthetics before he is admitted to practice. Likewise, every physician will agree with the view that no layman should be allowed to administer anesthetics. That skill and experience go for much in administering anesthetics was clearly shown by an analysis of seventy-four cases reported in British journals during a year. Out of this number five happened in the hands of men who were constantly engaged in giving anesthetics, and the other sixty-nine in the hands of men with whom it was only an occasional duty. Perhaps Dr. Hewitt laid too great stress upon the necessity of the anesthetist possessing knowledge and experience, and ignored too much the personal factor, when he declared that nine out of ten of deaths from anesthesia were preventable, but there is no doubt whatever that fewer fatalities would happen if the administration of anesthetics were restricted to those who have had training in the proper methods of so doing.

The Treatment of Suppurative Conditions.

The recent changes in the treatment of local surgical conditions have usually been in the direction of imitating the natural processes that appear in the organism in answer to an injury or an infection. Such changes have been the more successful, the more closely the phenomena of repair have been studied and understood. Dr. E. Miller (*Münchener medizinische Wochenschrift*, April 28, 1908) has found that the pus of acute abscesses is very rich in ferments which break down the portions of the neighboring tissues and lead to the increase in size

of the inflammatory foci. He, therefore, conceived the idea of treating such foci by the addition of fluids rich in antiferments. Dr. Peiser has applied this idea in practice, introducing the blood serum of the patient into the abscesses. This procedure led to disappearance of pus and rapid healing in all abscesses, lined by smooth walls, the effect of the antiferment fluid being limited to the tissues in contact with it. The treatment of undermined abscesses in this way also gave gratifying results, if care was taken to expose the inflamed tissue by wide incisions. The procedure is the analogue of the treatment of cold abscesses by the introduction of iodoform emulsions that attract the ferment-bearing leucocytes, thus hastening the resolution of the disease focus. It seems logical enough to deserve extended trial in the hands of other surgeons.

Sympathetic Ophthalmia.

Many unsuccessful attempts have been made to explain the strange appearance of a destructive inflammatory process in one eye in consequence of a previous similar lesion in the other, which is the usual cause in cases of so-called "sympathetic ophthalmia." Clinically it is found almost impossible to foresee this turn of affairs, and until lately the pathology of the affection has been equally obscure. Dr. George Lenz (*Berliner klinische Wochenschrift*, April 27, 1908) says that the constant pathological findings consist in such cases in the infiltration of the uveal tract, leading to great thickening of the choroid, and to the destruction of the sclerotic coat from within outward; the exudative processes that are sometimes found are not typical of this condition, being due to the presence of a mixed infection. Such infiltration consists of small lymphocytes, polymorphonuclear eosinophiles, and so-called "epithelioid" cells. In general, the picture is distinctive enough to warrant the conclusion that sympathetic ophthalmia is due to a specific infectious agent, especially as the pathological findings in the later affected eye are similar to those in the eye that is originally attacked. The author thinks that this infection is carried from one eye to the other by the bloodstream, the absence of pyemia being probably due to the great specificity of the organism, limited as it is to the tissues of the eye alone. It may be hoped that such observations will soon reach the stage of assisting the ophthalmologist in foretelling the probable occurrence of sympathetic ophthalmia, and in preventing it by early removal of the originally affected eye.

The Final Results of Tracheotomies.

Discussions in reference to the relative values of tracheotomy and intubation continue to be frequent in Europe, where O'Dwyer's invention has not found such wide application as in his native America. Writing in the *Deutsche medizinische Wochenschrift*, April 23, 1908, Dr. R. Wolf considers the final results of tracheotomies as observed in Trendelenburg's Clinic at Leipsic. Of the 404 tracheotomized children in the period of twelve years, 264 were discharged cured, the high mortality figures being due to the fact that many patients reach the clinic in a moribund condition. Dr. Wolf has traced 173 of the discharged children, and found 145 of them, or 85.5 per cent., free of all symptoms whatever. Twenty-four patients, that is, 14.2 per cent., suffered slight inconveniences, such as hoarseness, tendency to a mild laryngitis, frequent attacks of "colds," etc., most of which complaints, however, could be explained by other causes than the tracheotomy. Seven patients, or 4.1 per cent., suffered more severely, four of them showing signs of tuberculosis, which in three cases could be traced to a family predisposition to the disease. Thus, cicatricial stenosis of the larynx, which many claim to be a frequent sequel of tracheotomy, has not been observed in any of the 173 tracheotomized children. Other unpleasant sequels are no more frequent than after intubation, and the advantages of the latter, therefore, are to be defended on other grounds than the alleged bad results of tracheotomies.

A New Aspirator and Its Uses.

Aspiration has long been of value in surgery, and many aspirators have been invented of which Potain's and Dieulafoy's are universally used. Recently the Frenchmen have been employing a simple apparatus which can be used wherever there is running water. An air-pump is attached to a faucet and then connected to a large glass bottle by an incompressible rubber tube; a second tube runs from the bottle and has a perforated trocar attached to its end. By turning on the water a vacuum is produced in the bottle. In *La Presse Médicale*, March 28, 1908, F. Legueu mentions the uses of this apparatus. Because of the continuous and strong suction produced by it he recommends it as a hemostatic in bladder work when packings would obscure the field of operation. In buccopharyngeal work the anesthetist should hold it in the patient's mouth, thus collecting the blood and preventing it from running down the trachea. He recommends it especially for the evacuation of fluids, as in large ovarian cysts when, owing to the complete removal of the fluid, there is less liability of any of the latter getting into the abdominal cavity than when the ordinary trocar and cannula is used without suction. In septic collections, such as empyema, suppurating kidney, pyosalpinx, suppurative cholecystitis, or appendical abscess, he believes the use of the apparatus will enable one to remove all the pus first without contaminating the healthy tissues, after which the routine measures for drainage can be employed.

News of the Week.

In Honor of Professor Fitz.—The issue of the *Boston Medical and Surgical Journal* of May 7, 1908, is dedicated to Dr. Reginald Heber Fitz, Hersey Professor of the Theory and Practice of Physic in Harvard University, in honor of his sixty-fifth birthday, which was celebrated on May 5. The original articles, twenty-five in number, are contributed by Dr. Fitz's former house pupils at the Massachusetts General Hospital and assistants in the Department of the Theory and Practice of Physic, Harvard University. The number opens with an excellent portrait of Dr. Fitz and a sketch of his medical career since beginning the study of medicine under Jeffries Wyman in Cambridge in 1864. There are thirteen lithographic plates illustrating pathological conditions and blood findings. There is also a bibliography of Dr. Fitz's contributions to medical literature. The editor contributes an interesting historical account of the growth of the "Festschrift" custom in America, beginning with the "Wilder Quarter-Century Book" in 1893.

The "Woman's Medical Journal."—The April

issue of this journal is a special number devoted to the annual meeting of the Women's Medical Society of the State of New York. It contains the address of the president of that society, Dr. Sarah R. A. Dolley of Rochester, together with many of the papers read at that meeting by women physicians occupying positions of eminence in the profession. The frontispiece is a photograph of Dr. Dolley.

"American Health" is the title of a new bimonthly journal issued as the official organ of the American Health League. This organization is the outcome of a union of the Committee of One Hundred on National Health of the American Association for the Advancement of Science and of the Public Health Defense League. Whatever other good comes from the amalgamation of the two bodies there is a great gain in brevity of title. The Public Health Defense League was founded in November, 1906, for the purpose of suppressing the illegal and fraudulent practice of medicine, the improper use of the United States mails in the transmission of immoral and obscene advertisements and literature, and for the conservation of public health and morals. The Committee of One Hundred was organized at the meeting of the American Association at Ithaca in June, 1906. As the two organizations had in the main the same objects, and many of the members of one body were members of the other also, it was decided to unite the two societies, the amalgamation being formally accomplished in November, 1907. The editor of the official journal of the Society is Dr. Richard Cole Newton of Montclair, N. J. The office of publication is at 69 Church street, New Haven, Conn.

An International Attack on the Opium Evil.—President Roosevelt has suggested to Congress the appropriation of $20,000 for the salaries and expenses of three commissioners and a secretary, who shall for this government inquire into the opium evil. A letter from Secretary Root, accompanying the President's note, suggests that each country which has signified to the United States its willingness to make such an investigation appoint commissioners who shall make inquiries in their own countries. He further proposes that all these commissioners meet at Shanghai, China, on January 1, 1909. This assemblage at Shanghai will then decide what shall be done to eradicate the opium evil.

Osteopaths Recognized as Legal Practitioners.—The Supreme Court in Brooklyn has ordered the Health Department to register an osteopathic practioner in the list of physicians of this city and to accept from him death certificates the same as in the case of physicians who are not osteopaths. The Health Department refused to register an osteopath on the contention that he was not a physician and did not prescribe medicine. The court holds that osteopaths are physicians and practise medicine, and except for restrictions put upon them by Chapter 344 of the Laws of 1905, prohibiting them from administering drugs and performing surgery with the use of instruments, they are entitled to all the rights and subject to all the privileges of physicians and medical practitioners.

Criticism of the Basle Nomenclature.—Dr. Hermann Triepel, professor of anatomy at the University of Breslau, submitted to the Anatomical Society at its twenty-second annual convention in Berlin, on April 22, 1908, a memorial on anatomical nomenclature, in which he expressed his agreement with all the views and suggestions put forward by Dr. Achilles Rose, of this city, since 1894. He also confirms the statement of Dr. Rose that the work of the Commission on Nomenclature of the German Anatomical Society, now known by the designation of the Basle Nomenclature or [B. N. A.], is not perfect; that it is, indeed, quite defective in regard to language, and that a thorough revision of it is desirable. During the last few years quite an appreciable number of books have been published, notably also in America, which have adopted the Basle nomenclature, and Triepel is of the opinion that the unopposed dissemination of the imperfections in medical nomenclature should be checked. In agreement with Rose, Triepel considers it an important requisite to secure the assistance of Greek colleagues for the linguistic revision of the [B. N. A.].

Clinical Week at Boston University.—The faculty of the Medical School of Boston University has decided to arrange for a short course of general clinical instruction, to be held during commencement week, June 1 to 6, 1908. More than thirty different professors and lecturers will participate, and general medicine, surgery, gynecology, and the various specialties will all be represented, as well as other miscellaneous subjects. The course will be so arranged that each attendant can be present at every exercise, and can thus obtain a survey of a large field in a comparatively short time. Sessions will be held at the Medical School buildings, at the Out-Patient Department of the hospital, and in the amphitheater and the clinical lecture room of the main building of the hospital. The course will be open without fee to graduates of any reputable medical college. Further information and tickets admitting to all sessions may be obtained from the registrar, Frank C. Richardson, M.D., 80 East Concord street, Boston.

Protection of New York Harbor.—The House of Representatives on May 15 passed Representative Greene's bill to protect the harbor of New York from deposits of injurious or unhealthy substances. It forbids scows to receive garbage without first getting a permit from the supervisor of the harbor, defining the limits within which the refuse may be dumped. It empowers inspectors to arrest persons without process for violations. The inspectors may also enter manufacturing and gas and oil works to see that no sludge or acid is permitted to run into the tidal waters of the harbor.

Endurance Tests for Army Officers.—President Roosevelt has approved a general order prescribing new physical tests for army officers. The officers will be obliged to ride thirty miles a day for three successive days, on two of the days within seven and a half hours, on the third day within six hours. Officers of the Coast Artillery who were exempted from the former riding test, will have to walk fifty miles in twenty hours over a period of three consecutive days.

The Plague in Venezuela.—The plague situation in Venezuela is believed to be growing more serious, though owing to the policy of secrecy and denial adopted by the government of that country it is impossible to obtain any definite information. On this account the port of New York has declared quarantine against all vessels from Venezuela. The disease is spreading from La Guayra to the other coast towns, several cases having occurred in Puerto Cabello.

Measles in Philadelphia.—An extensive epidemic of measles is prevalent in Philadelphia, 468 new cases having been reported for the week ended May 16. It is estimated that there have been between 5,000 and 6,000 cases throughout the city. Fortunately there have been only ten deaths.

Tuberculosis of the Lungs and Diabetes.—In the report of the Medical Section of the New York Academy of Medicine for April 21, published in the issue of May 16, at which a discussion on this subject took place, part of the remarks of Dr. A. Mayer was erroneously attributed to Dr. Stern. The views expressed in the entire paragraph were those of Dr. Mayer.

Tilley's Disease of the Nose and Throat.—In the review of this work in the issue of April 25, the name of the publisher is given as H. K. Gowers. This was a *lapsus calami* of the reviewer, the publisher being H. K. Lewis, 136 Gower street, London.

A New Science.—The Boston *Morning Herald* prints as a cable dispatch from Paris the important information that ten women are working at the Pasteur Institute. "One is an American who is studying a science known as anaphylasey, which treats of nervous sensitiveness under the influence of serums." Another American student married a colleague and has since deserted the institute.

Nurses' Banquet.—The eighth annual banquet of the Mary Thompson Training School for Nurses Alumni Association was given recently at the Grand Pacific Hotel. Miss Carrie Miller was toastmistress, and the address of welcome was delivered by Miss Mary Lindsay.

Cocaine Dealer Convicted.—A druggist in Mott street, New York, who is credited with selling cocaine to many women of Chinatown, was convicted recently in the Court of General Sessions of selling the drug without physicians' prescriptions. He was sentenced to one year's imprisonment and to pay $1,000 fine. This is the first conviction of the kind under the new law.

Rules for Chicago Hospitals.—A proposed ordinance in Chicago, drafted by Dr. George Hunt, of the City Health Department, provides for an advisory board of three experts, whose duties shall be to regulate hospitals, provide requirements for new institutions, and otherwise supervise places where the sick are cared for. This ordinance has been recommended for passage by the Council Committee on Health.

Kansas for Reed.—During the recent annual meeting of the Kansas State Medical Society at Iola, Dr. Lutz of Kansas City introduced a resolution, which was passed unanimously, expressing the approval by the society of the candidacy of Dr. C. A. L. Reed of Cincinnati for United States Senator from Ohio.

Prof. August Martin of Berlin, Germany, who is in Chicago to attend the meeting of the American Medical Association, was recently given an informal dinner by the Chicago Gynecological and Surgical Societies, and in a short talk complimented the Chicago surgeons on the progress made by the medical profession in America. Professor Martin is conducting a series of clinics at the different hospitals.

Dr. B. G. A. Moynihan of The Leeds Infirmary, England, recently read a paper on "Surgical Treatment of Gastric Ulcer" before the Chicago Medical Society, by invitation. Dr. Arthur D. Bevan, in introducing Professor Moynihan, said that medicine to-day is international, and that here in America we derive our inspiration largely from Great Britain and Germany.

The German Poliklinik of this city celebrated the silver anniversary of its founding with a dinner at the Waldorf-Astoria on May 16. The four surviving doctors of the original fifteen who established the institution twenty-five years ago were the guests of honor. These were Dr. Samuel Kohn, Dr. H. J. Boldt, Dr. A. H. von Ramdohr, and Dr. Ludwig Weiss. Frau Simon Steiniger, on behalf of the women interested in the Poliklinik, presented to the officers a silver wreath containing the names of the founders. In 1883, the first year of its existence, 2,869 persons were treated at the clinic and 8,700 calls were made. Last year 38,739 cases were treated and 82,683 calls were made.

Western Canada Medical Association.—A movement is on foot in the western Canadian provinces to organize a medical society for practitioners in that region. The existing local and provincial societies would become affiliated with the Western Association, and this in turn would be a part of the Dominion Medical Association. At a recent meeting of the Winnipeg Clinical Society a resolution was adopted "that a committee be appointed from this society to approach other societies in western Canada to ascertain their opinion regarding the formation in western Canada of a Western Canada Medical Association."

Society for the Study of Inebriety, Alcohol, and Narcotics.—The thirty-eighth annual meeting of this society will be held in Chicago June 2, 3, and 4, from 9 to 12 A.M. The special work of this society is the scientific study of the problems relating to alcohol and inebriety. A "temperance lunch" will be served Wednesday, June 3, at 1 P.M., which will be the occasion for an informal discussion of the alcoholic subject by the leaders of the profession. Dr. T. D. Crothers of Hartford, Conn., is secretary of the society.

American Gastroenterological Association.—The eleventh annual meeting of this association will be held in Chicago on Monday and Tuesday, June 1 and 2, under the presidency of Dr. John P. Sawyer of Cleveland.

National Association for the Study and Prevention of Tuberculosis.—The fourth annual meeting of this association will be held at the Auditorium Hotel, Chicago, on Friday and Saturday, June 5 and 6. The executive secretary, to whom application should be made for further information, is Mr. Livingston Farrand, 105 East Twenty-second street, New York City.

The Physicians' Club of Chicago.—At the annual meeting of this club, held May 15, the following officers were elected: *Chairman*, Dr. Henry B. Favill; *Secretary*, Dr. Edwin B. Tuteur; *Treasurer*, Dr. C. L. Mix; *Directors*, Drs. Favill, George E. Baxter, D. A. K. Steele, Alfred C. Croftan, and Charles E. Paddock.

The Worcester, Mass., District Medical Society.—The annual meeting of this Society was held May 13. The following officers were elected: *President*, Dr. William G. Reed, Southbridge; *Vice-President*, Dr. Lemuel F. Woodward; *Secretary*, Dr. G. E. Emery; *Treasurer*, Dr. George O. Ward; *Orator*, Dr. M. F. Fallon; *Librarian*, Dr. Merrick Lincoln.

Los Angeles to Invite the A. M. A.—According to the local papers the physicians of Los Angeles are very anxious to entertain the American Medical Association in that city in 1909, and it is proposed to send a committee to Chicago to press the invitation.

The Berkshire Medical Society.—At the annual meeting of this society held at Pittsfield, April 30, the following officers were elected: *President*, Dr. John L. Hassett of Lee; *Vice-President*, Dr. H. B.

Holmes of Adams; *Secretary,* Dr. I. S. F. Dodd of Pittsfield; *Treasurer,* Dr. William L. Paddock of Pittsfield.

The Windham County (Conn.) Medical Association met in annual session at Putnam on April 23. The following officers were elected: *President,* Robert C. Paine, Thompson; *Vice-President,* John Welden, Willimantic; *Secretary,* James L. Gardner, Central Village; *Councilor,* C. C. Gildersleeve, East Woodstock.

The Litchfield County (Conn.) Medical Association.—At the one hundred and forty-fourth annual meeting of this association, held at Winsted on April 28, the following officers were elected: *President,* Dr. I. L. Hamant, Norfolk; *Vice-President,* Dr. S. G. Howd, Winsted; *Clerk,* Dr. F. H. Lee, Canaan; *State Councilor,* Dr. E. H. Welch, Winsted; *Committee on Membership and Ethics,* Drs. J. Swett, New Hartford, C. I. Page, Litchfield, H. D. Moore, Torrington.

The Middlesex (Mass.) North District Medical Society met in annual session at Lowell on April 29. The election of officers resulted in the following choice: *President,* Dr. W. B. Jackson; *Vice-President,* Dr. C. A. Viles; *Treasurer,* Dr. T. B. Smith; *Secretary,* Dr. A. R. Gardner.

The Worcester (Mass.) North Medical Society held its fiftieth annual meeting at Fitchburg on April 28. The following officers were elected for the ensuing year: *President,* Dr. John G. Henry of Winchendon; *Vice-President and Treasurer,* Dr. Eustace L. Fiske of Fitchburg; *Secretary,* Dr. Walter F. Sawyer of Fitchburg; *Commissioner of Trials,* Dr. L. G. Chandler of Townsend; *Councilors,* Drs. E. P. Miller and F. H. Thompson, Sr., of Fitchburg, C. E. Bigelow of Leominster, and E. A. Sawyer of Gardner; *Nominating Committee,* Dr. E. P. Miller of Fitchburg; *Alternate,* Dr. E. A. Sawyer of Gardner; *Supervisor,* Dr. E. P. Miller of Fitchburg; *Censors,* Drs. A. H. Pierce of Leominster, J. B. Donnelly of Gardner, H. W. Page of Baldwinville, and E. J. Tully of Fitchburg; *Librarian,* Dr. A. P. Mason of Fitchburg; *Library Committee,* Drs. L. F. Baker and F. H. Thompson, Jr., of Fitchburg, and A. F. Lowell of Gardner.

The Independence County (Ark.) Medical Society held its annual meeting at Batesville the last week in April. The following officers were elected: *President,* Dr. C. A. Hinkle; *Vice-President,* Dr. Kennerly; *Secretary,* Dr. Lawrence; *Treasurer,* Dr. Hodges of Sulphur Rock; *Delegate to the State Society,* Dr. Gray of Cave City; *Alternate,* Dr. Lawrence.

The Nevada County (Ark.) Medical Society, at its annual meeting at Prescott during the last week in April, elected the following officers for the year: *President,* Dr. Adam Guthrie; *Vice-President,* Dr. S. J. Hesterly; *Secretary,* Dr. C. C. Purtie; *Delegate to the State Society,* Dr. J. S. Chastain.

The Dickinson and Iron Counties (Minn.) Medical Society held its annual meeting at Crystal Falls during the last week in April. The following officers were elected for the ensuing year: *President,* Dr. J. B. Brasseur of Norway; *Vice-President,* Dr. A. M. Darling of Crystal Falls; *Secretary and Treasurer,* Dr. H. A. Newkirk of Iron Mountain.

Bequests to Hospitals.—By the will of the late John A. Brill, of Philadelphia, the sum of $5,000 is bequeathed to the German Hospital, $3,000 to the Home for Incurables, $5,000 to the Hayes Mechanics' Home, $5,000 to the White Haven Sanitarium for Poor Consumptives, and $2,000 to the Home for Crippled Children. By the will of the late Joseph Cannon, of Philadelphia, his estate, amounting to $75,000, is, on the death of an aunt and a sister, to be divided among seventeen charitable institutions, as follows: Bethesda Children's Home, Children's Hospital, Episcopal Hospital, Foster Home, German Hospital, Germantown Hospital, Germantown Relief Society, Orphans' Home and Asylum for Aged of the Lutheran Church, Masonic Home of Pennsylvania, Methodist Episcopal Home for the Aged, Methodist Episcopal Hospital, Methodist Episcopal Orphanage, Odd Fellows' Home, Samaritan Hospital, Southern Home for Destitute Children, Woman's Hospital of Philadelphia, and Children's Homeopathic Hospital. By the will of the late Sarah Reeves, of Philadelphia, the sum of $5,000 is bequeathed to the Episcopal Hospital, for the endowment of a free bed, and $500 to the Home for Consumptives.

Northwestern University Medical School, Chicago, Illinois.—Dr. A. W. Meyer of the University of Minnesota, and formerly of Johns Hopkins, has accepted the professorship of anatomy, and Dr. A. N. Richards of the College of Physicians and Surgeons of New York City has been appointed professor of pharmacology in Northwestern University Medical School.

Obituary Notes.—Dr. J. Henry Scammell of St. John, N. B., died of pneumonia on April 25 at the age of thirty-eight years. He was born in St. John, and was graduated in medicine from McGill University in 1894. He was an ex-president of the St. John Medical Society.

Dr. Rufus Hall of Everett, Mass., died April 29 of pneumonia. He was born at Lynn, Mass., in 1869, and was graduated from Haverford College in 1892. His medical education was obtained at the Bellevue Hospital Medical College, where he was graduated in the class of 1896. His entire medical life was passed in Everett.

Dr. E. P. Russell died at his home in Middleburg, Vt., on April 29, at the age of sixty-eight years. Dr. Russell was studying at Castleton Medical College when the Civil War began, and served throughout the war, having been in twenty-three battles. After the war he completed his medical studies at the University of Vermont, graduating in 1866. He practised for six years at Council Bluffs, Iowa, but returned to Vermont in 1873 and took up practice at Middleburg.

Dr. Herbert H. Lyons of Fitchburg, Mass., died of pneumonia on May 6. He was born in Milford, and was graduated from the Harvard Medical School in the class of 1881. He had practised in Fitchburg since his graduation. He was also prominent in politics.

Dr. A. K. Carmichael of Trinidad, Colo., died of tuberculosis on May 1, at the age of fifty-four years. He was a graduate of the Cleveland, O., Medical College in the class of 1871.

Dr. Thomas L. Maddin of Nashville, Tenn., died April 28, at the age of eighty-three years. He was born near Louisville, Ky., September 4, 1824. He practised first in Alabama, but removed to Nashville in 1853. During the war he had charge of a large Confederate hospital in Nashville. He was for many years on the faculty of the University of Nashville, and up to his retirement, three years ago, was professor of diseases of the nervous system in that institution.

Dr. James T. Moore of Standish, Me., died suddenly on April 29. He was born in Standish on

June 3, 1841. He retired from active practice about two years ago.

Dr. Marcello Hutchinson of Lynnfield Centre, Mass., died on April 21 at the age of fifty-eight years. He was graduated from Harvard Medical School in 1877, and for many years was superintendent of the State insane asylum at Waterbury, Vt.

Dr. C. W. Ellis of Saginaw, Mich., died on April 18 at the age of forty-six years. He was born at Adrian, Mich., and received his medical degree from the Detroit College of Medicine. He had practised in Saginaw for nineteen years.

Dr. Lewis B. Parsell of Closter, Bergen County, N. J., died in the Nyack Hospital on April 22, at the age of fifty-six years. He was a graduate of the Long Island College Hospital in the class of 1881.

TENTH HARVEY SOCIETY LECTURE.

The last lecture of the present series given under the auspices of the Harvey Society was delivered at the Academy of Medicine on Saturday, May 9, by Professor E. A. Schäfer of the University of Edinburgh, the subject being "Artificial Respiration in Man."

The speaker began by pointing out the many exact measurements which were made use of in physiology, and then discussed the various instruments which had been devised to measure the amount of respired air. The ordinary spirometer, as such instruments were called, had been devised by Hutchinson. It was defective, however, because the inner cylinder was not equally balanced at the different levels. Hutchinson had employed it for measuring what he termed the "vital capacity." This was a ridiculous term, but probably adequate for an entirely useless measurement. The speaker then described the modified form of the instrument, in which the inner cylinder was exactly counterbalanced in all parts of its course.

Professor Schäfer gave a brief account of the historical development of respiratory measurements, stating that the most numerous as well as the most precise measurements had been made by Vierordt and Hutchinson in the middle of last century. There was an enormous variation in the amount of tidal air in different individuals, and in the same individual at different times. This depended on many factors, chief of which, however, was the rhythm of respiration. The average amount of tidal air per respiration varied from 250 to 1,000 c.c. The extremes reported were 50 to 1,640 c.c. Owing to the influence exerted by the rhythm on the amount of tidal air, it was much better to express the tidal air in a given amount of time; for instance, the amount respired in one minute. Even this was subject to fluctuations, but these were not so great. Vierordt gave 5,300 c.c as the average amount of tidal air per minute, and it was quite safe, the speaker said, to take about half a liter per respiration, and twelve respirations per minute, as the average ordinary requirement. Any method of artificial respiration which failed to supply this amount did not fulfill its purpose.

The speaker then referred to the appointment, in 1890, of a committee by the Royal Medical and Chirurgical Society of London, to study the relative merits of various methods of artificial respiration, with especial reference to drowning. Professor Schäfer was one of the committee. The first experiments had been made on cadavers, but it was soon found that these were unsuited to the investigation. It had, therefore, been decided to experiment on living subjects, both man and animals. It had soon become clear to the investigators that very little was known regarding the physiology of death from drowning. On studying this question themselves, it had been found that the amount of water in the lungs, in dogs, varied from 75 to 690 c.c., and that it was not in proportion to the size of the animal. The course of the resuscitation had been found to be unrelated to the amount of water taken in. The water, in fact, drained away very quickly, and some of it was absorbed by the blood-vessels.

While drowning, of course, was a kind of asphyxia, the two phenomena were not entirely alike. In drowning a number of factors modified the course of the process. The great rise of blood-pressure seen in ordinary asphyxia, for example, was absent in drowning. Drowning was also often associated with an increased secretion of mucus, and this fact was of great practical importance, for the mucus was churned up with the inspired water to a froth which sometimes blocked the alveoli so that it was impossible to force any air into the lungs. The experiments on dogs had shown that in some instances no amount of artificial respiration sufficed to resuscitate the animal. In animal experiments, it had been found that a small dose of atropine prevented this production of mucus, and Professor Schäfer jokingly suggested that before drowning a man should take an atropine tablet, and so lighten the labors of his rescuers.

The speaker then described the technique of the experiments carried out by himself and his assistants. Dogs were used, and drowning effected either by holding the animal with his head submerged in water, or by tubing the trachea, and then placing the end of the tube in water. The time was carefully noted, and tracings had been made of the respirations and of the heart beats and blood-pressure.

Professor Schäfer then demonstrated, by means of tracings, the effects produced by drowning, as well as the results of artificial respiration. The results, in dogs, had been very variable. After a drowning lasting two minutes it had hardly ever been possible for them to save the animal by artificial respiration. It was evident, therefore, that the time at one's disposal in a case of drowning was measured in parts of a minute. A few seconds might determine between life and death.

In considering the various methods of artificial respiration the speaker mentioned first the Marshall-Hall method, in which the patient was alternately placed on his side and then on his back. While on the back, firm pressure was made in the small of the back. This method had been published in 1857. In the following year, Silvester published another method. The technique of this was now so well known that it needed no further description. It was an attempt to imitate the physiological respiration, but sight was lost of the fact that the tissues in drowned persons did not respond normally.

In 1869 Howard, of New York, had described still another method. In this the patient was first placed on his belly, and pressed on the back. Then placed on the back, and pressed on his chest. Then the patient was grasped bodily around the chest by the operator and given a hard squeeze. The whole method was a pressure method. It had occasionally led to fractured ribs when the patients were old, or when the operator was too vigorous. All supine positions, the speaker said, were bad,

because water and mucus which accumulated in the throat prevented the air from gaining access to the lungs, and the same effect was produced when the tongue fell back.

The speaker then illustrated by lantern slides the method which he had found so successful. The patient was placed on his belly, with the face turned a little to one side. The operator knelt across him, at about the level of the buttocks, and placed both hands on the small of the patient's back. It was easy, in this way, to bring his body forward, and so throw its weight, in great part, on the patient's back. This produced a compression of the patient's abdomen, with a pushing up of the diaphragm, and a consequent forcing of air out of the lungs. The pressure was rather quickly released, thus permitting the air to rush in. This movement was to be repeated about every five seconds. It was found that this method supplied more tidal air even than normal respirations.

A comparison of the relative efficiency of the different methods of artificial respiration gave the following results:

Methods.	*Respiration Per Min.*	*Air Exc'ge Respiration*	*Exchange Per Min.*
Natural	13	450 cc.	5850 cc.
Silvester	13	175	2280
Howard	13	310	4030
Marshall Hall	13	254	3300
Prone Pressure	13	520	6760

At the conclusion of the lecture, Professor Schäfer gave a demonstration on a human subject, and then spoke of the previous work of Dr. Henry Baker, of the State Health Board of Michigan, which was very similar to the author's method.

After Professor Lee had moved the thanks of the Harvey Society for the speaker's masterly presentation, the chairman announced that the bound volume of the last year's lectures would probably be mailed to the members of the society next week. They would also be placed on sale at the same time. This closed the series of lectures for the present season.

Correspondence.

THE TWENTY-FIFTH GERMAN CONGRESS OF INTERNAL MEDICINE.

(From Our Special Correspondent.)

PRESIDENT'S ADDRESS—GYNECOLOGY AND INTERNAL MEDICINE—CARDIAC OVEREXERTION—FUNCTIONAL EXAMINATION OF THE INTESTINE—PATHOLOGY OF SYPHILIS—ELECTRICAL PROPERTIES OF IMMUNE BODIES — STAMMERING — HEART SOUNDS — HEMOPHILIA — RENAL TUBERCULOSIS—INJECTION TREATMENT OF SCIATICA—SUBJECTS FOR DISCUSSION IN 1909.

VIENNA, April, 1908.

THE opening session of the twenty-fifth Congress of Internal Medicine was held on April 6 in the presence of the Minister of Education, and of a very large number of medical men. The president, Prof. Fr. Müller of Munich delivered the opening address in which he greeted the representatives of the Government and spoke in very appreciative terms of the high position of the Vienna school in the history and development of the science of internal medicine. In discussing the Congress itself more particularly, he said that while it was evident that this had lost none of its interest and value, it was necessary to consider the question as to whether it could continue in its present form, or would require to be divided into special congresses, or several sections. The province of internal medicine had become so great that, as was the case with surgery, it was no longer possible to be thoroughly versed in all its branches. Specialization was useful and necessary, and much had been accomplished through it, while the public would always seek the aid of those who had acquired special skill in the treatment of certain diseases. Specialization should be opposed, however, if the specialists got out of touch with internal medicine as a whole, and if they had become specialists not because they were more capable in one field than in others, but only because they had some ability in one branch and none at all in others. Specialization of this sort was a danger to the patients.

The session of the first day was devoted especially to a discussion of the relations of the female sexual organs to internal diseases. The principal address was delivered by Prof. von Rosthorn, who confined himself largely to setting forth the scientific basis underlying this connection, as well as to indicating some of the most important disturbances in the functions of other organs which appeared to be originated by the sexual system. Lenhartz of Hamburg in speaking of the same subject aroused a good deal of interest by what he said in regard to treatment. He opposed protracted gynecological treatments and the tendency to perform very numerous operations, which he considered were not only unnecessary but also often injurious. Well-known gynecologists, he said, had sharply criticised overtreatment by specialists, and had pointed out that in the majority of cases the genital disorders which brought the patients for advice were not the causes but the concomitants of a disturbance of general health, and the consequence of nervous weakness which could be relieved through general measures rather than by local treatment.

Acute cardiac overexertion was discussed by Prof. Schott of Nauheim, who said that many years ago he had made experimental observations in this direction by having healthy, strong persons wrestle with each other until they got out of breath. It was possible to demonstrate dilatation of the heart in such persons both by percussion and with the Roentgen rays; as the result of these observations and of clinical histories, Schott considered that even in healthy individuals the picture of chronic cardiac overexertion might result in consequence of excessive muscular activity. For some years it was believed that both long-standing and acute overexertion of the heart could appear only in an organ already diseased either organically or functionally. The orthodiagraphic examinations of Moritz, Hofmann, and De la Camp had thrown doubt on the occurrence of acute cardiac dilatation as the result of bodily overexertion. The speaker then referred to a series of investigations by other clinicians which showed that overexertion might lead to chronic cardiac weakness in those previously well, and in the same category he placed the results obtained by Beck, Zuntz and Schumburg, Staehelin, and others, in experiments made on mountain climbers, bicycle riders, etc. He pointed out that the method of orthodiagraphy was liable to lead to errors in interpretation and did not yield altogether reliable results. Taking into account the possibilities of error, Schott had continued his former observations on wrestlers and by orthodiagraphic methods had been able to demonstrate enlargement of the heart caused in this way, so that he was led to his original conclusion to the effect that overexertion continued to the point of producing palpitation and severe dyspnea ultimately induced acute dilatation.

The following speaker, Dr. Herz, emphasized the fact that under some conditions the heart might suffer severely through interference with the space required for its normal action. Wrong position in writing and drawing diminished the size of the thoracic cavity and pressed the ribs of the left side against the heart. Cardiac disturbances in writers, physicians, and architects might be explained in this way. The hearts of dentists suffered as a result of the stooping position required in their work. Suitable treatment and attention to maintaining an upright position even while reading, writing, and drawing, would bring relief.

Prof. Schmidt of Halle spoke on the new methods of examining the functions of the intestine. As the result of his observations extending over many years, he had been led to undertake systematic examinations of the stools after several days' use of a definite test diet. The results of these examinations enabled the chaos of the various diarrheas to be divided into distinct types, recognition of which was often sufficient to enable a cure to be effected. He had also interested himself in the abnormal fermentative processes in the intestine and believed that many of the cases which had previously been regarded as instances of nervous diarrhea were really due to conditions of irritation and inflammation high up in the gut. Similar results had been obtained in his work on chronic constipation. In this condition, which formerly was always considered dependent on muscular or nervous weakness of the intestine, the primary cause was also to be found in disturbances of digestion, namely, in that digestion, particularly of the cellulose of the food, was too efficient. Schmidt, therefore, treated the condition by giving agar-agar to which a small amount of a vegetable extract had been added to stimulate the intestinal mucosa.

In the discussion that followed, Hecht of Vienna spoke of the microchemical reaction for mucus; Munz of Prague emphasized the importance of a fixed test diet when such examinations of the stool were to be made; Plönies of Dresden referred to the importance of the function of the intestine in killing bacteria; and Holzknecht of Vienna said that he had been able to demonstrate by means of the Roentgen rays the presence of accumulations of gas in the intestine. Strassburger of Bonn spoke of the ability of the intestine to regulate its bacterial content and Schüts of Wiesbaden recommended the use of a definite test diet.

Julius Schütz of Vienna discussed the testing of the functional efficiency of the stomach in infants. This he said had made little progress during the past twenty years. He believed that the chief reason for this lack of progress lay in the exaggerated importance which was ascribed to the so-called free hydrochloric acid, which he considered had little or no diagnostic significance. He had devised a method which indicated the degree of motility of the stomach; that is, its ability to pass on its contents into the intestine, and had also modified the chemical examination in such a way as to enable the presence of abnormal gastric fermentation to be ascertained. The superiority of this method over those in general use had been demonstrated clinically and it was to be hoped that the functional examination of the infant's stomach would soon be on the same basis as that of adults.

Prof. von Noorden stated that the treatment of mucous colic by means of a vegetable diet rich in residue which was recommended by Lenhartz and Moritz had already been suggested by him twelve years ago. At that time the measure had been opposed, and he was glad to see that it was now being received with favor.

The discussion of the present standpoint in regard to the pathology of syphilis, by Prof. Neisser of Breslau aroused much interest. The speaker first took up the discoveries that had been made in this field during recent years. He spoke of the discovery of the spirochete of syphilis by Schaudinn and stated that it might now be assumed beyond all doubt that this organism was the causative agent of the disease. He then mentioned Metchnikoff's discovery that monkeys could be infected with this organism and also referred to Wassermann's method of serum diagnosis, which he considered of the greatest importance. The present attitude was to make the diagnosis as early as possible and not to wait until the entire body was saturated with the poison. In other respects there was not much change and the clinicians still favored protracted intermittent treatment. In regard to serum treatment and protective immunization, he said there was nothing to report. This was a sad chapter that had to be passed over, and in spite of all efforts an immunity against syphilis had not yet been successfully demonstrated. He hoped, however, that the time would soon come when this question would not need to be considered at a medical congress, because the disease would no longer exist except in its earliest stages, and dissemination through the internal organs would no more be seen.

Landsteiner and Pauli presented a paper on the electric migration of immune bodies. The electrical condition of colloids was of great importance, and could be recognized by the direction of migration in the electrical field. Electronegative colloids moved to the positive pole and electropositive colloids to the negative pole. In addition to these there were others which were not transported in one dirction or the other, but were electrically neutral. The chief representatives of these colloids were albumins freed from their salts by careful dialysis. While pure albumin did not readily move in the electric field to an appreciable degree the addition of a trace of acid or alkali imparted an electric charge to it and it would then migrate to the negative or positive pole. Such substances might be called amphoteric colloids. The authors then discussed the reasons for the contradictory results sometimes obtained in such experiments which they thought were often to be explained by the use of unreliable methods. They further reported experiments made with ricin, abrin, and the agglutinin of chicken serum, by means of which the electrical behavior of these bodies was determined under various conditions.

Stern of Vienna read a paper on the pathogenesis and diagnosis of stammering. He said that in many cases this affection was not the result of a simple neurosis of coordination or spasm of the muscles of phonation, but was a form of compulsion neurosis depending on a concept of compulsion. In accordance with this view it was possible to obtain exceedingly good results by a suitable combination of exercises and psychical treatment even in the most severe cases.

L. Kürt spoke on the auscultation of the heart, saying that the intensity and situation of the heart sounds depended not entirely on the organ itself, but also on the capacity for vibration of the various media through which the sound waves had to pass on their way to the surface of the thorax. The first sound is to be heard distinctly in front as well as over a part of the left side, but the second sound is audible over a much more extensive area. In determining the outlines of the heart, it is of importance to estimate the intensity of the first sound, and the speaker outlined a method by means of which this principle could be applied as an adjuvant to percussion.

Siegel of Reichenhall described experiments on dogs in which he found that by exposing the animals to wet and cold it was possible to produce acute inflammatory changes in the nerves. If the animals were dried and rubbed immediately after the chilling no lesions were produced, but they appeared in the same animal if the experiment was repeated without the rubbing and drying.

Morawitz and Lossen of Heidelberg reported a case of hemophilia in which the clotting of the blood was retarded for from five to seven times the normal period. They concluded that this was the result of a deficiency in the production of fibrin ferment. Prof. F. Pick of Prague gave the history of a family of "bleeders." The individual he had observed had suffered from renal hemorrhages and was the only survivor of seventeen children, of which number most of the males perished during the war of 1866 from insignificant injuries such as scratches and thorn pricks.

F. Kornfeld spoke on renal tuberculosis, and said that he had found that a great deal could be accomplished in these cases by climatic, dietetic, open-air, and tuberculin treatment, as well as by carefully managed psychotherapy. Internal medicine, therefore, had a prominent place in the treatment of this affection, and should give way to surgery only when it seemed that the latter would be distinctly useful in the particular case under consideration.

Salomon and Przibram discussed the diagnosis of gastric carcinoma, saying that the demonstration of blood serum emanating from the ulcerated surface in the stomach contents was a valuable diagnostic aid. This could be done by adding some of the gastric juice to the serum of a rabbit immunized against human serum.

Lenhartz of Hamburg described the clinical picture of a catarrhal intestinal disorder of purely nervous nature. Rheinboldt of Kissingen expressed the opinion that habitual constipation was a nervous disorder which should be treated on this basis. Pariser of Hamburg advocated a modified form of Schmidt's test diet, and Delug of Vienna demonstrated an apparatus for testing the amount of fermentation in the intestine.

A. Bum of Vienna stated that he had treated one hundred and five cases of subacute and chronic sciatica by the injection of sterile salt solution into the nerves, and in 62 per cent. had obtained a permanent cure, and in 21 per cent. considerable improvement.

Prof. Jerome Lange of Leipsic presented a preliminary report on the treatment of tuberculosis with Jakob's tuberculin. In a number of cases of pulmonary tuberculosis the results had been excellent and an advantage of the method was that it could be used even in advanced and febrile cases.

The following subjects for discussion were proposed for the next year's meeting: The pathology of mineral metabolism; the dynamics of the thorax in relation to pulmonary physiology and pathology; the relations of gastric disorders to the circulation.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PROGRESS AT THE WEST LONDON HOSPITAL—THE IRISH UNIVERSITY BILL—DYSENTERIC DIARRHEA—INCOMPLETELY DESCENDED TESTES — TETANUS NEONATORUM — SOLDIERS INVALIDED FOR TUBERCULOSIS—MODEL PUBLIC HOUSE—OBITUARY.

London, May 1, 1908.

Yesterday the Duke of Abercorn presided over the annual meeting of the West London Hospital, at which members of the staff referred in optimistic tone to the recent progress in medicine and surgery. Dr. Seymour Taylor said that notwithstanding the great advances in medicine during his connection with the hospital he believed they were on the threshold of still further most important discoveries. In regard to the work he always welcomed patients who were not poor enough to wait in the out-patient department and not rich enough to pay fees. This is a point on which he will hardly command the approval of general practitioners, who are quite ready to take charge of such cases on

most moderate terms and who think consultants do not properly appreciate their work. Hospitals are founded for the poor—not for the class which can pay the moderate charges of the general practitioner.

Mr. Swinford Edwards stated that this hospital was the first in London to adopt the antiseptic system and progress was still its motto. Its electrical and *x*-ray department was well equipped and conferred the greatest advantages. He instanced the wiring of fractures as assisted thereby and referred to operations performed under local anesthesia by lumbar puncture as among the recent triumphs of surgery.

The Irish University Bill is not receiving the general approval that was at first expected. On Wednesday, after a six hours' debate in Belfast, the higher education committee of the Presbyterian Church condemned it as "subversive of the principles of religious equality," and a commission of the Assembly was directed to take action accordingly. Discontent is also being expressed in other directions. It is alleged that promises made by the chief secretary in the House of Commons are not fulfilled in the bill as printed, and agitation as to this is threatened. Again, the endowments are held to be inadequate and the provision for the professorate insufficient. On the other hand the amount is represented as a Government bribe for Irish support. In the confusion caused by such contradictory statements a prior question deserves consideration. Is the increase of universities desirable in the best interests of education? Would not the money proposed to be expended be better devoted to the needs of the existing institutions? An excessive number of academical institutions does not tend to their efficiency. Anyone who has spent much time in Italy will admit that the disadvantages of too numerous universities are to be reckoned with. You may multiply students and graduates without conducing to scholarship or the happiness of the community. In the case of Ireland it is possible that competing institutions may not meet the difficulties of the situation.

A remarkable illustration of the difficult sanitary problems that occasionally call for solution was communicated to the Society for Tropical Medicine and Hygiene by Dr. W. T. Prout on the 15th ult. It was an outbreak of dysenteric diarrhea in a company of soldiers under his care when he was chief medical officer in Gambia. The water supply of the troops was from rain stored in large iron tanks which had been thoroughly cleansed towards the end of the dry season and the inlet pipes disconnected until the first shower washed the roofs. At the time of the outbreak the tanks were pretty full. No cases occurred among the civil population, and he was convinced the cause was within the barracks. The water was clear, sparkling, without bad taste or odor, but after investigating every other sanitary arrangement Dr. Prout was thrown back to this, as nothing else could be found as a cause. He had the manhole removed from one of the tanks and a bucket tilted over and dragged along the bottom. Finding a little sediment he ordered the water to be run off—reluctantly, as good drinking water is valuable in Bathurst. A deposit of greenish grey mud was collected, in which he found spindle-shaped bodies about the size and shape of oats, but slightly larger. He would not have know what they were had he not previously seen them under different conditions. Some time before, on riding to the hospital, he had witnessed a passage of locusts—millions settling on the trees, the ground and the roofs of the houses. In thirty-six hours every green blade had disappeared and the ground was brown and bare. He had noticed just such bodies then lying about; they were the fæces of the locusts and composed of the fibrous indigestible parts of grasses, with the silicious particles found in many. It was then clear to him that such fæcal deposits on the roofs of the barracks had become partly disintegrated and washed into the tanks with the next shower. Their specific gravity kept them suspended for a time, but they sank slowly and the irritation of the spicules passing through the alimentary canal caused the disease in the same way as the diamond dust of Egyptians or the ground glass of the Obeah man in the West Indies is known to do in a severer degree. Cleansing the tanks suppressed the outbreak at once.

Mr. Cantlie remarked that the outbreak resembled "hill diarrhea" in India, sometimes due to mica in the water after heavy rains. Dr. Hartigan said mica from disintegrated granite gave rise to such attacks in Hong Kong. Fleet-Surgeon Collingwood said that in Bermuda lime carried from the roofs by rain was blamed as the cause of similar outbreaks. Dr. Carnegie Brown said the first water from roofs was always impure and must he prevented from reaching the tanks.

Two papers on the treatment of imperfectly descended testicle read at the Harveian Society point to rather diverse conclusions, which were to some extent accentuated in the discussion. The first was by Mr. L. B. Rawling and was based on the investigation of 120 cases in St. Bartholomew's Hospital. In forty cases in which only one testis was improperly descended scrotal placement was attempted; in twenty-nine of these the ultimate result had been ascertained and in twenty-five it was failure, for the testis had retreated and become small and atrophic. In four cases the result was favorable. The other cases could not be traced. The conclusion was against this operation unless in exceptional cases in children under seven years. All evidence pointed to the conclusion that an inguinal testicle was a discomfort to the patient and liable to injury, infection, torsion, and even malignant disease. It was also useless when replaced. In fifty cases of all ages the testis had been removed without any interference with the bodily or mental development, the remaining organ being sufficient for its function. When both testicles are undescended the conclusion is different—the evidence showing that if replaced in the abdomen they are functionless, so that if scrotal placement fail it would be better to let them remain in the canal, where they are more likely to be functionally active than if replaced in the abdomen.

The second paper was by Mr. Edred M. Corner, who distinguished between imperfect descent and imperfect development, and said though something may be done for the former, little can be for the latter. By neglecting the question of future development operations give unsatisfactory results and often do harm. He said scrotal placement was the popular measure, but except in very carefully selected cases was a murderous operation; anatomically it seldom remained, physiologically it was largely converted into useless connective tissue. What then? Three lines of treatment remain. 1. To leave it alone until attacks of pain or inflammation occur, or hardening of the testis, or dilatation of the canal, or hernia. 2. Castration, only justifiable when the cord is twisted, the testis much sclerosed and the patient twenty-three years old or more. 3. Abdominal replacement, most useful from the patient's point of view, as it ministers to the development; its value lies in its internal, not its external secretion. By waiting until the indications named occur Mr. Corner thought few cases would eventually escape operation, especially as about 80 per cent. are associated with a hernial sac. Yet he admitted scrotal placement might be tried in young subjects under seven when the testis was movable and the imperfect descent slight.

Fuller's earth is said to be a very common application to the umbilicus of the new-born among the poorer class, and it has been suggested that this may be a cause of tetanus neonatorum. The idea was mentioned at the Society for the Study of Children's Diseases when Dr. P. Parkinson communicated a case of an infant of two weeks admitted with tetanic symptoms. It was ascertained that the mother had treated the umbilical wound with Fuller's earth and had lost another child when six days old from what was called lockjaw. In the case observed the wound looked unhealthy and discharged a thin, sticky fluid. A member objected to the explanation on the ground that the application was so excessively common, perhaps made in 95 per cent. of poor infants. On the other hand, it was said this possible source of tetanus had previously been recognized.

A preliminary report of the committee on the care of soldiers invalided and discharged for tuberculosis has been issued. The conclusion is reached that in recent cases the State should make provision for their care and treatment, and it is proposed that arrangements be made with civil sanatoriums to set aside a proportion of beds for these cases. It is estimated that £20,000 a year would suffice for such provision. This, you will notice, does not meet the needs of advanced cases, as they are ineligible for institutional treatment. Such cases are very pitiable, for a discharged soldier invalided cannot be expected to find occupation to support himself. Yet this report proposes no help for him. Perhaps the further report may find some way of helping him.

The Institute of Hygiene has converted a couple of rooms into a sort of "model public house," which was opened on Monday by Sir W. Bennett, and will be on view for a fortnight. There is no drinking bar, but a small barrier for service only, the customers having to sit at small marble-topped tables. Coffee, tea, cocoa, and all sorts of temperance beverages can be obtained. Food also is provided at some tables—cold viands,

sweets, fruits, etc. Games and newspapers occupy a central table. In short, everything is done in support of the view that brighter and better surroundings will promote temperance by meeting the demand for reasonable refreshment. Sir William Bennett, in declaring the exhibition open, agreed with the common saying that a nation could not be made sober by legislation, and the promoters of this exhibition advocated the betterment of the surroundings of the drinker. The essentials to this were abolition of the bar, food as well as drink being available, and the provision of means of amusement and recreation. Drs. C. Godson, Murray Leslie, Thresh, and Mayo Robson spoke in support of the scheme.

Dr. Charles Edward Underhill, president of the Edinburgh Royal College of Physicians, who had also been president of the Royal Medical, the Obstetrical and Harneian Societies (Edinburgh) died last Friday, aged 63. He was consulting physician to the Royal Hospital for Children and the Royal Maternity Hospital, had been lecturer on obstetrics and gynecology and Examiner in both colleges. He was a Tancred student at Cains College, Cambridge, and graduated there in arts (1867) and in medicine (1870). He was Fellow of both Edinburgh colleges and of the Royal Society. He began consulting practice in Edinburgh in association with the late Dr. Matthews Duncan, and when that eminent gynecologist came to London, succeeded to a large part of the practice. His position from the first was considered assured, and he never lost the confidence of his brethren as an able adviser in difficult cases and as a high-minded gentleman. His health had failed for several months, so that his death was expected by some of his intimate associates and medical friends.

Surgeon-General W. S. Oliver died on Monday at the age of 72. The late officer entered the army service in 1857 and retired in 1883. He saw a good deal of service in the Indian mutiny campaign and was mentioned in dispatches. He was M.D. of Halifax, Nova Scotia and also of St. Andrews.

Dr. William Thomas G. Woodforde, M.O.H. for the Berkshire combined sanitary district; vice-president, formerly president, of the Society of Medical Officers of Health, has died at the age of 81. A university college student, he took the M.B., London, in 1848, and the M.D. in 1852. Before going to the Berkshire district he had been M.O.H. and Public Analyst for Poplar.

Another death is that of Dr. Bowen-Davies, consulting physician to the Llandrindod Wells Hospital and author of the history of that spa. He was 60 years of age.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

INAUGURATION OF THE NEW CLINIC OF THE FINSEN INSTITUTE—TECHNIQUE OF THE LIGHT BATHS—THE LIGHT TREATMENT OF ANGINA PECTORIS—APPENDICITIS—DEATH OF PROFESSOR LENNANDER.

COPENHAGEN, April 19, 1908

On April 14 the King and the royal family were present at the inauguration of the new clinic for internal diseases of the Finsen Light Institute of Copenhagen. The equipment of the clinic is very complete, about $100,000 having been spent on an establishment of only thirty-two beds and a large out-patient department. The new clinic had for many years been wished for by Finsen, but death prevented him from seeing his ideas carried out. In his last address to the board of directors of the Institute, which may well be considered as his scientific will, he expressed his belief that the therapeutic application of the universal action of light rays on the organism would lead to great results. He felt disposed to think that the light rays as a therapeutic means would be of the very highest importance for the treatment of chronic diseases, as diseases of the blood, of metabolism, of the circulatory system, etc. After Professor Finsen's death the director of the Finsen laboratory, Dr. K. A. Hasselbalch, took up the scientific investigation of the universal action of the light rays, and, as I have written you on two previous occasions, he claims to have demonstrated certain effects on the blood pressure and respiration. Certain nervous diseases and affections of the circulatory system, particularly angina pectoris, have been treated at the Institute in the way advocated by Dr. Hasselbalch, but the results claimed by the advocates of the treatment have been rather severely criticised and commented upon at two discussions in medical societies of this town. The task of the new clinic will therefore be to study the therapeutic value of light rays in different diseases without neglecting the application of other modern procedures of physic or dietetic treatment.

It is in this connection not without interest to notice what Dr. Oeigaard has recently published about the technique of the Finsen Light baths. Two large arc lamps are used, each of 75 amperes and 50 to 55 volt tension. The lamps are brought as near as possible to the patient, generally at a distance of 50 to 60 centimeters, when the temperature of the air at the surface of the body will be about 40° C. (104° F.). During the treatment the patient wears only a pair of very short drawers and a broad-brimmed straw hat with a linen curtain; a pair of dark goggles completes the outfit. The first ten or twenty minutes the patient is standing and turns from time to time in order to obtain uniform action on all parts of the skin. Then comes an irradiation of the lying patient, followed by a shower bath. The total duration of a single treatment is about half an hour. The whole cure consists of about nine simple treatments and lasts for about one month. The first effect of the irradiation is an erythema, which sets in some hours later. The patient himself feels the skin hot and swollen, but is only rarely inconvenienced by pricking or itching sensations. The erythema remains after the first treatments for 30 or 40 hours; later on only a feebler reaction takes place, while a chronic hyperemia of the skin develops and may be demonstrated for months after the cure is finished. Dr. Oeigaard also gives the results of the treatment of certain of the out-patients. In 34 out of 60 cases the absolute heart dullness decreased under the treatment. Fourteen patients suffered from edema; ten of these were completely relieved. The blood-pressure was determined by means of Hill and Barnard's sphygmomanometer. In all cases where the pressure was higher than normal an often very considerable decrease occurred during the cure. Of the subjective effects of the treatment Dr. Oeigaard first mentions a peculiarly agreeable weariness, most pronounced in women. The sleep is nearly always improved after the second or third treatment. Of seven cases where insomnia was the only indication for the trial of the treatment a satisfactory result was obtained in six of the patients.

The action of the new treatment on the painful attacks of angina pectoris is reported upon by Dr. H. Iacobæus. He has tried the light cure in 52 patients. In three cases the treatment had to be discontinued, in two the result was nil. In fourteen other cases the effect was slight or transitory, but in thirty-three of the patients the improvement was considerable. The conclusion is that the light bath cure has proved a reliable means of obtaining a more or less considerable and lasting improvement in the majority of patients with angina pectoris.

At the last meeting of the Copenhagen Medical Society Dr. L. Kraft read a paper on appendicitis. He had observed 247 cases and operated on about 200 of them. He thought it advisable to divide the clinical forms of appendicitis in four classes, the subserous, lymphangitic, gangrenous, and perforative, and described in what way one might diagnosticate between them. Rovsing's new symptom (which I described in a previous letter) was very valuable when it was present, but he had not been able to find it in several cases. On operation he had seen that when Rovsing's symptom was present the appendix was situated on the inner side of the cecum, but it was always wanting when the appendix lay laterally to the cecum. Professor E. A. Tscherning said that, judging from his experience of more than 800 cases, it was quite impossible to diagnosticate between the different classes as Dr. Kraft would do, nor had it any practical interest. What was important to determine was only whether there was a peritonitis and whether the peritonitis was circumscribed or spreading. One of the best signs of the last class was the one described by Lennander of Upsala, viz., the wandering painfulness for pressure of the abdominal wall. Professor Rovsing said he did not think that Dr. Kraft had sought for his symptom in the way he had described. As might be remembered, he had found the symptom very valuable in cases in which sensation of pain might be elicited by pressure on McBurney's point, while it remained uncertain what was the pathological process underlying the symptom. If it was an inflammation of the cecum or the appendix, a compression of the contents of the colon, brought about by applying one hand against the descending colon and letting it glide upwards against the left flexure, would cause a sudden darting pain on McBurney's point.

After several years' ill health, caused by a chronic endocarditis, Professor Karl Gustaf Lennander has

died, only 51 years old. In him the Swedish profession has lost one of its most prominent and widest known representatives. His chief interest centered in abdominal surgery and investigations into the sensibility of different organs, particularly the peritoneum. Amongst his very numerous and valuable literary contributions some have, I think, also appeared in American text books.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

NEW DEAN OF LAVAL UNIVERSITY, MONTREAL—OSTEOPATHY IN CANADA PROHIBITED—CANADIAN HOSPITAL ASSOCIATION —DEATH OF HON. DR. WILLOUGHBY—DR. BARKER HONORED— ESTABLISHMENT OF A PSYCHIATRIC CLINIC AT TORONTO.

Toronto, May 2, 1908.

Dr. E. P. Lachapelle has been appointed Dean of the Medical Faculty of Laval University, Montreal. The appointment is regarded with great favor. Probably no medical man in the Province of Quebec has devoted himself so disinterestedly for so long a period and in so many different directions to the promotion of the health and well-being of his fellows as has Dr. Lachapelle. To his efforts, more than to anyone else, is due the establishment of a Provincial Board of Health for Quebec province. He has been chairman of the board for more than twenty years and in spite of many discouragements he has done most efficient work for public medicine in his native province. Dr. Lachapelle was mainly instrumental in the building of Notre Dame Hospital and in later years presided for some time over the College of Physicians and Surgeons of Quebec.

Should osteopaths be allowed to practise in Canada? is a question that has been attracting considerable attention lately. It was expected by some that an effort would be made at the recent session of the Legislature of Ontario to amend the Medical Act so as to permit the registration of those who announce themselves as qualified to practise what is known as osteopathy. However, no such amendment was introduced and the probability now is that the osteopaths will be forbidden to practise further. A recent order has been issued that they are to be prosecuted under the Medical Act which makes it illegal for anyone not regularly registered as a member of the College of Physicians and Surgeons to practise medicine or surgery in Canada. For the past few years the osteopaths have not been disturbed, but of late they have become more numerous and hence the order to proceed against them.

The meeting of the Canadian Hospital Association at Toronto this year was well attended and the papers and discussions were highly interesting. The subjects brought before the meeting included "The Two vs. the Three Years for Nurses in Training," "The Relation of the Public to the Hospital," "Hospital Financing," "The Psychiatric Hospital," "The Care of the Tuberculous Patients," etc. The increased attendance at the meeting this year is regarded as evidence of the fact that these meetings form a common ground on which superintendents of hospitals may meet to consider the great problems relating to the care of the sick and the economical management of institutions.

An effort is being made in Ontario, where there are about seventy general hospitals under Government inspection, to make each institution an educational center. It is advocated that at every hospital a medical library and meeting place for medical men in the vicinity should be provided, where the records of interesting cases would be kept and laboratory facilities afforded. A movement has already been made in this direction in some places with most gratifying results. The development of the educational advantages which every hospital might afford would make, it is felt, each institution a miniature post-graduate school. The efforts that are being made to encourage this new movement are indicative of successful results following.

By the death of the Honorable Dr. W. A. Willoughby, M.P.P., of Colborne, the Canadian medical profession lost one of its best-known members. The deceased was born in Ontario, 1844, and graduated at Victoria University, 1867. Although a member of the Legislature of Ontario and during the past three years a member of the Ontario Government, Dr. Willoughby never ceased to take an active interest in his profession and never allowed his duties as a public man to interfere with his professional work. As a medical man he exercised great influence in the Legislature and faithfully upheld the rights and dignity of the profession. Genial in disposition, his range of acquaintance was large and his death has been noted with regret by many devoted and warm-hearted friends in all parts of Canada. Dr. Willoughby was greatly interested in the Legislature of Ontario in promoting reforms in matters relating to public health and improvements in the system of hospitals. He was a member of the medical commission which recently visited Europe for the purpose of investigating modern methods for the treatment of insanity. He strongly favored the establishment of psychiatric clinics, where the students of medicine might have advantages in the study of mental diseases. Dr. Willoughby, as an old practitioner of medicine, argued with great force that it would be of the highest advantage to the general practitioner to have improved clinical advantages for the study of mental and nervous diseases before entering the field of practice. The memory of the deceased will long be highly esteemed as that of a medical man who sought to utilize his public position solely for the benefit of his fellows.

Dr. L. F. Barker, professor of medicine in Johns Hopkins University, Baltimore, and formerly of the University of Toronto, was honored by Queens University, Kingston, on April 29, by having conferred on him the honorary degree of Doctor of Laws.

The Province of Ontario is shortly to have greatly improved accommodation for the proper and systematic treatment of incipient insanity. During the past year a medical commission was appointed by the Ontario Government for the purpose of making a thorough inquiry into the subject. The members of the commission were Hon. Dr. Willoughby, Dr. C. K. Clarke and Dr. E. Ryan, the first named being a member of the Government and the others being medical superintendents of two of the hospitals for insane in Ontario. The report presented by these gentlemen has just been published. The commission visited all the leading cities in Europe and America where advanced methods in psychiatry are in vogue. In Berlin the work of Dr. Ziehen was carefully studied. There the hospital plan with two hundred and thirty beds is faithfully observed. There is a day nurse for every four or five patients, and a night nurse for every six. A cheerful demeanor was found in all the wards, with abundance of light and air. The wards were of the decidedly hospital plan and formed a marked contrast to the wards ordinarily found in asylums. Ziehen's clinic is really a sifting department, where the patients are retained as long as there is any apparent hope of cure, or so long as they are required for teaching purposes or clinical study. Those that are found hopelessly insane are at once sent on to the asylum, where careful custodial care is provided. At this clinic much attention is paid to baths, electricity, and hygienic measures. A well-equipped laboratory, with other facilities for study, affords the students of mental diseases excellent privileges. The report describes at length the visits of the commission to Munich and Giessen. At the former place was found the highest development of methods for the early treatment of insanity. Munich, the report says, is fortunate in having such great men as Professor Kraepelin and Professor Altzheimer associated in the management of its clinic. The labors of these men and their coworkers have enriched psychiatric science in a remarkable way and have elucidated many of the intricate problems that have arisen in the inauguration of the advances sought for in their work. The Munich clinic is a plain building in the shape of a large horseshoe. Here every facility was found for the care of the insane. The airy wards, thoroughly equipped laboratory, and well-arranged diet kitchens are specially referred to. Patients are kept in groups. The single room is done away with. Dr. Kraepelin does not believe in isolating patients. There are no "raving cells" at Munich. Every attention is paid to hygiene and the value of open-air treatment. Hydrotherapy is regarded as the *sine qua non* in treatment. The bathrooms were found most interesting, and the continuous baths are a prominent feature. Patients have frequently to remain in these baths for days or even weeks at a time, and it was noted how cheerful and bright even a bathroom can be made by careful attention to details. Every form of the modern douche apparatus was to be found. Electricity has been a disappointment in the treatment of mental diseases at Munich, but is used in some of the nervous cases. Nearly two-thirds of the patients are under constant and careful watch; only the convalescents are without night supervision. Twenty beds are reserved for the study of cases of unusual interest. Some of these, at the time of the visit of the commission, were occupied by cases of juvenile general paresis, a disease rarely seen in America. By this plan the patients,

likely to afford opportunity for much medical observation, are always available. When it is remembered that the staff of physicians is very large and that each case is looked into most carefully by the director and the assistants detailed to study it, and that each case is considered by the staff at one of the daily conferences, it can easily be understood that the individual patient is not lost sight of, but on the contrary receives every attention possible. Those who have been accustomed to the very general and perfunctory methods of care and examination, so commonly used in large asylums, are somewhat surprised at the elaborate details insisted on at Munich. The results fully testify the care and attention given to each individual case. Reactions of all kinds, word associations, memory, emotion, attention, fatigue, and a hundred other problems are attacked in original ways and results carefully preserved. There is a department for comparative study, where observations are made on monkeys, sheep, and rabbits. The experiments with the secretions of glands, sera, etc., are carried on under ideal conditions. There are rooms for psychic time measurement and for measurement of mental effort. Another room is reserved for the ergograph, which contains the writing scales, the apparatus for measuring involuntary and reflex movements, for the observation of the influence of mental processes on the pupils of the eyes, respiration, heart and pulse beat, etc. A sleeping room is specially arranged for the measurement of the depth of sleep. Scientific psychiatry was found by the commission to be more highly developed and its value better demonstrated at Munich than in any other of the many places visited. The report concludes with a recommendation that a psychiatric clinic be established at Toronto in affiliation with but separate from the new General Hospital in connection with the Provincial University. The Ontario Government has evidently given careful consideration to the report and the result has been just announced. The plans have been ordered and provision made for an institution with an equipment that will be modern in every respect. Ontario is likely to have a psychiatric clinic that will afford great advantages to the patients and at the same time enable medical students to acquire a knowledge of mental phenomena that must prove of the highest value. The action of the Ontario Government makes it probable that this province is to be the first in America to have an institution modeled after that of Kraepelin at Munich.

Progress of Medical Science.

New York Medical Journal, May 9, 1908.

A Clinical Study of General Anesthesia.—A. W. Blain, Jr., discusses the various agents used for general anesthesia and the methods of administering them. His general conclusions follow: (1) Chloroform is a dangerous drug, and should be totally eliminated from the armamentarium of the surgeon. (2) The so-called "morphine-hyoscine anesthesia" is unscientific and dangerous. (3) The comparative safety of ether and chloroform cannot be based on our present statistics, but one point is certain: chloroform is always dangerous, while ether given with a comparative amount of skill, is absolutely safe. (4) Nitrous oxide as a general anesthetic is occasionally of value, but its use is extremely limited, as good results can be obtained in these cases where gas is used by ether, if the latter is given with the same amount of skill as is necessary in giving the gas. (5) The anesthetist should pay more attention to his patient, and the surgeon give more consideration to the duties of the anesthetist. (6) The indications in a surgical operation are for ether, and the counterindications are nil.

The Prevalence of Infections in Childhood.—M. Ostheimer discusses the modes of infantile infection, referring to the ear, heart, gastroenteric tract, etc. Our duty is to prevent these infections as far as possible. As most of the infections are believed to enter the body through the lymphatic tissues of the nasopharynx, the most important thing is to keep the nose and mouth clean. This should be begun in infancy, and kept up regularly and continuously until later life. Nurses and mothers must learn to clean noses, mouths, and throats early and with regularity; and signs of the presence of any abnormality, such as adenoids, should necessitate an immediate visit to the specialist. All cervical enlargements are not by any means tuberculous. All infants should be vaccinated between six weeks and three months of age; and all children should be kept in the open air as much as possible during infancy and childhood. Besides, care must be taken in the preparation of all food for children, to prevent infecting the gastrointestinal tract. If any child should come in contact with an infectious disease, precautions should be taken at once, such as the injection of an immunizing dose of antitoxin in case of diphtheria. And the possibility of treating all infections by the opsonic method seems to offer better results than any one method thus far advanced.

Journal of the American Medical Association, May 9, 1908.

Grocco's Sign.—F. Smithies reports a case which exhibited the unusual findings of a well-marked area of paravertebral dullness in the posterior thorax to the left of the spine, associated with an abdominal encapsulated cystadenoma in no way intimately connected with the diaphragm or neighboring organs. A removal of some of the fluid from the abdominal cyst was accompanied with marked changes in the area of the triangle of dullness, and removal of the tumor promptly caused its disappearance. Just how the symptom was produced can only be conjectured, but Smithies suggests the rather marked upward displacement of the diaphragm, indicated by the position of the heart, liver, and spleen together with the absent Litten sign on both sides in this case, as the possible cause. The disappearance of the dullness to the left of the spine after removal of the tumor, rules out any secondary growths in the mediastinal tissues or the lung, and also speaks against the possibility of an unrecognized pleural effusion.

Psychotherapy.—Beatrice M. Hinkle considers the receptive condition induced by hypnosis a useful aid in many cases in which psychotherapy is employed. There are many patients who are persuadable in the waking state, and for these hypnosis is needless, but there are others who are not, and individual treatment must be used. That most persons are to a greater or less extent suggestible, she thinks requires no argument, but it is also true that persons vary greatly in their degree of suggestibility. She does not accept it as a fact that the Americans are less suggestible than Europeans, and she follows Bernheim and Liebault largely in her methods, also imitating Bramwell in giving the intelligent patient a preliminary explanation of what she expects, the probable sensations they will experience, and the fact that sleep, as generally understood, is not necessary in order to experience the benefit of the treatment. There are two types of patients: those who are afraid they will go to sleep and those who are afraid they will not. The former can generally be satisfied with a few explanations; the latter are more likely to be difficult, as they may have a fixed idea that sleep is essential, an idea which will counteract the physician's suggestions. In a few cases in which reasoning failed she has used hypnotic drugs to reinforce the verbal suggestion, but she advises against this as a rule. Three cases are reported, and she calls attention to the fact that in all three all possible physical means had been tried for a long time without result. One of the cases was of psychasthenia of a strongly obsessive type, another of spasm of the esophagus, and another of simple insomnia. The first two were treated by hypnotic suggestion, and the latter by suggestion without hypnosis, all with success in relieving the symptoms.

Intranasal Drainage of the Frontal Sinus.—E. F. Ingals describes his operation for intranasal drainage of the frontal sinus, which he has found one of the most satisfactory surgical procedures, and illustrates the instruments required. Twenty cases are reported. The operation leaves no scar, does not incapacitate the patient for more than a day or two, can be done under local anesthesia, and is practicable in from 95 to 98 per cent. of chronic cases and in a majority of acute cases, provided the anterior end of the middle turbinate has first been removed, which should be done in practically all cases of frontal sinusitis, suppurating or not, in order to secure free drainage. The use of the fluoroscope and *x*-ray negatives is advised as a matter of safety, taken with the probe in position to show the relation of the nasofrontal duct to surrounding parts. Coexisting suppuration of the antrum and ethmoidal cells also calls for free drainage. Too frequent washing out of the frontal sinus is not advisable, though it may be needed once daily for a time to prevent clogging of the tube with dried secretions. Peroxide of hydrogen is dangerous even with free drainage. Reinfection may follow severe colds in the head, but the suppuration soon ceases because of the permanent free drainage. This is secured, even if a cure is not effected. When improvement does not follow in a few weeks the sinus should be opened externally and cleaned out. Healing is as rapid apparently after the intranasal operation as after any other.

The Colon Bacillus in Water.—D. Rivas holds that the colon bacillus should be regarded as essentially a monotype bacillus and not as a group, and that the irregularities observed in cultures are not due to difficult types of the

organism, but to imperfect technique or to the conditions under which the culture is grown. In seeking for some constant reaction, he found that in each of a number of tests of about 0.25 c.c. of a forty-eight hour culture of various organisms on dextrose bouillon rapidly boiled in about 5 c.c. of a 10 per cent. solution of sodium hydrate, there will appear immediately after boiling a clear yellowish lemon color in the tubes of *B. coli communis;* while in others as indication of the absence of this organism, the solution will be clear, taking on a slight pinkish tinge after five or ten minutes. This reaction he calls Test 1. In another independent observation of cultures, also isolated from water, he found that if about 1 c.c. of a 10 per cent. solution of sodium hydrate and then about 1 c.c. of a 50 per cent. solution of sulphuric acid be added to the cultures, some tubes will remain colorless, while others will take on a purple reddish coloration either at once or within a few minutes. Closer study of this reaction showed this to be positive as soon as a growth was apparent in the medium, even after only four or three hours' incubation at 37° C. in neutral bouillon; and further investigation indicated that this purple coloration with sodium hydrate and sulphuric acid was characteristic of the *B. coli* cultures (Test 2). The appearance of the color reaction on the addition of acid is exactly the reverse of what occurs in Test 1, in which the color is discharged by acid and reserved by alkali. The color in Test 2 is not produced in the presence of sugar. He also finds a differentiating sign between *B. coli* and the microorganisms that closely resemble it, in the saccharolytic action of the latter and its absence in the former. He thinks the following conclusions justified: 1. The saccharolytic group, as its name implies, represents not only one, but different microorganisms found especially in water and characterized by their marked action in splitting dextrose. 2. The constant occurrence of this group in water may throw new light on the vital problems of the bacteriology of water. 3. The *B. coli* must not be confounded with the colon group, which Rivas designates as the saccharolytic group, and should be regarded as a type by itself, and not an indefinite group, as at present. Finally, the *B. coli,* in addition to the recognized characteristics, will be positive to Test 2, and negative to Test 1 and Test 3 (the exhaustion of sugar from a 1 per cent. dextrose bouillon medium after incubation for 48 hours at 37° C.), while the saccharolytic group, resembling in many ways the colon bacillus, will always be negative to Test 2 and positive to Tests 1 and 3.

Cystoscopy.—Bransford Lewis reviews the history of cystoscopy and gives the characteristics of the various types of instruments in use. He points out that neither the direct nor the indirect type can meet all the conditions met with, and while the former is the easiest to use under normal conditions, there are some abnormal ones, as when the ureter orifices are placed below a jutting prostate and out of the field of the direct view lens, where the indirect method is more appropriate. For operative cystoscopy, he finds air dilatation the best, while for cystoscopy and ureteral catheterization, water inflation is preferable, and is also the method used with the universal cystoscope devised by him, which is described and figured. From two years' experience with this instrument, he finds that it amply meets the following needs: (1) Direct, forward view; (2) right angle, lateral, view; (3) retrospective view; (4) double, synchronous catheterization of the ureters by the direct method; (5) the same by the indirect method, and (6), an irrigation feature so satisfactory that it is commonly used instead of a catheter for washing out the bladder preliminary to cystoscopy, and it allows irrigation to be carried on during the working of the operator.

The Lancet, May 2, 1908.

Treatment of Trachomatous Dacryocystitis.—The views of T. H. Butler are illustrated by clinical histories of four cases. He says he has rarely seen a case cured by the use of probes or styles. Such instruments, however delicately used, always injure the delicate mucosa and incurable organic strictures are the result. He prefers daily lavage with the Anel syringe, using normal saline or boric acid, and if any mucoid discharge is present, he leaves a few drops of a five per cent. protargol solution in the sac. In Jerusalem where the author practised for some time he found the disease referred to in the title very common and came to the conclusion that the sacs and canaliculi were also trachomatous. Such sacs are often of enormous size. If pus is present in the sac, it is better to dissect the latter out rather than run the risk of retrobulbar abscess. The sac may extend to the middle of the lower lid. Hemorrhage is apt to be very troublesome, but it can be to a certain extent avoided if it be borne in mind that it usually comes from the upper and nasal aspects of the sac. If the dissection be commenced from below and from the outside the sac can often be defined and freed from its attachments before the nasal side is attacked. If possible the angular vein should be located and the skin incision be made external to it; it should not be carried too high up or the branch which comes from the upper lid will be cut. Later in the operation when the sac has been defined the incision can, if necessary, be extended upwards.

Bromide of Potassium Poisoning.—The patient of A. S. Sparks was a woman of 35 years, in the last month of pregnancy. She suffered from facial neuralgia and was ordered the remedy in question, but on her own responsibility greatly increased the dose specified, consuming four and a half drams in less than twelve hours. When seen on the following day she was in a very drowsy and semi-comatose condition. She could be aroused by speaking loudly to her and answered—apparently without understanding the question—in a hesitating and tremulous manner, but was unable to express herself intelligently on account of aphasia. This was extremely well marked, and but for the history and the absence of other symptoms would have strongly suggested a cerebral lesion. Thus the medicine was referred to as soup, pastry, as cushion, and so on. She seemed conscious that she was using the wrong word and after several repetitions of it would relapse into silence. Left to herself she passed at once into a semi-comatose state. The respirations were deep, regular, and slightly stertorous, but not slower than normal. The pupils were normal in size and reacted well to light and to accommodation. The pulse was 76, quite regular, and of good volume and tension. The fetal heart could be heard quite plainly. The knee jerks were exaggerated, and although the muscular movements were slow and feeble the patient was able to leave her bed without assistance and totter about the room. There was no anesthesia of the skin or mucous membranes and she took food readily and with apparent appetite. These conditions continued without any change for two days. On the third day the aphasia had begun to disappear, and by the end of the fourth day the patient was practically well. She had no recollection of what had happened during the first two days. No treatment was adopted except the administration of five-minim doses of liquor strychninæ every four hours. Three weeks afterwards the patient gave birth to a vigorous male infant, the labor being rapid and uneventful.

Edema Limited to the Arms, Face, and Hands.—The case reported by J. M. Bennion was that of a man of 40 years who presented an edema of the regions named, for which no cause could be assigned. Heart, kidneys, and venous system all appeared normal. Neither temperature nor pulse showed any departure from a normal range. Angioneurotic edema was considered as a possible explanation, but the history and clinical features differed (in the author's judgment) in so many details from the usual descriptions of this disease that he did not feel at liberty to accept this hypothesis. [We are by no means convinced that the angioneurotic theory was not the correct one in this particular case. Too few cases of this affection are as yet on record to enable us to make a hard and fast symptom-complex of it.—Abstr.] In this particular instance mercury and the iodides appeared to be of distinct benefit. It is not stated whether or not the man had syphilis.

Multiple Abscesses of the Skin in a Nursling from Colon Bacilli.—B. Auché says that abscesses of the skin in infants are rarely caused by the colon bacillus. He records a unique case of a new-born infant who had multiple abscesses of the thighs, from the pus of which a pure culture of the colon bacillus was obtained. The infant soiled its clothes and in all probability the germs were derived from the discharges from the bowels, and entered through the unbroken skin. It seems very unlikely that they came by way of the circulation from the bowels.—*Journal de Médecine de Bordeaux.*

Disapproval of Koch's Suggestion.—Koch's proposal for destroying big game in order to exterminate the tsetse fly is being opposed in Germany. There is an association there for the preservation of African game, and a number of its members are experienced travelers and zoologists. Professor Matschie of the Royal Zoological Museum controverts Koch's statements as to the disappearance of the fly where gregarious game is no longer found, and denies that the fly was formerly prevalent all over South Africa. Dr. Sander of the Army Medical Corps, who has traveled over wide tracts where flies are numerous but there is no game, says small animals are just as likely to be intermediaries. He agrees with those who say that the clearance of dense underwood is the best way to deal with the fly.

Society Reports.

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA.

Annual Session, Held April 21, 22, 23, and 24, 1908, at Montgomery.

THE PRESIDENT, DR. SAMUEL WALLACE WELCH, OF TALLADEGA, IN THE CHAIR.

THE Association met in the Chamber of the House of Representatives at the Capitol. After prayer by Rev. E. E. Cobb, and addresses of welcome by Dr. Henry B. Wilkinson, on behalf of the Montgomery County Medical and Surgical Society; by Mr. C. P. McIntyre, on behalf of the City; by Hon. B. B. Comer, Governor of the State of Alabama, the President delivered his annual message.

Early Diagnosis of Carcinoma of the Uterus.—Dr. I. L. WATKINS of Montgomery said that while there were many things regarding the etiology and histology of cancer yet unknown, our present knowledge of the disease justified the opinion that in nearly all cases of malignant disease there was a time when it was possible to eradicate it completely. In the study of suspicious cases it was always important to get a very accurate history of the woman's habits and her condition from the time of her early menstruation. The question as to whether or not children had been born, although not conclusive, was important in estimating the value of symptoms. The conditions that would help most in the recognition of this lesion in its earliest stages were some deviations in the menstrual function or other uterine discharges, or a recurrence of a bloody discharge after the menopause. These changes might come in the form of an excess or as an intermenstrual discharge. In a woman beyond the age of thirty these symptoms should always be regarded with suspicion. Carcinoma of the uterus might be classified according to its location as carcinoma of the body or carcinoma of the cervix. Carcinoma of the cervix might be divided into two groups, as those arising on the vaginal portion, and those in the cervical canal. The squamous cell carcinoma of the cervix comprised nearly one-third of all cases of cancer of the uterus. This form was rarely found elsewhere than on the cervix. In a few instances it had been found in the body. The cylindrical-celled carcinoma of the cervical portion was infrequent as compared with the squamous celled, although it might arise from the mucous glands of the cervix, or from the surface epithelium. In cases where the cylindrical epithelium of the cervical canal extended beyond the external os, this would be expected. Carcinoma originating in the cervical canal was the most fatal form of cancer of the uterus, by reason of the greater blood and lymph supply of these parts. Cancer of the body was much less frequent and occurred later in life. Its progress was much slower, and the prognosis in operating on these cases was much more favorable.

Dr. M. B. CAMERON reported a case in which the uterus was enlarged to twice its normal size and the os almost entirely destroyed by the cancerous growth. The woman had no symptoms except pain and a profuse watery discharge.

Dr. JOHN R. HOWELL had never been able to make a diagnosis of cancer of the uterus any too early to operate and save the life of the patient.

The Diagnosis and Medical Treatment of Gastric Ulcer.—Dr. JAMES E. DEDMAN of Birmingham read a paper with this title in which he drew the following conclusions: "1. Gastric ulcer uncomplicated is a strictly medical disease. 2. There are complications which arise, such as hemorrhage, anemia, and persistent vomiting, which are still amenable to medical treatment. 3. As far as the treatment of the ulcer itself is concerned, absolute rest in bed for at least four weeks is imperative, and the Lenhartz diet is the best yet devised, being far superior to any form of rectal nourishment, because it readily affords rest to the stomach and at the same time supplies the patient with a highly nutritive food. 4. Drugs are of little value, so far as healing the ulcer is concerned. 5. Olive oil, on account of its caloric value and property of reducing hyperacidity, is of much value, but should not be given in cases where there is pyloric stenosis, as it retards the evacuation of the stomach contents. 6. The hemoglobin percentage should be carefully watched and some form of iron or arsenic administered to maintain it. 7. A careful dietetic régime should be enforced for practically one year, and no patient should be considered cured unless the cessation of gastric symptoms lasts for at least two years. 8. Uncured ulcers, quasicured ulcers, and even the cicatrices of healed ulcers offer a most inviting habitat for carcinoma later in life. 9. Persistent, unrelieved hemorrhage, painful perigastric adhesions, hyperplastic infiltrations resulting in pyloric stenosis, and perforations are phases of gastric ulcer that unquestionably belong to surgery."

The Surgical Treatment of Gastric and Duodenal Ulcers.—Dr. GASTON TORRANCE of Birmingham, after speaking of the frequency of ulcer, and discussing the etiology, pathology, symptoms, and treatment, reported a perforating gastric ulcer which he closed by suture, no-loop gastroenterostomy with recovery of the patient. He also reported a case of rupture of the gall-bladder, with severe hemorrhage from gastric ulcer. In this case there was also an obliterating appendicitis. Cholecystectomy was done, as well as Mayo's no-loop gastroenterostomy, resecting the ligament of Treitz, followed by appendectomy and recovery of the patient.

Dr. CHAS. W. STILES of Washington, D. C., referred to the recent work of Vineberg in the Pasteur Institute, in which it was shown that various gastric and intestinal parasites might act not only in wounding the intestine, but in carrying infective bacteria into the wounds. This work shows that we could have ulcers arising directly as the result of parasitic infection. In hookworm disease, a slight pressure in the epigastric region gave rise to almost instant resistance on the part of the patient. This pain could be followed down towards the right, but disappeared suddenly as the hand was passed towards the left.

Dr. DYER F. TALLEY of Birmingham said that a great many lives had been saved in recent years as a result of the technique developed in the treatment of stomach troubles surgically. Medical treatment should not be too long continued, when it seemed to do no good, especially in cases in which there were any urgent symptoms, such as the vomiting of blood or evidence of stenosis at the pylorus. Cases of gastric hemorrhage could be relieved by gastroenterostomy.

Dr. LEWIS C. MORRIS of Birmingham thought that gastric ulcer primarily in all cases was a medical condition, and became surgical usually only when there were complications, such as perforation, hemorrhage, stenosis, etc. He related an interesting case in which he operated two years ago for hour-glass contraction. In this case there was almost complete obstruction of the stomach. He did the exact analogue of Finney's pyloroplasty upon the hour-glass contraction. In recurring hemorrhages from gastric ulcer, drainage was justifiable.

Malaria in Children.—Drs. B. B. SIMMS and H. B. WARWICK of Talladega presented a joint paper on this subject in which they said that from their observations many persons carried in their blood the malarial parasite for months without active symptoms of malaria, for they had observed the plasmodia from time to time for a period of from five to six months during which no paroxysm occurred. The probable reason for the absence of malarial symptoms was that the number of parasites in the body was too small, since it was estimated that there must be from 200 to 300 millions in the human system to produce the paroxysm. The intervention of some other disease would cause the parasite to increase, thereby giving rise to malarial symptoms.

Dr. W. H. Sanders of Montgomery reported a case which he diagnosed as yellow fever, but which was doubted by several physicians because the woman's blood contained the malarial organism. His diagnosis of yellow fever, however, was subsequently verified by autopsy.

Dr. Chas. W. Stiles said that when the malarial parasites were found in the blood of patients for a long time, it was usually the female parasite that was found. The sexual parasite had passed through its evolution to the point where it could not reproduce any further, and it then evolved into the male and female forms. The female form of parasite contained a great deal of nutrient material. The male parasite was composed chiefly of nucleus, with very little nutrient material. Accordingly, the male parasite died out in the blood, but the female might last for a long time.

Dr. John P. Stewart spoke of the difficulty of differentiating the form of parasite found in the blood.

Pyuria in Women.—Dr. Henry D. Furniss of New York, in speaking of pyuria, said not all cases of purulent urine should be included. Only those in which pus was from the urinary tract were considered. Whenever pus was found in the urine, the first effort should be to locate its origin and determine the etiological factor. The majority of the inflammatory disorders of the genitourinary system recovered spontaneously after the removal of the cause. In the acute cases there was not much difficulty in locating the origin of the pus, for the local symptoms were sufficiently intense to point to the source of the trouble. When there was pus in the bladder urine, if the bladder was catheterized and carefully washed, and if a second specimen obtained by means of a catheter an hour later contained the same amount of pus as the first, the inference was clear that the pus was derived from a source outside of the bladder. With the aid of the cystoscope, one could determine the nature, the extent, and often the cause of the lesion with which he had to deal.

The Cause and Treatment of Summer Diarrhea of Infants.—Dr. W. W. Harper of Selma said that all bottle-fed babies should be put on pasteurized or sterilized fresh cow's milk, with a fat percentage at or below 3½. Should curds appear in the stools, we should use skim milk or buttermilk, returning as soon as possible to whole milk. Since living lactic acid bacilli were now procurable in tablet form, the pasteurized milk should be sown with them during the summer months, as these bacilli inhibited the germination of the pathogenic spores which were not killed by sterilizing. They kept the intestinal tract acid, which was an unhealthy media for all pathogenic germs. These lactic bacilli also reinforced the normal intestinal flora. Their good effect was felt for some time after their ingestion. The nurse and mother should be told to discontinue milk with the first loose, green, or foul stool, and to send for the doctor. One should give a dose of castor oil, or small doses of calomel, if the stomach was irritable. Boiled water should be given for the first twenty-four hours and rice or barley water for the second twenty-four. During the starvation period tablets of lactic bacilli should be administered. At the end of forty-eight to seventy-two hours, one should give buttermilk which had been pasteurized and then inoculated with lactic bacilli.

Treatment of Deep-Seated Gonorrheal Infections with Gonococcic Vaccines.—Dr. C. W. Shropshire of Birmingham reported three cases which he had treated by these vaccines, one of which was complicated with gonorrheal rheumatism and epididymitis. He did not use any internal medication in this case, neither was there any local treatment given, the vaccine being the only treatment. In the other cases he used locally irrigation of one per cent. solution of carbolic acid which he found very beneficial in keeping the urethra clean. There was no antiseptic or astringent used locally. He did not give any internal medication. He had found that the constipation which complicated the cases had been entirely relieved. He had never seen any bad effects from the injection of the vaccine with the exception of a slight pain at the site of the injection, due to the pressure of the fluid in the tissues. He had given it in doses of from 25 million killed bacteria to as much as 500 million killed bacteria. When these large doses were given, they should be made in several injections at the same time, and one should not try to force over two c.c. of vaccine, or 100 million killed bacteria in one injection. In two cases he was unable to find the gonococci in the discharge or shreds before he gave the vaccine, but after giving the vaccine he found the gonococci present, proving that if the gonococci were buried in the deeper tissues the vaccine would cause them to be eliminated. In discharging so-called well cases, it would be a good idea to give them a course of treatment with vaccine to see what reaction would be produced. He believed that we had a most valuable agent in these vaccines, but as yet his work had been too limited to give any positive expression on it.

Surgical Treatment of Exophthalmic Goiter.—Dr. Dyer F. Talley of Birmingham said there had been much discussion recently as to the best methods of treating exophthalmic goiter, and the internist had come to admit that in many cases surgical treatment was not only the best, but the only treatment which offered any hope of permanent relief. Good and scientific work was being done by Rogers and Beebe in obtaining a cytotoxic serum which had been used with benefit, but this serum was difficult to prepare and might not be of uniform strength always. Benefit had been derived from the use of the milk and blood from thyroidectomized animals, and many drugs had been recommended as useful, but the improvement due to these remedies was often temporary and lasted only during treatment. While the author's experience had not embraced many cases, the results in the few he had treated surgically had been so uniformly good that he regarded the operation as being attended with as much success and satisfaction as the removal of a diseased appendix. His results were 100 per cent. both as to recoveries and the relief of symptoms for which the operation was done. He attributed this success to the fact that the cases of exophthalmic goiter were seen early.

Acute Intestinal Obstruction.—Dr. Edward W. Peterson of New York discussed the treatment of this affection with especial reference to intussusception, and reported five cases in which he had operated, three of which were successful, and two fatal. He believed that with a better knowledge of the mechanics and with a more thorough understanding of the pathology of this disease, would come a realization of the futility in most instances of the palliative measures. The keynote of success would bear reiteration, namely, early diagnosis and prompt radical treatment.

Remarks on Psychotherapy.—Dr. Cabot Lull of Birmingham referred to some of the qualifications desirable in practitioners who aspire to succeed with psychotherapy, and among them he mentioned (1) a diagnostic ability sufficient to enable one to exclude all organic conditions and to make a reasonably positive diagnosis of nervousness. (2) A perfectly honest, fearless, and confident attitude toward the patient. (3) Some knowledge of human nature, a reasonable sympathy for suffering and mental instability, and lastly, tact. Special training in psychology was of great advantage, and this was within reach of nearly every general practitioner, in a country where schools and libraries were plentiful. This would enable one to obtain possession of certain valuable data in regard to the mental status of his patients. Whatever method was adopted, the great underlying principle was the same, namely, the application of psychic remedies to psychic diseases.

Mouth-Breathing.—Dr. R. C. Young of Anniston discussed this condition as a factor in producing deformities of the dental arches.

Dr. William Groce Harrison of Birmingham discussed

some of the causes and evils of mouth-breathing. In children adenoid vegetations in the nasopharynx were responsible for a large majority of the mouth-breathers, and no examination was so satisfactory as palpation with the forefinger rapidly passed back in the throat to one side, and then insinuated behind the soft palate. He laid stress on the etiological relationship between adenoids and middle-ear disease, saying they might produce only a catarrhal condition of the Eustachian tube or perchance a real occlusion of its inner orifice, and here one saw impaired hearing. Such a child was often scolded and rebuked for inattention, when in reality the ears were at fault.

Clinical Migraine Due to Unusual Refractive Errors.—Dr. Kenneth Bradford of Birmingham said that the prime object of his paper was to bring before the Association the important connection between organic defects in the eye and that complex functional disorder known as migraine. Continuous relief, for a period of seven months, from attacks of migraine of increasing frequency of a most aggravated type had, in the author's own case, followed immediately upon the detection and correction of a rather unusual refractive error. This error was detailed at length and the symptoms caused by it described.

Epidemic of Jaundice.—Dr. D. P. Dixon of Talladega described an epidemic of jaundice which occurred in Talladega during the summer of 1907. Of the two hundred cases reported, only twenty-five were in children, and eight of these were infants. The blood of the latter was examined and found to contain the malarial plasmodium. Thirty of the cases reported were among women; the other 145 occurred among men of previously good health. Fifty of the cases were among negroes. There were probably many more cases in this race that passed unnoticed. Almost all of the cases collected were among the well-fed, well-clothed, and well-housed classes. The cases among children were, with the exception of the babies, entirely among boys. Not a single girl was reported as having jaundice. These boys were about ten to twelve years of age, well developed and previously healthy lads. They were not so severely taxed as the adults in either the length of the attack or its intensity, although in the beginning the febrile stage was almost the same. The men affected continued at their usual occupations after the first two, three, or four days, or after the febrile stage had passed. There were a few cases during the winter months which were more severe and lasted for a longer time, because most of these patients were indoors most of the time on account of the very severe weather, and did not get sufficient fresh air and sunshine. In looking up the causes given by writers on this subject, the author found that very few mentioned malaria as the predisposing cause. Nothnagel put the different causes into three classes: (1) Atmospheric, telluric, or climatic causes; (2) Dietetic influences; (3) Infectious causes. The infectious class, according to the author's theory, played the leading part in the causation of this epidemic. The majority of the cases of jaundice appeared gradually with headache, malaise, drowsiness, abdominal pain, and cramps in the legs, and subsequently usually vomiting; moderate temperature (although the temperature in some went as high as 104°), chills and chilliness. Jaundice came on several days after the appearance of the first symptoms. Generally, by this time, the temperature was normal, and when there was no complication it did not rise again. In some the temperature at this time became subnormal and remained so for some time. The patients usually had a very slow pulse, with putty-colored stools, highly colored urine and sweats, and other symptoms seen in catarrhal jaundice. These cases usually lasted from two to eight weeks. There were very few complications. Two cases were taken with biliary colic, and after the acute symptoms had subsided, became jaundiced. Another was the case of a boy with pneumonia. In another a woman just before confinement became very much jaundiced. The child was still-born, and the mother died in a few days.

Symposium on Tuberculosis.—One evening was set aside for a discussion on tuberculosis. This meeting was well attended by the laity. Papers were read as follows: "A Serious Condition in Alabama and how to Meet it," by Dr. Glenn Andrews of Montgomery; "Social Aspects of the Tuberculosis Problem," by Dr. S. A. Knopf of New York; "The Layman's Duty in the Fight against Tuberculosis," by Hon. H. T. Reese of Selma; "The Duty of the Press in the Fight against Tuberculosis," by Major W. W. Screws of Montgomery.

Ethics of the Profession.—Dr. W. M. Wilkerson of Montgomery delivered the "Monitor's Address." He spoke on the Ethics of the Profession and urged both the public and the profession to strive for a better understanding of each other. He appealed to the people to aid the medical profession in all measures looking toward the improvement of mankind; to help them with their intelligence and to assist them with their means in all public enterprises for the physical betterment of the human race. To the members of the profession he said: "Give of your time and experience and training all that may be required for the still further uplifting and ennobling of our profession and for the good of our fellow-beings. Let no task be too difficult, no ideal so high that you do not strive to attain it. Thus let us press onward—doctors and people—hand in hand, toward that goal where sickness and suffering are unknown."

The Annual Oration.—Dr. Wellington P. McAdory of Birmingham delivered this address. Among other things he said that medicine to-day was nearly an exact science. This scientific position had not been reached in a year, a decade, or a century, but, founded upon nature, it had gradually developed, and each step in this development had been marked by the saving to the world of countless lives and suffering. The practice of this science was the art of handling disease, and these artists were ordinarily called practitioners of medicine. He reviewed at length, and portrayed in glowing terms the great progress that had been made in medicine and surgery in the last decade or so.

Officers.—*President*, Dr. B. L. Wyman, Birmingham; *Vice-President*, Dr. R. J. Reddens, Vernon; *Secretary*, Dr. J. N. Baker, Montgomery, reelected; *Treasurer*, Dr. Henry G. Perry, Greensboro, reelected.

Birmingham was selected as the place for holding the next annual meeting.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held April 3, 1908.

Dr. Charles H. Peck in the Chair.

Hernia of the Lung.—Dr. Edward Adams presented a patient with hernia of the lung, an unusually interesting condition because of its rarity. The first case of this nature was reported in 1499; from that date up to 1906 but 48 cases had been recorded. These 48 cases were classified as congenital (10 cases), spontaneous (8 cases), and traumatic (30 cases). During the Civil War there were recorded about 20,000 injuries to the chest wall, and among these were found but five cases of traumatic hernia of the lung. During the Russo-Japanese War not one case was reported. The patient Dr. Adams presented was a man, 22 years old, an iron-worker. His previous history was practically negative, having never been seriously ill until his present trouble. Two years ago, while at work in Buenos Aires as an iron-worker, when lifting a heavy piece of iron, he felt something give and soon noticed a bulging in the upper intercostal region. The day following he noticed, when bending forward, that he had severe pain in this region. He consulted a physician, but got no relief. The pain did not disappear for a period of eighteen months when he had the swelling which he now presented. Six months ago he noticed that the pain was

located somewhat lower down. He came under Dr. Adams' observation one month ago. On inspection nothing was to be seen except a slight bulging in the second and third intercostal spaces, near the median line on the right side. When he bent forward the swelling became more marked than when he was in the erect position. Upon palpation the swelling was found to be soft and elastic to the touch. It was not adherent to the skin. On percussion it was tympanitic. On auscultation there was a slight exaggeration of the breath sounds and the vocal fremitus was increased. No râles were to be heard except posteriorly, and these were due to a pleurisy. The differential diagnosis was to be made from aneurysm, empyema, abscess of the lung, angioma, lipoma, cyst, cold abscess, etc. When one pressed deeply over the swelling, it elicited some pain. The *x*-ray picture showed nothing. He aspirated the swelling but got absolutely nothing. The treatment was a pad applied over the hernia; this was retained in place and if no improvement followed in time, operation would be resorted to, incising directly over the swelling and suturing the muscles down over the opening with silver wire.

Dr. William Henry Luckett did not believe this to be a case of hernia of the lung, for it did not feel to him what his conception of the feel of a lung would be in and out under the finger through the opening. Again the man's chest was not one that showed a normal muscular development; what development there was of the chest was due to his work. He had sloping shoulders and a narrow chest. The man could not produce this tumefaction while in the standing position; if this was a hernia he could produce it in whatever position he assumed. It seemed more like the swelling contained fluid, forced out by the expansion of the lung behind it. It did not appear, or come out, as one would expect a lung. It did not crepitate under the finger or on auscultation. He could not understand why, if it was a hernia, the doctor had gotten nothing when he aspirated the swelling; he certainly should have gotten air. The case impressed him as being some peculiar sacculation possibly containing fluid. There was a small opening, and a sac inside as well as outside the chest wall. It had a wallet-purse shape, and gave no fluctuation whatever.

Dr. H. A. Haubold agreed with Dr. Luckett that this was not a hernia of the lung. It was too near the median line. If the patient made a sudden exertion, or took a deep inspiration, it would drive the lung towards the diaphragm where there was room for it to go. He thought it might be a branchiogenetic cyst.

Dr. A. V. Moschcowitz believed it was a hernia of the lung. He had had occasion to examine it carefully some time ago and believed in the diagnosis made. He explained it on the ground of the pathological or surgical anatomy of the lung. The protrusion came out at a point where the artery perforated. He had seen one other case of hernia of the lung of traumatic origin and that man presented similar symptoms.

Dr. Willy Meyer saw this patient several weeks ago and he believed in Dr. Adams' diagnosis. The man got his hernia by lifting a heavy weight. The percussion sounds belonged to the lung, and were easily made out. With increased intrathoracic pressure there was an increase in the size of the hernia.

Dr. Charles A. Elsberg called attention to the fact that when the patient inspired the skin over the tumor sank in, and when he expired it bulged out. He thought it was probably a hernia of the pleura that contained no lung, the sac being formed by the parietal pleura.

Dr. Moschocowitz said that assuming that Dr. Elsberg was correct, the hernial sac being composed of pleura, what was in it?

Dr. Elsberg replied that it might contain some fluid from the pleura.

Dr. Adams said that the patient he presented, although he had been an iron-worker, had not been able to work during the past year and one could not expect to find well developed muscles of the chest. With regard to its being a cyst, symptoms did not point to such a formation. The physical signs pointed solely to the presence of lung, and nothing else but lung.

Perforated Gastric Ulcer; Gastroenterostomy.—Dr. William C. Lusk presented a patient who came to Bellevue Hospital February 19. For the previous two weeks he had been having pain after eating, the pain lasting fifteen minutes and then disappearing. On February 19, about 9 A.M., he was seized with sudden pain in the abdomen, which was followed by vomiting. He vomited four times. Dr. Lusk saw him about 5 P.M. and he found the abdomen rigid and tender, particularly over the region of the appendix, and to a less degree over the pit of the stomach. His pulse was 90, temperature 101.8°, and respirations were 36. The number of leucocytes was 17,000, and the polymorphonuclears 90 per cent. An operation was advised but at first refused. The pain increased a great deal and then the man consented to operation. Fourteen hours following the onset of the attack operation was performed. The pulse at that time was 86. The incision was made over the site of the appendix, and a large quantity of pus gushed out. There was probably as much as a pint and a half altogether in the peritoneal cavity. The pelvis was full of pus, and the lower coils of the small intestines beneath the omentum were bathed in pus. A considerable quantity of pus came down from above in front of the omentum. The appendix was not found to be diseased and was left intact. A second incision was then made above and a small perforation about 1 cm. in diameter was revealed in the anterior wall of the stomach at its upper portion near the pylorus. There were adhesions around the gall-bladder which was adherent over the entire front of the pylorus. The perforation was situated close to the line of adhesion of the stomach to the gall-bladder. The peripheral induration was about one-half an inch. The perforation was closed with three rows of chromic sutures uniting the gall-bladder to the stomach and finally drawing a piece of fat from above and one from below, together over the line of union. A posterior gastroenterostomy was done by suture, leaving no slack in the loop of jejunum. No irrigation was employed. There was little sponging, and the bulk of the pus was taken up by large gauze pads tucked down into the pelvis. A drain was introduced through each wound, one into the pelvis, the other down to the site of the ulcer. When the patient was next seen, eight hours after the operation, he was complacently paring his finger nails. The temperature dropped promptly to normal and the patient made an uninterrupted recovery. Dr. Lusk then called the attention of the Section to the dog experiments by Fibich who, after producing gastric ulcers artificially by ligating the arterial supply to a certain area, denuded the part of its mucous membrane and cauterized it with nitric acid; he found that with no gastroenterostomy such an ulcer remained unhealed for as long a period as three weeks; but when a gastroenterostomy was performed at various intervals of time following the production of the ulcer, healing of the ulcer in each instance occurred within three or four days. The pulse in the case reported was no indication of the patient's real condition. The diagnosis was practically made on the physical signs together with corroborative blood findings.

A Series of Cases Illustrating the Result of Bier's Hyperemic Treatment.—Dr. Willy Meyer presented a series of cases. He said he was interested in Bier's hyperemic treatment and believed it to be the best way to achieve certain results. He thought it was better to show patients than to talk about results of this method of treatment. As was well known Bier started his artificial hyperemia in the treatment of surgical tuberculosis. He had read that pathologists had seen that patients with

chronic hyperemia of the lungs due to valvular heart disease, would not be stricken with tuberculosis. If tuberculosis was present, and disease of the heart which produced the hyperemia had appeared later, one would find scars at the apices. On the other hand, a patient with stenosis of the pulmonary artery was apt to be stricken with tuberculosis. On the basis of this, Bier started his surgical investigations in 1892 and he and his followers had since shown results. It was now known that artificial hyperemia was a powerful agent, rich in therapeutic resources. Formerly physicians worked with remedies on a chemical basis; now, in addition, with one on a physical one: Bier's footsteps were now followed here as well as abroad. The profession was now only beginning to understand its value. He felt sure that as physicians knew more and more about it they would appreciate its value more and more. The point in the Bier hyperemic treatment was, instead of fighting the symptoms of inflammation, to increase them by means of an increased amount of blood. To accomplish this they applied to the extremities an elastic bandage, to the head an elastic band, to the shoulders or testicles an elastic tube, etc. Over other inflamed regions of the body a glass apparatus was applied, which proved as useful as the elastic bands.

Eleven patients were presented by Dr. Meyer. The first was a man with a carbuncle of the neck. The patient came to the hospital twelve days after the onset complaining of pain in the upper forearm, but was discharged because his symptoms were not marked. After a few days there appeared a pronounced edema, tenderness, and pain about the caput radii, evidently a deep seated metastatic phlegmon or periostitis. The patient was readmitted and Dr. Meyer applied Bier's treatment, increasing the amount of blood to the part. This was followed by an entire disappearance of the inflammatory symptoms. In from three to five days the temperature became normal. Whereas in the beginning of the treatment there was great tenderness, and inability to pronate or supinate the forearm, he now had full motion and was able to work. The treatment was applied eleven out of twelve hours. He had simply been cured by means of the Bier treatment. The second patient presented was a young woman with an abscess of the neck, due to subacute inflammation of the lymphatic glands posteriorly. She came under his care only four days ago with a large abscess over the occiput, filling the posterior space behind the sternocleidomastoid muscle. A very small incision was made and the Bier suction treatment applied. This abscess under old methods of treatment would have taken four or five weeks to cure; to-day it was discharging only serous fluid under suction. It was a streptococcus infection. The third patient he presented was a woman with a mastitis, not a very bad one such as a phlegmon of the breast. All would agree that these patients with mastitis, before the incision was made, passed sleepless nights, and they knew how they had been fighting the advice of midwives who wanted to apply hot poultices, when the physician wanted to apply ice-bags. The application of the heat was better, because more blood was carried to the breast. According to the old treatment of mastitis, the incisions were large and radiating, and, in many instances, the function of the breast and its shape were destroyed. After Bier's suction treatment these patients passed restful nights, required only a small incision, and had little pain. This patient was now almost cured. The fourth patient presented was a man with an injury to the sheath of the flexor tendon of the thumb. This had been treated for twelve days before he came to the hospital, having had many incisions made. There was then a tremendous suppuration in the large synovial sac, involving the ring and small fingers. He did not make *one* long incision but many short ones, preserving the transverse ligaments of the fingers. In eight days the temperature fell to normal. So far no pieces of tendon had come away. Whenever a new abscess appeared it was at once incised. This patient, under the old methods of treatment, would have had his fingers in volar flexion, contracted, and to overcome this would have required many weeks. This man would probably get a good and useful hand. To produce absorption of the edema, so often presented after cicatrization, nothing was better than hot air in producing arterial hyperemia. The fifth patient he presented was a colleague who received a compound dislocation of the thumb at the distal joint. Twelve days later there was much joint suppuration and periostitis of both phalanges. No drainage of the joint was made. He enlarged the compound wound and cut down straight through to the bone, slitting the periosteum of both phalanges, and placed him on Bier's treatment, with the result that the patient now had a useful thumb. He knew of no other treatment that could have accomplished such a result. The treatment was applied ten out of twelve hours. The functional result was excellent. The sixth patient presented was a boy who had a sinus of the inferior maxilla due to chronic osteomyelitis, which discharged pus. His teeth had been extracted. It was proposed to chisel away the bone. The mother however was opposed to any operative interference. Under the application of the Bier suction treatment, faithfully done by the mother at her home, the fistula, which led through the bone into the mouth, had entirely closed. The seventh patient presented was a boy who had sustained a fracture at the base of the skull from falling down stairs. He had all the symptoms of fracture of the base of the skull. Six hours afterwards he was admitted to the hospital and the Bier method of treatment applied with the neck band. He made a rapid recovery; Dr. Meyer had never seen such rapid progress made in such a case as was made under this treatment which prevented the occurrence of meningitis. Of course, such observation needed further corroboration. The eighth patient presented was a woman, 63 years old. Two years ago she had a severe pneumonia with endocarditis. Dr. Meyer was called to see her when she had an acute beginning gangrene of the arm, due to an embolus of the brachial artery. These were very serious troubles. The hot-air treatment was employed. Increasing the temperature of the part in this way, causing an arterial hyperemia, did a great deal of good. She did not lose even a piece of skin and the collateral circulation appeared quickly. The ninth patient presented was a man who had had an ankylosed wrist of gonorrheal origin. Dr. Meyer saw the patient some time after the gonorrheal invasion of the wrist joint; the joint was stiff and painful. Surgeons, who did not use hyperemic treatment, would have ordered a splint and ice-bag, later baths, massage, etc. In this case an elastic bandage was applied around the arm eleven out of twelve hours, and the patient now had a movable joint and, if the treatment was continued, he would get still better function of the hand than he now had. The tenth patient presented, 46 years old, had had tuberculosis of the wrist, with all the pathognomonic symptoms. The result of excision in these older patients was not good, so far as function was concerned. This was a feeble man and he thought it best to apply the elastic bandage. (This was in the fall of 1903.) A cold abscess appeared later, which was aspirated, and the cavity injected with iodoform emulsion. Bier's treatment had been used by the man only four months steadily. Nevertheless the tuberculosis of the wrist was healed. This was an extraordinary case; cures of this kind usually took much longer, about one year. The eleventh patient presented had suppurating tuberculosis of the second testicle after castration on the other side. He was much better after the application of the Bier method of treatment. Dr. Meyer said doctors had no right promptly to advise castration for a tuberculous epididymitis on one side, if the other testicle was removed. Bier's treatment should be applied before removing a testicle was thought of.

Dr. James Morley Hitzrot said that he had employed this method at the dispensary for two and a half years, first employing it in tuberculous cases and since in the acute infections. He had usually gotten bad results in streptococcic infections of the superficial variety.

Dr. Lyle had been very successful with this treatment after using it for five years in the hospital. What Hunter said to Jenner in regard to vaccination could be applied here, "Do not think, but try."

Dr. Meyer believed that longer cuts should be made in infections of the tendinous sheaths, in osteomyelitis, etc., and then the Bier treatment applied. The incisions had to take care of the pus, artificial hyperemia of the inflammation. This was a new and powerful agent in therapeutics on a physical basis. Dr. Meyer then demonstrated the Kuhn mask for producing artificial hyperemia of the lungs.

Pneumothorax and Posture; the Importance of the Abdominal Posture in Operations on the Pleura and Lungs.—Dr. Charles A. Elsberg read this paper. (See page 846.)

Arthritis Deformans of the Hip; a Preliminary Report of a New Operation.—Dr. Fred H. Albee read this paper. He said that arthritis deformans of the hip was a chronic joint disease, characterized by a slow and gradual onset, absence of fever, local pain, muscular spasm, wasting, stiffness, disability, and deformity, but never presenting any tendency to suppuration. It had been known by many names, the most common of which was coxitis senilis, which implied that it was a disease of old age only, therefore, misleading and not appropriate. This affection had been ascribed to gout or rheumatism, to exposure to traumatism, but the writer was convinced that old age played a small part in the etiology. Blodgett reported in 1903 ten cases in which the onset of the disease occurred, in two under 30 years of age, in two between 30 and 40, in three between 40 and 50, and in three between 50 and 60. The point of origin of arthritis deformans, whether in the synovial membrane, the cartilage or the bone, was still a disputed point, although recent authorities were inclined to consider it among the arthropathies of spinal-cord origin similar to the Charcot joint associated with syringomelia and tabes. The joint fluid was increased in the early stages, but diminished later. Changes in the cartilage were noted early, the cells multiplied, and the hyaline substance degenerated, rendering the cartilage friable. It took on a yellowish appearance and the articular surfaces became thinned in the center and finally disappeared entirely. The head of the bone thus laid bare became smooth, polished, and eburnated. Marginal osteophytes appeared, sometimes perforated the synovial membrane, became pedunculated or even detached, and appeared as loose bodies in the joint. The acetabulum was deepened and the motions of the hip were much limited and tended toward that of a cylindrical joint on account of its anatomical change. The head wore away more and more and the marginal outgrowths progressed toward the trochanter. The neck hypertrophied and might bend, thus becoming more at a right angle with the shaft. There was a consequent shortening of the leg. As the adductors and flexors of the thigh were not only more powerful than their antagonists, the abductors and extensors, but exerted their force at a better mechanical advantage, there was only one result, if not prevented by treatment, and that was increasing adduction and flexion with permanent contracture or ankylosis. Dr. Albee then considered the symptoms of arthritis deformans of the hip, and the treatment, local and general, that had been employed. He then detailed a case of interest, a man, 59 years old, who had arthritis deformans of the right hip. The brace treatment was recommended and explained to the patient, but it was refused on the ground that it was too long and uncertain for a working man. Eleven months ago the patient applied to him with the inquiry if something could not be done for him. He was a policeman. Three years ago he first began to notice pain and stiffness in the right thigh and hip. Twenty-two months ago he was again examined by a physician who told him his right hip was dislocated and the right leg was shorter by two inches than the left. The symptoms became so severe that he submitted to operation, the nature of which could not be ascertained. Symptoms of lameness, stiffness, and pain had continued unabated ever since. The physical examination showed a powerfully built man, weighing 185 pounds, pale and worn, walking with a marked limp. The leg was much atrophied and markedly flexed and adducted, and motion was entirely absent except for slight flexion. Any attempts at passive motion resulted in pain. There was some muscular spasm. A skiagraph showed the head of the femur much worn away and flattened, with many bony outgrowths about the rim of the acetabulum. Because of the disintegration of the joint, the marked adduction and flexion with firm contractures, the progressive bony ankylosis, with the limb in faulty position, in so large and powerful a man, it seemed best to aim for immediate firm ankylosis, with the limb in a position of slight overcorrection of the deformity to compensate for the existing practical shortening. The hip joint was reached by an anterior incision five inches long, through skin and subcutaneous tissues, starting just below and inside the anterior superior spine of the ilium and extending downward along the inner border of the sartorius muscle which was retracted outward. The muscles and deep structures were separated by blunt dissection and the iliacus and rectus femoris were retracted inward. A large part of the ring of oestophytes about the rim of the acetabulum were turned inward with the soft tissues adherent, because it was thought wise to leave as many of them as feasible on acount of their bone-formation possibilities. With the head of the bone in situ about one-half of its upper hemisphere was removed through a plane at right angles to the long axis of the shaft of the femur. The acetabulum was then transformed into a flat-surfaced roof, against which the fresh surface of the head was finally brought into firm contact by abduction of the thigh. An open tenotomy of some tendons and muscles was found necessary before the leg could be brought into proper position. The plain surfaces of the head and acetabulum were brought together by simply abducting the thigh, and the capsule and soft tissues were then sutured. The operation had the following advantages: (1) It assured bony union, brought two large bony surfaces together for ankylosis, and held them firmly by the mere correction of the deformity. (2) It produced a minimum amount of bony shortening. The patient made an uneventful recovery and walked at the end of nine weeks without cane or crutch. He went back to his work as patrolman in four months and had never lost a day on account of his hip since. Dr. Albee had done this operation five times, all patients having advanced arthritis deformans of the hip. The shock of operation was very slight in every case, and all had made excellent recoveries and all had splendid functional results.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Minnesota State Medical Examing Board.

January, 1908.

ANATOMY AND HISTOLOGY.

1. Give the histology of a nerve trunk.
2. Describe the origin, relations and distribution of the fifth pair of cranial nerves.
3. Describe the cardiac valves. Between what points on the surface are they situated?
4. Describe the fourth ventricle.
5. Describe the portal vein.
6. Describe the thoracic duct.
7. Describe the azygos veins.

8. Give names and general description of the flexor muscles of the forearm.
9. Describe the pronator muscles.
10. Describe the supinator muscles.

PHYSIOLOGY.

1. Describe the human blood, giving reaction, specific gravity, constituents, etc.
2. Describe the secretion of urine.
3. What is the composition, reaction, and function of the pancreatic juice?
4. Describe the pulmonary circulation and the changes which are produced in the blood by aeration.
5. Describe the secretion of milk, and give the composition of human milk and cow's milk.
6. What are the functions of the skin?
7. Describe the normal heart sounds, give probable reasons for same, and tell where best heard?
8. Enumerate the functions of the spinal cord and its special centers.
9. Explain the physiology of visual accommodation to light and distance.
10. Give the physiology of menstruation.

Note—Credits will be given for all diagrams used in explaining questions.

MATERIA MEDICA AND TOXICOLOGY.

1. Write a model prescription for acute bronchitis, giving reasons for use of each ingredient and explaining each step in the writing of the prescription.
2. (a) What are the symptoms of chronic morphine poisoning? (b) What are the symptoms caused by abrupt withdrawal of the drug? (c) What is the treatment of acute poisoning?
3. (a) From what is acetanilid derived? (b) Explain its effects. (c) Give treatment of acute poisoning.
4. (a) From what is hyoscine derived? (b) What is the dose of hydrobromide? Its physiological effects? Some of its therapeutic uses?
5. Give rule for dosage for children according to age.
6. Give in parallel columns, the diagnosis between acute ptomaine poisoning and acute poisoning by arsenic?
7. Explain the action of chloroform as an anesthetic and tell how you would administer it and with what precautions.
8. What are the adult doses of and physiological antidotes for Tr. strophanthus, apomorphine (by hypodermic), carbolic acid, and chloral hydrate?
9. Explain the action on the bowels of opium, thymol, and bismuth subnitrate.
10. (a) What is the U. S. Pharmacopœia? (b) What is the National Formulary? (c) What is a fluid extract? (d) What is a chemical antidote?

CHEMISTRY AND URANALYSIS.

1. Define specific gravity; an acid; a base; allotropy; synthesis.
2. (a) Give law of definite proportions. (b) Give tests for iodine, silver, mercury.
3. Give a test for sewage contamination of drinking water. What do you consider a good drinking water?
4. Give fully the clinical significance of alubuminuria. Name the urinary casts and the commonly associated kidney lesions.
5. Give a test for indican. What is its clinical significance?
6. What is the diazo-reaction of Ehrlich and its significance?
7. How do you estimate urea?
8. What is the diagnostic value of tests for organic acids found in stomach contents? Describe a test for lactic acid.
9. What is the normal reaction of cow's milk? Why is it important to determine the reaction before sterilization?
10. Give test for blood. What is the freezing point for blood?

BACTERIOLOGY.

1. In what diseases have the specific microorganisms been recovered from the blood?
2. (a) Give fully the technique of finding the tubercle bacillus in suspected sputum. (b) What is Gram's and Weigert's method of staining? Illustrate its differential value.
3. Describe the preparation of diphtheria antitoxin. How is its action explained?
4. Describe the morphology of the microorganisms causing tetanus, gonorrhea, spinal meningitis, relapsing fever. Give mode of infection.
5. (a) What is the present status of the bacteriology of scarlet fever, rheumatism, and syphilis? (b) Give morphology and cultural properties of the *Diplococcus pneumoniæ*.

PRACTICE OF MEDICINE.

1. Describe lichen planus.
2. Describe a typical case of acute miliary tuberculosis.
3. Define bronchiectasis? Give symptoms and physical signs.
4. Nephrolithiasis. Give symptoms fully. Differentiate from appendicitis.
5. Describe the usual symptoms in the secondary stage of syphilis.
6. Differentiate in parallel columns, gastric ulcer and gastralgia.
7. Hereditary ataxia (Friedreich's disease): Describe symptoms and usual course of disease.
8. Differentiate articular rheumatism and arthritis deformans.
9. Define arteriosclerosis. Give usual causes. With what other diseases is it frequently associated?
10. Hematuria: Give principal causes. How would you determine source of hemorrhage?

SURGERY.

1. (a) Give the surgical definition of "tumor." (b) Classify tumors histologically.
2. (a) Define "wound." (b) Give classification.
3. Give in detail treatment of a punctured wound involving the deep palmar arch.
4. State fully how you would treat a blank cartridge wound of the palm of the hand, and give reason for your plan of treatment.
5. Describe step by step the operation of ligature of the ulnar artery at the wrist, giving linear and muscular guides.
6. (a) Define "fracture." (b) Give general classification of fractures.
7. Pathology, symptoms, and treatment of Pott's fracture.
8. Tracheotomy: Describe operation and after treatment.
9. How would you reach a diagnosis in a case of suspected coxitis?
10. Describe fully the treatment of strangulated inguinal hernia.

GYNECOLOGY.

1. Give differential diagnosis between ovarian cyst and extrauterine pregnancy.
2. Describe your method of repairing a lacerated cervix.
3. Describe inversion of the uterus, giving symptoms, diagnosis, and treatment.
4. Describe uterine polypus, give symptoms, diagnosis, and treatment.
5. (a) Give two indications for hysterectomy. (b) Your reasons for chosing vaginal or abdominal route.

DISEASES OF CHILDREN.

1. Give etiology, pathology, and diagnosis of rachitis.
2. Give symptoms of pertussis and differentiate it from acute bronchitis.
3. What alterations would you make in modified milk to overcome constipation.
4. Give briefly differential diagnosis between epilepsy, convulsions due to intestinal irritation, and uremic convulsions.
5. Give symptoms and treatment of dilatation of the stomach.

OBSTETRICS.

1. Describe fully your management of a case of face presentation.
2. Describe your management of a case of neglected transverse presentation where version fails.
3. In contracted and deformed pelvis, enumerate the different methods to be considered in delivery of child and state your reasons for each.
4. Describe fully your management of prolapse of cord.
5. Give your treatment of different grades of asphyxia in the new born.
6. Describe symptoms and treatment of ectopic pregnancy.
7. Describe caput succadaneum and cephalhematoma and give causes of each.
8. Give indications for podalic version.
9. Give your treatment of puerperal septicemia.
10. Give etiology and treatment of mastitis.

PATHOLOGY.

1. Give pathology of anemia, pernicious anemia, and chlorosis.
2. Describe changes in chronic alcoholism.

3. Pathology of carcinoma of liver.
4. Give pathological findings in typhoid fever.
5. Describe pathological changes in nephritis.

EYE AND EAR.

1. Differentiate glaucoma and iritis.
2. Describe choked disc and in what diseases we may expect to find it.
3. Define myopia, hypermetropia, astigmatism.
4. How would you treat a discharging ear?
5. Describe otitis media.

MEDICAL JURISPRUDENCE.

1. Describe phenomena and signs of death.
2. How would you distinguish human bood from that of other sources?
3. Describe death by hanging; how would you determine whether penal or suicidal, ante- or post-mortem?
4. What is life insurance and upon what does the premium rate depend?
5. What is the normal duration of pregnancy and what are the most important signs of delivery in the living and in the dead?

PREVENTIVE MEDICINE.

1. What quarantine measures are necessary in a case of (a) smallpox, (b) diphtheria, (c) scarlet fever?
2. Describe in detail how you would manage cases of typhoid for the protection of the community.
3. How are the following diseases transmitted: (a) Diphtheria, (b) yellow fever, (c) typhoid fever?
4. How long would you keep in quarantine a case of (a) scarlet fever, (b) diphtheria, (c) smallpox?
5. Give a simple, practical method of ventilating a dwelling in this climate during the winter season.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Minnesota State Medical Examining Board.

January, 1908.

ANATOMY AND HISTOLOGY.

3. *Relation of the cardiac valves to the chest wall*: "The aortic valves lie behind the third intercostal space, close to the left side of the sternum. The pulmonary valves lie in front of the aortic behind the junction of the third rib, on the left side, with the sternum. The tricuspid valves lie behind the middle of the sternum, about the level of the fourth costal cartilage. The mitral valves lie behind the third intercostal space, about one inch to the left of the sternum." (Holden.)

PHYSIOLOGY.

1. *The physical properties of blood*: Fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100 degrees F.).

The *constituents of the blood* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

The *red blood corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin.

Their *function* is to carry oxygen from the lungs to the tissues.

The *white blood cells* are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

There are also *platelets*, which are very small, colorless, irregular shaped bodies; they are about one-fourth the diameter of a red corpuscle. Their function is not determined; it is possible that they take some part in the coagulation of the blood. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood.

Plasm conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

3. Pancreatic Juice: *Composition*: Water and solids, the latter consisting of three enzymes (trypsin, amylopsin, and steapsin), proteid material, soap, fats, lecithin, and inorganic salts (carbonate of sodium, chloride of sodium, and phosphates of sodium, calcium, and magnesium).

The *reaction* is alkaline, due to sodium carbonate.

The *functions*: (1) It changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; (2) it converts starch into maltose; (3) it emulsifies and saponifies fats, and (4) it causes milk to curdle.

6. *The functions of the skin* are: Protection, sense of touch, excretion, regulation of body temperature, absorption, and respiration.

7. The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) the vibration and closure of the auriculo-ventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall.

The *second* sound is caused by the vibration due to the closure of the semilunar valves.

The first sound is heard best at the apex; the second sound is heard best at the base.

8. The *functions of the spinal cord* are: (1) The conduction of impulses and impressions; (2) as a series of nerve centers.

The *special centers in the spinal cord* are the centers for (1) cilio spinal center, (2) for sphincter of bladder, (3) for sphincter of rectum, (4) for erection, (5) for contraction of uterus, (6) for maintaining tonus of muscles.

9. "*Mechanism of Accommodation.*—The lens is an elastic structure, and when released from the flattening influence of its suspensory ligament tends to assume a spherical shape. During accommodation the ciliary muscle (especially the circular fibers) contracts, drawing forward the choroid and relaxing the suspensory ligament; this diminishes the tension of the lens capsule and allows the inherent elasticity of the lens to increase its convexity. The change in curvature affects chiefly the anterior surface of the lens. This is Helmholtz's theory and the one usually accepted. Lately Tscherning has advanced a different theory; he maintains that the ciliary muscle increases the tension of the suspensory ligament during contraction and that this causes peripheral flattening of the lens with bulging anteriorly at its center. The act of accommodation is accompanied by contraction of the pupil, and (in binocular vision) by convergence of the visual lines." (May's *Diseases of the Eye.*)

MATERIA MEDICA AND TOXICOLOGY.

2. (*a*) *Symptoms of chronic morphine poisoning*: Great mental depression, irresolution, loss of self-control, great longing for the drug, nausea, insomnia, anxiety, melancholia, feeble pulse, diarrhea, muscular cramps, and "lying."

(*b*) *Symptoms caused by abrupt withdrawal of the drug*: Diarrhea, vomiting, insomnia.

(*c*) *Treatment of acute morphine poisoning*: "Wash out the stomach with a dilute solution of potassium permanganate, leaving about 500 c.c. in the stomach; and maintain the respiration. In the first or second stage the 'ambulatory treatment' should be adopted to prevent, if possible, the establishment of the third stage. If this stage develop, the main reliance is to be placed in maintaining the respiration by artificial methods, until the poison has been eliminated. Strong coffee, or caffein, by the mouth or rectum, are of benefit. The same cannot be said of atropin. The urine should be drawn by the catheter." (Witthaus' *Essentials of Chemistry.*)

3. (*a*) Acetanilid is derived from aniline, by the action on it of glacial acetic acid.

(*b*) The continuous use of acetanilid may give rise to decrease in the number of red blood cells; the face is livid and covered with perspiration, the respirations become slow and shallow, the pulse soft, compressible, and gradually weaker.

(*c*) Treatment: Stop further administration of the drug, then support the patient by stimulants, warmth and strychnine.

4. (*a*) Hyoscine is derived from Hyoscyamus.

(*b*) The dose of the hydrobromide is gr. 1/128.

Its *physiological effects*: it quiets the cerebrum and produces sleep; it may also produce delirium; it also causes loss of reflex action.

It is *used* as a hypnotic, in acute mania, insomnia, hysteria; also in morphine and alcohol habit; it is also used as a sedative mydriatic in plastic iritis.

5. Let x = the age of a patient; then $\frac{x}{x+12}$ = the fraction of the adult dose which the patient should receive. Thus, a patient of four years old should receive $\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}$ of an adult dose.

6. The following table, from Gould and Pyle's *Cyclopedia of Medicine and Surgery*, gives the diagnosis between Ptomaine Poisoning, and Poisoning by Arsenic:

Ptomaine Poisoning.	*Arsenic Poisoning.*
1. Onset often from 2 to 24 hours.	1. Onset within half an hour.
2. Results from eating animal (nitrogenous) food.	2. History negative.
3. Nervous symptoms marked (twitching of facial muscles, tingling sensations, dilated pupils, convulsions).	3. Nervous phenomena, as seen in autointoxication, absent.
4. Early dyspnea, cyanosis.	4. Dyspnea comes on late in mineral poisoning.
5. Temperature often subnormal.	5. Temperature often elevated a degree or two.
6. Dryness of mouth and fauces, often bitter taste.	6. Metallic taste in mouth.
7. Vomitus contains mucus, contents of stomach, or bile.	7. Vomitus variable, often tinged with blood, and containing trace of poison.
8. Generally watery diarrhea, sometimes constipation.	8. Feces may contain blood and trace of poison.
9. Various cutaneous eruptions (scarlatinal eruptions, urticaria).	9. Cutaneous eruptions absent.

8.

	Adult Dose.	Physiological Antidote.
Tr. strophanthus	♏. viij	Nitroglycerin; amyl nitrite
Apomorphine (by hypodermic)	gr. 1/10	None
Carbolic acid	gr. j	Magnesium or sodium sulphate
Chloral hydrate	gr. xv	Strychnine.

9. *Opium* depresses the motor activity of the intestines, prevents peristalsis, and causes constipation.

Thymol is an intestinal antiseptic and disinfectant.

Bismuth subnitrate has but little effect on the bowels; it is mildly protective, and astringent.

10. (*a*) *The U. S. Pharmacopœia* is an official list of medicinal substances, with definitions, descriptions, or formulæ for their preparation; it is recognized by the medical profession of the United States, but has no legal authority.

(*b*) *The National Formulary* is a collection of preparations not contained in the U. S. Pharmacopœia.

(*c*) *Fluid extracts* are liquid alcoholic preparations of nearly uniform strength; each cubic centimeter of the fluid extract represents one gram of the drug.

(*d*) *A chemical antidote* is one that changes the chemical character of the poison, and so renders it inert.

CHEMISTRY AND URANALYSIS.

1. *Specific gravity* is the weight of a substance as compared with the weight of a like volume of a given substance, taken as a standard, under similar conditions of temperature and pressure.

An acid is a compound of an electronegative element or radical with hydrogen, part or all of which hydrogen it can part with in exchange for an electropositive element, without the formation of a base.

A *base* is a ternary compound capable of entering into double decomposition with an acid to produce a salt and water.

Allotropy is the property possessed by some elements (such as oxygen, sulphur, phosphorus) of appearing under different forms in which their general chemical characters are unchanged, but their physical properties vary.

Synthesis is the formation of compounds from elements or from simpler compounds.

2. (*a*) *The law of definite proportions*: The same compound always contains the same elements and in the same proportions.

(*b*) *Test for iodine*: Add starch paste; in the presence of iodine it becomes blue.

Test for silver: Add hydrochloric acid; in the presence of silver a white precipitate is formed which is insoluble in nitric acid, but soluble in ammonium hydroxide.

Test for mercury: The Reinsch test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry, glass tube, open at both ends, and apply heat at the part where the copper is. If mercury is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of metallic globules of mercury.

4. (*a*) *Albumin* is found in the urine: "(1) In fevers, as typhoid and pneumonia. (2) In valvular heart lesions, degeneration of the heart muscles, diseases of the coronary arteries, impeded pulmonary circulation, in pregnancy by pressure upon the renal veins, in intestinal catarrh, and in Asiatic cholera. (3) In purpura, scurvy, leukemia, pernicious anemia, jaundice, diabetes, and syphilis. (4) After taking lead, mercury, iodine, phosphorus, arsenic, antimony, chloroform, cantharides, oxalic, carbolic, salicylic or the mineral acids, turpentine and nitrates. (5) In large amounts in acute nephritis and chronic parenchymatous nephritis; in small amounts in chronic interstitial nephritis and amyloid kidney." (Witthaus' *Essentials of Chemistry.*)

(*b*) "*Casts* in the urine occur in nephritis, and different varieties are found in the different forms of that disease. *Hyaline* casts occur in all forms of nephritis, in congestion of the kidneys, in jaundice, and even in health. *Waxy* casts occur especially in chronic parenchymatous nephritis. *Epithelial* casts occur especially in acute parenchymatous nephritis. *Granular* casts are especially common in chronic nephritis, but they may occur in acute nephritis. *Fatty* casts occur chiefly in chronic parenchymatous nephritis. *Blood* casts occur in acute and chronic hemorrhagic nephritis. *Pus* and *bacterial* casts are occasionally met with in suppurative nephritis." (From Stevens' *Practice of Medicine.*)

5. *Test for indican in the urine*: The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chlorid, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

Indicanuria is found in hypochlorhydria; in hyperchlorhydria of gastric ulcer; in conditions in which there is diminished peristalsis of the small intestines, as in ileus and peritonitis, not in simple constipation; also in conditions in which putrefactive changes occur in the body elsewhere than in the intestine, as in empyema, putrid bronchitis, gangrene of the lungs, etc. (From Witthaus' *Essentials of Chemistry.*)

6. For the diazo reaction of Ehrlich, two solutions are required: (1) A saturated solution of sulphanilic acid in a mixture of 50 c.c. of hydrochloric acid and 950 c.c. of water; and (2) a 0.5 per cent. solution of sodium nitrite.

To make the test, 1 c.c. of (2) is added to 40 c.c. of (1) and the mixture thoroughly shaken. Equal quantities of this mixture and the urine to be tested are shaken together in a test tube, and 1 c.c. of ammonia is then floated upon the surface, when, in an affirmative result, a red band is formed at the junction of the fluids.

Its diagnostic value is uncertain. Von Jaksch "disclaims for this test any clinical importance whatever." Others have claimed that the reaction is pathognomonic of typhoid; but it has been found in other diseases besides typhoid—namely, phthisis, pneumonia, measles, scarlet fever, smallpox, and malaria.

7. A comparatively easy test for *Urea* is that of Fowler, based upon the loss of the specific gravity of the urine after the decomposition of the urea by hypochlorite. "To apply this method the specific gravity of the urine is carefully determined, as well as that of the liquor sodæ chlorinatæ (Squibb's). One volume of the urine is then mixed with exactly seven volumes of the liquor sodæ

chlorinatæ, and, after the first violence of the reaction has subsided, the mixture is shaken from time to time during an hour, when the decomposition is complete; the specific gravity of the mixture is then determined. As the reaction begins instantaneously when the urine and reagent are mixed, the specific gravity of the mixture must be calculated by adding together once the specific gravity of the urine and seven times the specific gravity of the liquor sodæ chlorinatæ, and dividing the sum by eight. From the quotient so obtained the specific gravity of the mixture after decomposition is subtracted; every degree of loss in specific gravity indicates 0.7791 gram of urea in 100 c.c. of urine. The specific gravity determinations must all be made at the same temperature; and that of the mixture only when the evolution of gas has ceased entirely." (Witthaus' *Manual of Chemistry.*)

8. The presence in the stomach contents, after a test meal, of considerable quantities of organic acids is supposed to be pathological. Lactic acid, particularly, is supposed to be diagnostic of cancer of the stomach. Organic acids, as a rule, denote pyloric stenosis, gastric dilatation, or deficient motor power of the stomach.

"*The presence of lactic acid* is detected by *Uffelmann's reagent,* which consists of a solution of Fe_2Cl_6 and phenol, diluted to an amethyst-blue color, which is changed to yellow by lactic acid. In order to avoid error by the action of other substances which have a like action upon the reagent, 10 c.c. of the filtered gastric contents are agitated with ether, and the ethereal extract separated and agitated with the reagent; or it may be evaporated, the residue dissolved in water, and the solution added to the reagent." (Witthaus' *Manual of Chemistry.*)

10. *Test for blood*: Let some of the stained material soak thoroughly in a very small quantity of saturated solution of sodium chloride. Put a few drops of the fluid on a slide, cover with a cover-glass, let evaporation occur, allow a drop of glacial acetic acid to enter from the side, and gently warm. On cooling, hæmin crystals form, and can be seen under the microscope.

The freezing point for blood is given as 0.56°.

BACTERIOLOGY.

1. The specific microorganisms have been recovered from the blood, in the following diseases: Typhoid, relapsing fever, cerebrospinal meningitis, malaria, diphtheria, erysipelas, influenza, tuberculosis, cholera, anthrax, pneumonia, syphilis (?), leprosy, bubonic plague, gonorrhea, tetanus.

2. (*a*) To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbol-fuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

PRACTICE OF MEDICINE.

9. *Arteriosclerosis* is a condition in which the walls of an artery, especially the intima, become hard, dry, and thickened.

Usual causes: Syphilis, alcoholism, gout, Bright's disease, overeating, and excessive muscular exertion. It is most liable to occur in old age.

It is *frequently associated* with: Chronic interstitial nephritis, chronic myocarditis, paralysis, and gangrene.

10. The *principal causes of hematuria* are: (1) Conditions in which the blood is affected, as in the infectious diseases, in scurvy, pernicious anemia, and purpura; (2) traumatism or inflammations in any part of the urinary tract; (3) congestion of the kidneys secondary to disease of the lungs, heart, or liver.

In *renal* hematuria the blood and urine are intimately mixed, tube casts are apt to be present, and there may be renal colic or pain in the lumbar region. In *vesical* hematuria the blood and urine are not so well mixed, and pure blood is apt to be passed at the end of urination. In *urethral hematuria* the urine first passed is bloody.

SURGERY.

4. After a blank-cartridge wound of the palm of the hand, the patient should be anesthetised, hemorrhage checked, dead tissue and any foreign matter should be removed, the wound thoroughly disinfected and drained, and it might be well to administer at once a prophylactic dose of antitetanic serum.

GYNECOLOGY.

1. In *extrauterine pregnancy,* see below—OBSTETRICS, Question 6.

In the *ovarian cyst*: The history must be taken very carefully, and there will be found absence of the chief signs of pregnancy; there may be the characteristic facies; and the tumor is soft and fluctuating.

5. (*a*) Two *indications for hysterectomy*: Carcinoma and fibroids.

(*b*) As to preference between the vaginal and abdominal routes, the following is taken from Garrigues' *Gynecology*: "If the vaginal route is available, it should be preferred, because it entails much less shock, requires a simple after-treatment, does not leave any visible cicatrix, predisposes less to hernia, and allows the patient to resume work in shorter time. On the other hand, the vaginal route is more difficult on account of the limited space. Hemorrhage is more troublesome to check, adhesions are harder to separate, and the bladder and intestine more exposed to injury and less accessible for repair. The pelvic cavity cannot be seen so well, and the abdominal not at all. If tissue is left to mortify, it emits an offensive odor."

OBSTETRICS.

2. In contracted and deformed pelvis, the different methods to be considered in delivery of the child are: (1) Induction of premature labor; (2) Forceps; (3) Version; (4) Craniotomy; (5) Cesarean section, or one of its modifications; (6) Symphyseotomy.

So many things have to be taken into consideration that it is quite impossible to lay down any hard and fast rules to govern every case. The following table (from King) is a safe guide:

When Conjugate Diameter of Brim measures:	The Mode of Delivery at Term is:
Between 4 and 3½ inches...	By Forceps.
Between 3½ and 2¾ inches.	By Forceps, Version. Symphyseotomy. Cesarean section, or Craniotomy, *pro re nata.*
Between 2¾ and 2 inches...	Cesarean section, if child alive. Craniotomy, if child dead.
At 2 inches or less.....	Cesarean section always. Craniotomy excluded, whether child dead or alive.

6. *Diagnosis*: "When extrauterine pregnancy exists there are: (1) The general or reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility; nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy; pains are often very severe, with marked tenderness within the pelvis; such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating; this tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The os uteri is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*" (*American Text-Book of Obstetrics.*)

Treatment consists in removal of the product of conception, by a laparotomy, as soon as the diagnosis is made.

8. The *indications for Podalic Version* are: (1) In transverse presentations: (2) in placenta prævia; (3) in malpresentations of the head; (4) in simple flattened pelvis, and in minor degrees of pelvic contraction; (5) in prolapsed funis; (6) in sudden death of the mother; and (7) in any case where speedy delivery is imperative.

PATHOLOGY.

1. In *secondary anemia,* the blood would show: (1) A diminution in the number of red corpuscles; (2) a diminution in the amount of hemoglobin, perhaps greater than that of the red corpuscles; (3) poikilocytosis, and variations in the size of the red corpuscles; (4) the presence of a few nucleated red corpuscles; (5) a moderate leucocytosis.

In *pernicious anemia* the blood would show: (1) A

diminution in the number of red corpuscles; (2) a relative increase in the amount of hemoglobin; (3) poikilocytosis; (4) the presence of nucleated red cells; (5) variation in the size of the red cells; (6) the leucocytes *may be* diminished.

The skin is usually discolored (yellowish); fatty degeneration of the heart is common; the liver may be fatty.

In *chlorosis,* the blood shows: (1) A great diminution in the amount of hemoglobin; (2) a slight diminution in the number of red corpuscles; (3) poikilocytosis; (4) occasionally a few nucleated red corpuscles; (5) a very slight leucocytosis.

The skin is generally yellowish-green, and the blood and conjunctiva pale.

EYE AND EAR.

	GLAUCOMA.	IRITIS.
Age	Over forty.	Any.
Tension	Plus.	Normal.
Congestion	General, especially scleral.	General, especially circumcorneal.
Cornea	Cloudy and steamy surface.	Cloudy.
Anterior chamber	Shallow.	Unchanged.
Pupil	Dilated, oval.	Contracted, synechiæ.
Pain	Severe, continuous.	Especially at night.
Vision	Much reduced.	Somewhat reduced.
Treatment	Eserine, pilocarpine iridectomy.	Atropine.

(From Alling and Griffin's *Diseases of the Eye and Ear.*)

2. *Choked disc* is a condition in which the optic papilla is swollen, congested, and inflamed; it is due to increased intracranial pressure.

It occurs in brain tumors, tuberculous meningitis, abscess of the brain, syphilis, nephritis, rheumatism, toxic agents (as lead or alcohol), infectious diseases, and anemia.

3. *Myopia* is a condition in which the anteroposterior axis of the eye is abnormally long, and parallel rays are focused in front of the retina.

Hypermetropia is a condition in which the anteroposterior axis of the eye is abnormally short, and parallel rays are focused behind the retina.

Astigmatism is a condition in which owing to a greater curvature of the eye in one meridian than in others, the refractive power of the eye varies.

4. *Treatment of a discharging ear*: Cleanliness and drainage are primary essentials. The discharge may be removed by sterile cotton, and the use of a warm mild antiseptic lotion. A solution of carbolic acid 1:40 may be dropped in and allowed to remain in the ear for a few minutes. Alcohol may be used when granulations appear. Treatment must only be undertaken once or twice a day, at the first; and the intervals gradually lengthened as the discharge becomes less. This must be persevered in for a long time. Paracentesis may be necessary, and later on, in complicated cases, the ossicles may have to be removed.

MEDICAL JURISPRUDENCE.

1. *Phenomena and signs of death,* are: The complete and permanent cessation of circulation and respiration, rigor mortis, loss of body heat, pallor of the body, putrefaction.

2. It is, probably, not possible to distinguish absolutely human blood from that of other mammals. By careful measurements of the red corpuscles under the high powers of modern microscopes, human blood can be readily distinguished from that of *some animals;* but in other cases, such as the differential diagnosis between the blood of a man and that of a dog, there is no absolute certainty.

3. A sure sign of *hanging antemortem* is the flow of saliva from the mouth, down the chin, and on to the chest. This could not occur in a case of *hanging postmortem,* as the secretion of saliva is a vital process.

4. *Life insurance* is a contract whereby the company insuring, in consideration of a certain premium payable as arranged, agrees to pay a certain amount at the death of the assured to his heirs or other designated person, or to the insured himself if living at a certain date.

The *premium rate depends* on: The age, physical condition, family history, occupation, residence, personal habits, health, etc., of the applicant.

PREVENTIVE MEDICINE.

2. Typhoid fever is preventible. When the municipal authorities do not consider it their duty to supply pure water, each household should boil all water that is to be used for drinking or for washing dishes, etc.; milk should be boiled also; and no ice should be put *in* water or other drink or food; flies should be kept out of the house as far as possible, by means of screens or otherwise; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed, and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over.

3. *Diphtheria* is transmitted by contact with those already infected, by fomites, by careless disposal of secretions, by coughing or sneezing whereby the bacilli are carried through the air to the nose or mouth of others.

Yellow fever is transmitted through the bite of an infected mosquito (*Stegomyia fasciata*).

Typhoid fever is transmitted through the food and drink becoming contaminated; flies may aid in this contamination.

4. PERIOD OF QUARANTINE for: (*a*) *Scarlet fever*: till the patient is quite free from sore throat or discharges of any kind, and the desquamation has entirely disappeared; generally six to eight weeks.

(*b*) *Diphtheria*: till the patient is free from all signs of congestion or rhinitis, and continued bacteriological examination is persistently negative.

(*c*) *Smallpox*: till all crusts or scabs have entirely disappeared.

BULLETIN OF APPROACHING EXAMINATIONS †

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	June 16
Arizona*	Ancil Martin, Phoenix	Phoenix	July 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 14
Delaware	J. H. Wilson, Dover	Dover	June 16
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	July 14
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	Nov. 11
Georgia	E. R. Anthony, Griffin	Atlanta	Oct. 6
Idaho	W. F. Howard, Pocatello	Boise	October 6
Illinois	J. A. Egan, Springfield	East St. Louis	
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May 26
Iowa	Louis A. Thomas, Des Moines	Des Moines	June 4
Kansas	D. P. Cook, Clay Center	Kansas City	June 9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	July 7
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	
Maine	Wm. J. Maybury, Saco	Augusta	July 7
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 9
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Battle Creek / Detroit	May 25
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June 10
Mississippi	J. F. Hunter, Jackson	Jackson	Oct. 13
Missouri	J. A. B. Adcock, Warrensburg	St. Louis	June 1
Montana*	Wm. C. Riddell, Helena	Helena	October 6
Nebraska	E. J. C. Sward, Oakland	Lincoln	May 27
Nevada	S. L. Lee, Carson City	Carson City	Nov. 2
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July 15
New Jersey	J. W. Bennett, Long Branch	Trenton	June 16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July 13
New York	C.F.Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	June 23
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 7
Ohio	Geo. H. Matson, Columbus	Columbus	June 9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	June —
Oregon	B. E. Miller, Portland	Portland	July 7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June 23
Rhode Island	G. T. Swarts, Providence	Providence	July 2
S. Carolina	W. M. Lester, Columbia	Columbia	June 9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July 8
Tennessee*	T. J. Happel, Trenton	Memphis / Nashville / Knoxville	May, '09
Texas	G. B. Foscue, Waco	Waco	June 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July 6
Vermont	W. Scott Nay, Underhill	Burlington	July 14
Virginia	R. S. Martin, Stuart	Richmond	June 24
Washington*	C. W. Sharples, Seattle	Seattle	July 7
W. Virginia	H. A. Barbee, Point Pleasant	Charleston	July 14
Wisconsin	J. V. Stevens, Jefferson	Madison	July 14
Wyoming	S. B. Miller, Laramie	Cheyenne	June 10

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Utah at present reciprocates with Colorado, Georgia, Illinois, Indiana, Iowa, Kansas, Maine, Michigan, Minnesota, Missouri, South Carolina, and Wisconsin.

Alabama.—The new law regulating the practice of of medicine in this State requires an examination of all who desire to practice their profession. Diplomas are not necessary; there is no reciprocity; and no temporary licenses are granted.

New Instruments.

A NEW ADENOID CURETTE.*

By SAMUEL GOLDSTEIN, A.B., M.D.,

NEW YORK.

ATTENDING SURGEON AND CHIEF OF CLINIC, THROAT DEPARTMENT OF THE NEW YORK THROAT, NOSE, AND LUNG HOSPITAL.

The use of the curette is undoubtedly becoming more and more popular, and deservedly so, for the rapid and safe removal of the adenoid growth. Our literature in general furnishes so much upon the subject, that the writer, in introducing this instrument, need hardly dwell upon what is so well understood. In so far as the necessity for general anesthesia is concerned, there are many and divers opinions expressed, some laryngologists extolling the general employment of an anesthetic—others are earnestly opposed to the same. Much can be stated for both sides, but I prefer to leave that as a matter of choice to the respective advocates of both methods. In the past, and with some operators at the present time, the general operative technique consisted in employing some form of adenoid forceps, and then completing the operation by cleaning up with curettes of various forms and sizes.

These procedures often necessitated the expenditure of considerable time; the liability of leaving behind some fragments of tissue, especially if the finger was not introduced in the finale of the operation—and thus at times incurring the danger of secondary hemorrhage, infrequent, perhaps, but sufficiently serious where the accident occurred.

With the instrument now presented, we have operated within the shortest time limit, with a single introduction of this curette, making one clean cut, and completely removing the adenoid growth. The curette is made in two sizes; is somewhat stirrup-shaped, with a straight sharp cutting blade, placed at right angles to the handle; the sides of the fenestra are rounded, so that, when properly used, all danger of injury to the Eustachian orifices is eliminated. The curette is introduced behind the palate in the usual manner, the upper part of the blade placed as high as possible in the nasopharynx, just touching the posterior end of the septum; the entire adenoid growth is engaged in the fenestra of the instrument, its cutting blade pressed smartly against the base of the growth, and with one free, sweeping movement backward and downward, the full growth is removed. The operator if he be in any doubt may satisfy himself that he has thus completed the operation by the introduction of the examining finger. This curette will also be found to be very serviceable in the clean and rapid removal, at one séance, of the enlarged follicles or granulations so frequently encountered in cases of chronic follicular pharyngitis. Here again speedy and deft operative work can be accomplished without any fear of endangering the integrity of the basic mucous membrane of the posterior wall of the pharynx. Mr. I. S. Goldstein of the surgical instrument department of E. B. Meyrowitz of this city, has most successfully perfected my designs.

1335 MADISON AVENUE.

*Presented before the Clinical Society of the New York Throat, Nose, and Lung Hospital, December 4, 1907.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 16, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	403	158
Diphtheria	409	36
Measles	1513	35
Scarlet Fever	1173	41
Smallpox	1	—
Varicella	134	—
Typhoid Fever	25	6
Whooping Cough	37	4
Cerebrospinal Meningitis	13	11
Malarial Fever	—	—
Totals	3708	291

Health Report.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending May 15, 1908:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
Alabama, Mobile, city and county	Apr.	1–30	17	..
California, Los Angeles	Apr.	11–18	1	..
San Francisco	Apr.	18–25	9	..
District of Columbia, Washington	Apr.	25–May 2	2	..
Illinois, Danville	Apr.	26–May. 3	3	..
Galesburg	Apr.	25–May 2	1	..
Rockford	Apr.	25–May 2	1	..
Springfield	Apr.	23–30	5	..
Indiana, Anderson	Apr.	23–30	1	.
Indianapolis	Apr.	26–May 3	4	1
La Fayette	Apr.	27–May 4	1	.
Muncie	Apr.	4–May 4	6	.
Iowa, Ottumwa	Apr.	25–May 2	2	..
Sioux City	Apr.	1–30	17	2
Kansas, Kansas City	Apr.	25–May 2	10	..
Topeka	Apr.	25–May 2	2	
Wichita	Apr.	25–May 2	3	..
Kentucky, Henderson	Apr.	1–30	3	..
Louisiana, New Orleans	Apr.	25–May 2	2	..
Michigan, Kalamazoo	Apr.	18–25	3	..
Port Huron	Apr.	25–May 2	3	..
Saginaw	Apr.	18–May 2	4	..
Minnesota, Stillwater	Apr.	23–30	1	..
Mississippi, Gulfport	Apr.	24	1	..
Missouri, Kansas City	Apr.	25–May 2	18	..
St. Louis	Aor.	25–May 2	1	..
New York, New York	Apr.	25–May 2	1	..
Niagara Falls	Apr.	25–May 2	2	..
North Carolina, Charlotte	Apr.	25–May 2	1	..
Ohio, Bucyrus	Apr.	18–25	1	..
Cincinnati	Apr.	24–May 1	8	..
Tennessee, Knoxville	Apr.	25–May 2	1	..
Nashville	Apr.	25–May 2	1	..
Texas, San Antonio	Apr.	25–May 2	5	..
Virginia, Newport News	Apr.	1–30	1	..
Washington, Spokane	Apr.	18–25	11	..
Wisconsin, Beloit	Apr.	23–May 7	1	..

SMALLPOX—FOREIGN.

Africa, East London	Mar.	21–28	2	.
Arabia, Aden	Apr.	6–13	..	3
Austria, Trieste	Apr.	4–11	1	1
Belgium, Ghent	Apr.	11–18	2	..
Canada, Halifax	Apr.	11–May 2	3	
China, Foochow	Mar.	28–Apr.	..	.
Hongkong	Mar.	7–14	33	29
Shanghai	Mar.	15–Apr. 5	..	11
Ecuador, Guayaquil	Apr.	4–11	..	4
France, Paris	Apr.	11–18	2	..
Germany, General	Apr.	11–18	25	..
Great Britain, Leith	Apr.	11–18	1	..
Indiana, Bombay	Mar.	31–Apr. 7	..	61
Calcutta	Mar.	14–28	..	51
Madras	Mar.	28–Apr. 3	..	1
Indoo China, Cholen	Mar.	21–28	1	..
Italy, Catania	Apr.	16–23	..	1
Genoa	Mar.	1–31	8	..
Japan, Kobe	Mar.	28–Apr. 4	4	6
Nagasaki	Mar.	22–29	1	
Osaka	Mar.	21–28	190	120
Java, Batavia	Mar.	7–Apr. 4	28	1
Mexico, Aguas Calientes	Apr.	19–26	..	1
City of Mexico	Mar.	14–21	..	11
Persia, Chiraz	Apr.	6	..	Epidemic
Kirmanshah	Apr.	6	..	"
Portugal, Lisbon	Apr.	6–25	6	..
Russia, Libau	Mar.	28–Apr. 25	9	2
Moscow	Apr.	4–11	17	10
Odessa	Apr.	4–11	3	..
Riga	Apr.	4–25	13	..
Warsaw	Mar.	21–28	..	3
Switzerland, Zurich	Apr.	1–18	5	..
Turkey, Bagdad	Feb.	28–Apr. 4	149	21

YELLOW FEVER.

Brazil, Manaos	Apr.	4–11	1	1
Para	Apr.	11–18	3	2
Ecuador, Guayaquil	Apr.	4–11	..	4

CHOLERA—INSULAR.

Philippine Islands, Manila	Mar.	7–14	2	2

CHOLERA—FOREIGN.

India, Bombay	Mar.	31–Apr. 7	..	1
Calcutta	Mar.	31–28	..	456
Madras	Mar.	21–Apr. 3	..	9
Rangoon	Mar.	21–28	..	10

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Original Articles.

MELÆNA NEONATORUM WITH REPORT OF A CASE CURED BY TRANSFUSION.

By SAMUEL W. LAMBERT M.D.,

NEW YORK.

Although the case which I have selected to report to the Practitioners' Society has received some notoriety in the daily press, it seems nevertheless worthy of a careful clinical study. The baby was born of healthy parents and was delivered after a ten-hour labor by an easy low forceps operation at 5 A.M. on March 4. The child was a girl, and appeared to be healthy, weighed eight pounds and twelve ounces, breathed and cried at once, and showed no signs of asphyxia. The blades of the forceps made slight marks over the right zygoma and behind the left ear; there was no abrasion of the skin. Five hours after birth the cord was retied because of slight oozing from the cut end. Twelve hours after birth a thickened, dark-colored spot was noticed on the right side of the tongue which was thought to be a nevus, but which has cleared up since and was undoubtedly a hematoma. Three hours later the baby's temperature was 102.2°, and it was put to the breast for the first time. After a quiet night the baby's morning temperature was 102°. She looked pale, and a slight amount of blood was noticed when the mouth was washed. She slept quietly all that morning, but became restless in the afternoon: her temperature at 4 P.M. was 103.4°. She grew markedly paler, cried continuously, and began to bleed slowly but steadily from the nose, and a hematoma appeared in the scalp behind the left ear. At 9 P.M. this subcutaneous bleeding had extended down the neck over the muscles, across the median line to the other ear across the coronal suture over the frontal bone, and forward under the left ear to the angle of the jaw. The bleeding from the nose was continuous and quite profuse. The temperature was 102.3°, a dark meconium stool gave a very positive reaction for blood, but the urine was of normal color. The baby was of waxen pallor. The diagnosis of melena was made, and treatment instituted upon the theory of its being an intestinal infection. One dose of thirty minims of castor oil and two grain doses of calcium lactate every two hours was given during the night. During March 6 the child did not seem to grow worse as rapidly. The scalp hematoma increased in size and tenseness, and the paleness of the skin increased, but the temperature gradually fell from the maximum of the attack at 2 A.M. (104.4°) till it reached 97.4° at 3 P.M., the nasal bleeding became less constant, and the baby nursed regularly. In the evening of March 6 and during March 7, there was some vomiting of watery fluid containing partially digested blood, especially after taking the calcium lactate, which was stopped. Adrenalin was tried in the nose at this time, but without effect. The feedings had to be by dropper, for the baby refused to nurse. The temperature range was 97.8° to 99.4°.

On the morning of March 8 the case seemed hopeless. During this day the baby's skin was waxen white and the mucous membranes without color; the nasal bleeding was continuous; the vomited matter contained food curds, dark blood, and at times bright clots; the stools were frequent and contained bright red blood; the subcutaneous hematoma on the scalp increased until the right eye was closed and ecchymotic spots appeared on the legs; the respiration was rapid and superficial; the pulse weak, counting 150 just before the operative procedure.

It was decided to attempt a direct transfusion of blood from the father of the infant by end-to-end anastomosis of the two blood-vessels after the manner devised by Dr. Carrel of the Rockefeller Institute. This was done through the skillful surgical manipulation of Dr. Carrel himself and Dr. Geo. E. Brewer. The right popliteal vein of the baby was sutured to the left radial artery of the child's father, without anesthetic to either patient, and enough blood was allowed to flow into the baby to change her skin from a pale transparent whiteness to a brilliant red color. No measure of the amount of blood was possible, but the evidences of a sufficient quantity were manifold. She began to cry lustily and to struggle against the bandages which held her strapped to an ironing-board. The wound in the leg up to this time had oozed a slight amount of pale watery blood, which did not clot well. It began to bleed freely and the blood promptly clotted. The nosebleed stopped instantly. The pulse became full and strong and slowed down, and the respirations were deep and full. As soon as the wound was sutured and dressed the baby was fed an ounce of milk, which she took ravenously and retained, and immediately went to sleep.

Since the ending of the transfusion there has been no hemorrhage, no vomiting, and no diarrhea. Convalescence from the operation was uninterrupted except for a slight infection of the wound. There was no evidence of hemolytic action at any time, and all the symptoms of melena ceased at once. The next morning the baby was found to be fourteen ounces below her birth weight. She has gained steadily since, and now, eight weeks after birth, she weights ten pounds fifteen ounces. The hematoma was absorbed rapidly, except for a slight discoloration of the upper lid of the right eye, which still persists. The stools became of normal character two days after the operation. The wound is healed, and the child appears to be a normal child of its age to-day. The striking thing in the case is that the disease ceased suddenly, and the child has been cured from the moment of the transfusion of blood.

This case presents a complete résumé of the symptomatology of melena, and the condition was easily differentiated from the other various kinds of hem-

orrhage to which the newborn are liable. The essential points were the early nosebleed, the rapidly increasing pallor and anemia, the febrile action, and the restlessness followed by the characteristic bloody vomit and stools and the subcutaneous ecchymoses.

The disease is one of the oldest known to man, although it is of comparatively infrequent occurrence. The latest statistics (Shukowsky, 1907) place its frequency at 1 in 1,000, or 29 in 30,000 living births.

Melena is a disease of the first two weeks of life, and usually begins in the first two days, the latest recorded case found began on the eighteenth day of life. (Genrich, quoted by Shukowsky.) It attacks the sexes equally, and well-developed children equally with the poorly-nourished.

Heredity seems to have no influence either as to the presence of true hemophilia or of hereditary syphilis. An interesting case which tends to disprove these influences is that of a pair of twins, one of whom died of melena, while the other was free of the disease. No influence has been proved from the effect of obstetrical operations or accidents, or from errors of anatomical development.

The results of pathological anatomy have failed to show any constant or fixed lesion. The various lesions in the cranium and those in the gastro-intestinal tract which have been described must be classified as chance lesions only. No rational explanation of the symptom syndrome of melena has ever been suggested as a result of fairly numerous autopsy examinations.

The prognosis has been extremely grave, and the mortality has varied in the experience of several observers from 50 to 80 per cent. Treatment also has been most unsatisfactory. A great variety of astringents—various preparations of ergot, subcutaneous injections of salines and of artificial serum, cold irrigations, hypodermic use of 2 per cent. gelatin solutions in saline, antisyphilitic medication, and rectal and gastric lavage have all been tried with great lack of successful results. To the above one must add the equally unsuccessful use of cathartics and calcium salts in the case which is the text for this paper. The best results in the past have been secured from the use of gelatin and gastric and colonic lavage (Shukowsky). The cure of this case by transfusion leads to certain theoretical conclusions as to the etiology of melena which are interesting and which subsequent investigation may prove of great interest.

The theories of the etiology of no other disease have undergone more varied and more radical changes than those of melena. This disease has always attracted attention, and its etiology has been subject to the fashions and temporary fads of the prevalent medical theories of the moment. Its essential nature remains unknown at the present day. Lequeux published a thesis on this disease in the Paris series of 1906, and called attention to this lack of accurate knowledge by suggesting four periods of historical interest in the study of melena.

The first period up to 1825 is called that of *confusion*, and the explanations of the cases reported include such causes as plethora, asphyxia, passive hyperemia, and congestion of the mesenteric arteries.

The second period from 1825 to 1835 is known as that of *clinical study*. The causative factor is suggested as an ulceration of the alimentary canal, too early tying of the umbilical cord, and, equally supported by other authors, a too late tying of the same.

The third period is that of *pathological anatomy*, and extends from 1838 to 1875. The numerous lesions found in the newborn have all been held responsible for this symptom complex: Brain injuries from birth hemorrhage, ulcers of the intestines, including the embolic theory of such ulcer formation, patency of the *ductus arteriosus*, congenital heart lesions.

The final period of *laboratory study*, from 1875 to date, has not cleared up the obscurities of the disease, although all the power of investigation of bacteriology has been brought to bear upon it. At least ten different bacterial causes have been found in individual cases both in pure culture and in various combinations. The list includes streptococci and staphylococci, pneumococci, *Bacillus pyocyaneus*, *B. lactis aërogenes*, *B. coli*, and even the specific germs of typhoid and diphtheria. An interesting claim was made by Gaertner in 1893 for the discovery of a specific bacillus, but subsequent study proved his claims to be untenable. The bacteriological findings have been too variable to prove any specific infection. The relation of syphilis as a cause has been invoked to explain the symptoms of melena on a modern theory of "weakness of the walls of the blood-vessels," and various authors have referred to special hemorrhages occurring in the course of the disease as a cause of the symptoms. Hamill's cases of hemorrhages into the suprarenal capsules, and the cases of cerebral hemorrhage of various authors, are examples of this faulty logic by which the symptoms are explained by interference with the adrenal glands in the one case, and by nervous influences in the other.

Lequeux concludes that melena is a symptom syndrome due to several causes, that certain predisposing conditions, of which syphilis is one, will cause certain infections to bring about the development of the disease. The same idea is expressed by Holt that melena is due to "changes in the blood or to changes in the blood-vessels, or to both, whereby the vessels are no longer able to hold their blood."

Abt, writing in 1903, reaches the same conclusion, as follows: "Future research in the etiology of this disease should be directed along the line of histological examination of the minute blood-vessels contemplating also conditions governing the clotting of the blood."

The modern theories of the chemistry of the blood, of its clotting, of its cellular structure, have been appealed to by Lequeux to explain these phenomena of hemorrhage, but a sufficient number of observations and experiments are lacking in his work to make these views of more than theoretical value. He formulates the sequence of events which probably occur prior to these hemorrhages, thus: "An increase in the bulk of the circulating blood; a change and weakness in the blood-vessels; a diminished power of coagulation in the blood, which becomes fluid, and has no tendency to limit its extravasation; difficulty with vasomotor function, resulting in a passive dilatation of the vessels, and a final rupture caused by changes in the vessel wall restricting its elasticity." In these recent opinions special stress is laid upon the condition of the blood-vessels.

The tendency to apply the newest theories of pathology and physiology to explain the unknown has been referred to as characteristic of the older discussions; it is found as well in the latest literature of melena. The older theories of embolism, of circulation, congestions, and of asphyxia, have

been discarded, and explanations by disturbance of cerebral centers by changes in internal secretion, especially of the suprarenal glands, or by some undiscovered lesion of hereditary syphilis, have been offered both with and without an added bacterial infection. The latest accepted theories of melæna neonatorum point not to ulceration or to gross lesions, but to the capillary blood-vessels as the seat of the bleeding, and the clinical picture of these cases is undoubtedly very like that of an infection as the etiological factor. But the course and the remarkable cure of the case reported here would seem to disprove both the infectious theory of its origin and the blood-vessel explanation of the diapedesis of red cells and disturbed osmosis resulting in the capillary hemorrhages.

To review the facts of the case: Hemorrhages and fever began simultaneously, normal temperature was reached forty hours after the onset of fever, but the hemorrhages became progressively worse, for three days after all fever had disappeared. At time of operation the baby was in a dying state, and had palpably only a few hours to live—immediately afterward the baby was in perfect health. There was no period of convalescence.

Such a sudden change in condition could not be due to a structural regeneration in the capillary vessels, nor to a sudden overcoming of an infection; clinical experience will permit of no such inference. Neither the crisis of a pneumonia nor the relief of a spasmodic croup can be compared with the observed fact in this case, either from the point of view of reversal of pathological condition, or of lapse of time necessary to bring it about.

The only possible explanation of so rapid a change must be found in a chemical condition of the blood. And the final conclusion as to the nature of the disease is that melæna neonatorum is a congenital malformation of the blood of unknown chemical nature. The solution of the problem of its etiology is to be found in a chemical study of the processes of osmosis in the capillary vessels, of the chemistry of blood coagulation, and along kindred lines which are for the most part new and untouched.

A complete bibliography of this disease will be found at the end of Dr. Lequeux's Thesis. The following articles have been especially consulted in the preparation of this article:

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THE DIFFERENTIAL DIAGNOSIS OF MENINGOCOCCUS CEREBROSPINAL MENINGITIS FROM OTHER TYPES OF CEREBROSPINAL MENINGITIS.*

By HENRY W. BERG, M.D.,
NEW YORK.
ATTENDING PHYSICIAN TO THE WILLARD PARKER AND RIVERSIDE HOSPITALS, ADJUNCT PHYSICIAN TO MT. SINAI HOSPITAL, INSTRUCTOR IN CONTAGIOUS DISEASES, COLUMBIA UNIVERSITY.

All epidemics of meningococcus cerebrospinal meningitis are followed by several years during which, while the disease is no longer epidemic, sporadic cases are constantly occurring in sufficient number to warrant a maintained interest on the part of the general practitioner upon whom the burden of diagnosis and treatment naturally falls. At present the disease is sufficiently frequent to make a discussion of its differential diagnosis opportune. Recent developments in the serum treatment of the disease by the Flexner serum add a further element of interest, so that I feel that no apology is necessary for discussing the differential diagnosis of this disease. The symptom complex of well marked and developed cases of cerebrospinal meningitis is so distinctive that the diagnosis in such cases is readily made. On the other hand cases of incomplete symptomatology and irregular in type are difficult to classify and differentiate from other diseases. For in a general way the symptoms of this disease can be grouped under two classes, namely, those due to the affection of the cerebrospinal meninges and the brain, spinal cord, and nerve trunks, and, second, those due to the toxemia and sepsis. It follows, therefore, that we would expect, and do find, that cases of this disease must be differentiated on the one hand from other organic diseases of the cerebrospinal nervous system, and on the other hand from toxic and septic conditions and diseases, particularly such as are febrile in character. Taking up the latter class first, both meningococcus and other types of cerebrospinal meningitis must frequently be differentiated from cases of infectious diseases ushered in by or developing during their course, brain and spinal cord symptoms, due to toxemia of the nerve centers, and not to meningitis. Such diseases are typhoid and typhus fevers, lobar pneumonia, septic endocarditis, cryptogenetic and other types of general sepsis, dysentery and enterocolitis, especially in children; diphtheria, eclampsia infantum, toxemia of pregnancy, diabetic coma, uremia with febrile conditions, and rheumatism; even the acute eruptive diseases in the pre-eruptive stage, particularly those of the hemorrhagic type, may simulate, until the appearance of their characteristic eruptions, the clinical picture of this disease. This is frequently true in smallpox, scarlatina, and measles. In all of these diseases one of the forms of cerebrospinal meningitis may be diagnosticated when the patient is only suffering from a toxemia of the nerve centers which produces many of the characteristic symptoms of cerebrospinal meningitis.

There is a second class of cases in which the patient suffering from an infectious disease has as a complication a real organic cerebrospinal meningitis due either to the organism which causes the primary or basic infectious diseases from which the patient is suffering, or to a mixed infection with some other meningitis-producing organism.

Thus a real meningitis may complicate typhoid fever, pneumonia, tuberculosis, sepsis, scarlet fever, smallpox and measles, epidemic parotiditis and other infectious diseases, and the various types of metastatic cerebrospinal meningitis, which must be differentiated from the toxic pseudomeningitis just referred to, on account of the obvious differences in prognosis and therapy. In typhoid fever, pneumonia, tuberculosis, and sepsis the primary organism producing the general infection is itself capable of producing cerebrospinal meningitis, in the case of the pneumococcus and tubercle bacillus, indeed, a most fatal type of meningitis; in many of the other in-

*Read at a meeting of the Queens Borough Section of the Medical Association of the Greater City of New York.

fectious diseases the meningitis is due to a mixed infection with the eminently pus-producing organisms, influenza bacillus, colon bacillus, the meningococcus, and the pneumococcus, the meningococcus type of meningitis being especially frequent as a complicating infection during periods of epidemics of cerebrospinal meningitis. At such periods we shall frequently find, as I did in some of my cases in the epidemics of 1905-1906, cases of lobar pneumonia complicated by cerebrospinal meningitis, with the meningococcus present in the lumbar puncture fluid.

Third, it is important from a diagnostic, prognostic, and therapeutic standpoint to differentiate from each other cases of organic cerebrospinal meningitis of various bacterial pathogenesis. This is important not only in sporadic cases, but also in epidemic cases; for even during an epidemic not every case of meningitis is due to the meningococcus, for the cases of the pneumococcus, tuberculous, streptococcus, and staphylococcus meningitis will occur irrespective of the meningococcus cases occurring as a manifestation of a prevailing epidemic.

Finally, it is necessary to remember that the various organic diseases of the spinal cord and brain frequently are complicated by a partial or general cerebrospinal meningitis which may simulate epidemic cerebrospinal meningitis and must be recognized and carefully differentiated from it. Of this type is the traumatic meningitis following traumatism of the brain and spinal cord, skull or spinal column, also the meningitis complicating or due to tumors of and hemorrhages into the brain and spinal cord, and that due to various forms of myelitis and cerebritis. Particularly difficult is it to differentiate acute epidemic poliomyelitis anterior, or acute epidemic ascending paralysis or polioencephalitis inferior in some of the cases, from meningococcus cerebrospinal meningitis.

It is obvious then that the diagnostic recognition of meningococcus cerebrospinal meningitis resolves itself into (1) the differentiation of this disease from a pseudomeningeal symptom-complex of toxic origin; (2) its differentiation from other types of cerebrospinal meningitis, be they bacterial in origin or those complicating organic cerebrospinal lesions.

The essential symptoms necessary for a recognition of cerebrospinal meningitis in contradistinction to toxic pseudomeningitis are numerous, and a large proportion of them will be revealed by a careful examination in almost every case, acute or subacute, sporadic or epidemic. They are as extensive as would be expected in an acute infectious disease with a local lesion consisting of an inflammation of the brain and spinal cord and their meninges, and neuritis of cranial and spinal nerves.

The constitutional symptoms are chills, fever, slow pulse, temperature high or low, respiration slower than would be expected when the temperature is high. The temperature curve has nothing distinctive, but is characterized by variations of large amplitude and sudden in character. Symptoms due to the inflammation of the spinal cord and its meninges are stiffness of the neck and opisthotonos, pain in the spinal column, pain in the extremities, hyperesthesia of the surface, difficulty in urination, frequent urination, constipation or diarrhea, incontinence of urine and feces (paralysis of the sphincters in the last stages of the disease and during semicoma); Kernig's symptom (the most valuable and reliable physical sign that we have in cerebrospinal meningitis), eruptions on the skin of a herpetic character, affections of the joints (the joints most affected are the knees); the degree of joint trouble varies from simple pain on motion to redness, swelling, and pain, and all the manifestations present in acute articular rheumatism; diminution, but rarely absence, of patellar reflex, diminution of the skin reflex; the plantar reflex is rarely absent. Absence of the patellar reflex is due to increased intraspinal pressure in these cases and acts as an indication for a repetition of lumbar puncture. A recent symptom to which very little importance should be attached is the Babinski reflex. As you know, when the skin of the plantar surface of the foot is tickled, in some cases of meningitis, the toes are flexed and the *great toe* extended. This symptom is extremely unreliable. It occurs in some healthy children, and children suffering from other diseases. It does not occur in some well marked cases of cerebrospinal meningitis, and is of little practical utility as a diagnostic procedure.

The symptoms due to inflammation of the brain and medulla and their meninges, and neuritis of the cranial nerves are, headache, slow pulse, hydrocephalic cry, tâche cerebrale, vertigo, convulsions, delirium, coma, comavigil, Cheyne-Stokes respiration, photophobia, inequality, dilatation, or contraction of the pupils, ptosis, strabismus, optic neuritis, choked disk, atrophy of the optic nerves, iritis, iridochoroditis, keratitis, conjunctivitis, panophthalmitis, deafness due to neuritis of the auditory nerve, paralysis of the facial and other cranial nerves, hemiplegia, monoplegia, paraplegia, and diminished or absent conjunctival reflex.

The ears and eyes are frequently infected by the presence of the organism in the nasal cavity, giving rise in the ear to otitis media and interna, and mastoid disease.

Symptoms due to changes in the blood are increased leucocyte count (18,000 to 30,000 whites), a very valuable symptom which serves to differentiate these cases from typhoid fever and tuberculous meningitis. The increased leucocytosis is chiefly in the polymorphonuclear leucocytes. Eruptions of a petechial character, also skin eruptions resembling various types of erythema multiforme (these, while not of a trophic character, are probably due to blood changes). Finally, the most important symptom, absolutely distinctive, is elicited by the withdrawal of the cerebrospinal fluid by lumbar puncture and finding therein, microscopically, by spreads, Gram negative extra cellular and intracellular diplococci, and by culture, the diplococcus intracellularis meningitidis. The cytological examination of this fluid is also important; it generally shows polynuclear leucocytes about 90 per cent., and mononuclears about 10 per cent.

Of the symptoms due to the involvement of the spinal cord, the Kernig sign has been the most useful and distinctive, both in adults and children, in the cases I have seen. It is a decided enhancement of our objective diagnostic symptomatology. It is obtained by placing the patient upon the back, flexing the thigh at right angles with the abdomen, then extending the leg upon the thigh thus flexed. If Kernig's symptom be present the complete extension of the leg upon the thigh cannot be accomplished. The patient complains and cries out even when semicomatose, long before the leg is brought into a line with the

thigh, and the spasmodic muscular resistance cannot be overcome even by forcible effort. As the Kernig sign diminishes, the prognosis improves. This symptom is not limited to epidemic cerebrospinal meningitis, but is present in other forms of meningitis, primary or complicating, but, as I have said, I have never seen it absent in the cases of this disease which I have seen in this epidemic. It does not disappear sometimes for weeks after recovery is complete. Betancourt and Franca found it a very constant symptom in their large experience, it being present in over 90 per cent. of the cases. Sometimes, however, the symptom is only unilateral. It is generally unequal on the two sides. It is more marked with each exacerbation. In some fatal cases, with rapidly developing stupor, coma, slow pulse, dilated pupils, and convulsions, post-mortem examination generally shows an acute dilatation of the ventricles. This is a fatal condition, and ordinarily will give rise to the Macewen symptom, especially in young children. This symptom is founded upon the fact that the percussion note obtained by percussing the skull one or two inches behind the point of junction of the frontal, parietal, and temporal bones (a point known as the pterion) gives rise to a clearer note than is obtained over other parts of the vault of the skull, in cases in which there is increased tension (as from abscess) of the cranial contents, beneath the point percussed. The ordinary percussion note in a healthy child is dull and nearly equally distributed over the vault of the cranium. For distention of the ventricles the note behind the pterion should be compared with the note over the rest of the vault of the skull. It is necessary in the examination that the patient sit up in bed, the head and face being free, and the skull but slightly covered with hair.

A large number of these symptoms are not factors until the later stages of the disease, while many of the earlier symptoms are duplicated in toxic pseudomeningeal conditions. Thus the headache, the opisthotonos, the fever, the petechial and other rashes, the behavior of the reflexes, the Kernig and Babinski symptoms, the rigidity at the back of the neck, etc., some or all may be present in toxic pseudomeningitic conditions, particularly those complicating diseases like typhoid, pneumonia, etc. Fortunately, however, the bacteriological diagnosis of the disease is absolutely distinctive.

For the purpose of bacteriological diagnosis of the disease during life, the meningococcus must be sought for in the cerebrospinal fluid obtained by lumbar puncture. It can be demonstrated by culture and microscopically. Cultures made from fluid obtained by lumbar puncture early in the disease will give positive results in a very large proportion of cases. Betancourt and Franca found it in the Lisbon epidemic of 1900 in 271 cases out of 271 examined. It was found by them in the blood during life. The blood serum of those sick and of those who had recovered had agglutinating properties. In six cases examined by Franca two responded in the proportion of 1 to 100, the remainder one to ten, one to twenty, and one to fifty. Whether the agglutinating reaction will be found to be sufficiently reliable and exclusive to use the method for diagnostic purposes, after the manner of the Widal reaction in typhoid fever, remains to be seen. The diplococcus can also be found in the nasal discharges of patients suffering from the disease, both microscopically and by culture. Weichselbaum, however, quoting Albrecht and Gohn (*Wiener klinische Wochenschrift*, 1901), states that there is some doubt as to the identity of the diplococci found in many of the cases. If lumbar puncture is done early in the disease, a cloudy fluid will be obtained, containing pus cells in which the organisms are found; later in the disease, with a clearer cerebrospinal fluid, the result may be negative. Diplococci are more apt to be found in fluid obtained during the acute stage or during an exacerbation.

When the case is one of toxic pseudomeningitis, the fluid obtained by lumbar puncture is sterile and clear. This, then, is the one reliable and decisive factor in the differential diagnosis of these two conditions. When, however, a cerebrospinal meningitis of the meningococcus type is to be differentiated from a cerebrospinal meningitis of the other bacteriological types mentioned above, subjective and objective, symptomatology is frequently not a decisive aid in the differential diagnosis. It is true that in cerebrospinal meningitis of the tuberculous type, there is generally a longer prodromal period; there is no lucocytosis unless suppurative processes are complicating the tuberculous meningitis; there are more frequently signs of chronic basilar meningitis, resulting in paralysis of the third, fourth, seventh, and bulbar nerves in tuberculous meningitis, while in meningococcus meningitis the opisthotonos is apt to be more marked and more frequent, and yet after all in these various types of meningitis the conclusive differentiating factor will be the finding of the bacteriological organism which is the causative factor in the given case of meningitis. The most frequent organisms giving rise to such meningitis I have already recounted, and upon the finding of these in the fluid obtained by lumbar puncture depends the specific diagnosis.

In a general way the microscopic appearance of the fluid yields some indications as to the bacteriological character of the meningeal process. Thus a purulent turbid fluid speaks for meningococcus cerebrospinal meningitis; a comparatively limpid, clear fluid containing flocculi or fibrinous shreds or a slender white coagulated column, branching out at the top and base like a slender pillar supporting a capital in a test tube half filled with clear cerebrospinal fluid indicates tuberculous meningitis. The diagnosis resting upon such macroscopic appearances, however, rests upon but a slender reed, and to clinch it the bacteria should be found by staining or culture. I must not forget to state that in almost all cases of cerebrospinal meningitis, as distinguished from toxic pseudomeningitis, the normal tension of the fluid in the subarachnoid space is increased, and the fluid issues through the trocar under increased pressure; while this rule is not uniform, it is safe to state that increased pressure indicates an abnormal and not a sterile cerebrospinal fluid.

If this effort has succeeded in indicating the many pitfalls that lie in the path leading to a scientific recognition of meningococcus cerebrospinal meningitis, and if it be true that he who is forewarned is forearmed, then I may hope to have added my little mite to the cause of accuracy in the diagnosis of this disease.

923 Madison Avenue.

Cocoa Supplanting Tea and Coffee.—Statistics lately issued by the Department of Commerce and Labor show that during the last ten years the value of cocoa imported has increased from $1,930,831, in eight months of the fiscal year 1897, to $8,344,426, in eight months of 1907, while the importation of tea shows an increase of only about 10 per cent., and the importations of coffee show an actual decrease.

A PLAN FOR REDUCING INFANT MORTALITY IN NEW YORK CITY.

By WILBUR C. PHILLIPS,

NEW YORK.

SECRETARY OF THE NEW YORK MILK COMMITTEE OF THE NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR.

The purpose of this paper is to indicate a program by which I am convinced the appalling rate of infant mortality in New York City may be greatly reduced; and if in New York, with all its mixture of races and overcrowding, in any other city where lives are prized and where there are people who will try to save them.

Last year in greater New York 17,437 infants died under one year of age—the majority from preventable causes, due to improper care and feeding. In other words, out of every 100 babies born, fifteen died before they reached the first year of age.* These figures, significant as they are, have been greatly exceeded in many other American cities. In Charleston, S. C., according to the census report of 1900 the mortality rate among infants was 419.5; in Savannah, Ga., 387.5; in Mobile, Ala., 344.5; in Key West, Fla., 311.8; in Biddeford, Me., 311.6; in Atlanta, Ga., 306.0; in Fall River, Mass., 304.7; in Lynchburg, Va., 301.7, and in Richmond, Va., 300.1—a total of nine cities in which the death rate was over 300 per thousand (reported) births. In six other cities, namely: Washington, Baltimore, New Orleans, Philadelphia, Brooklyn, and Boston, the death rate varied from 194 to 274 per thousand (reported) births. These figures, the full significance of which is hard to realize, indicate the position of infantile mortality in our national life. A graphic representation of this fact is given in the following table showing the relation between the deaths of infants from one to five years of age and other individuals of different age groups. (See Charts.)

Infant Milk Depots.—To protect the lives of these little ones, milk depots conducted more or less along the same lines have been established in twenty cities throughout the United States. New York has seven such depots maintained throughout the entire year. Six are owned by Mr. Nathan Straus and the seventh is the Good Samaritan Dispensary, 75 Essex street. Mr. Straus, at an annual loss of many thousands of dollars, generously feeds about 2,000 babies daily. Certified milk is used and is modified according to five formulæ. The bottles are of 3 oz., 6 oz., 8 oz. and 16 oz., respectively. Pasteurization is at a temperature of 167°, maintained for thirty minutes. The milk is dispensed by matrons. Some of the depots feed as many as 400 babies daily. There is no visiting in the homes and the babies are not weighed. One doctor who has general supervision visits each station at regular intervals and consults with mothers who wish to see him.

At the Good Samaritan Dispensary about 200 infants are fed. The milk here is pasteurized in winter and sterilized in summer. Physicians at the dispensary supervise the work. Very simple formulæ are used. The matron in charge puts up the milk in twelve different quantities to suit the age and physical condition of the child. These quantities and the prices asked for them are as follows:

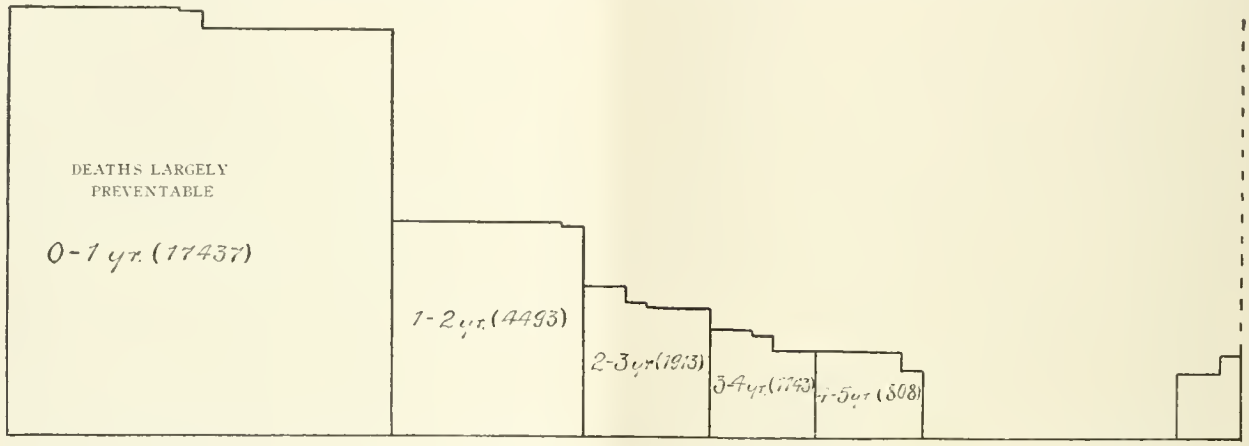

CHART 1.—Mortality in New York City, in 1907, of children under 5 years of age. The total number of deaths in 1907 was 72,205; in those under 5 years, 25,794, over 5 years, 46,411. The square at the right represents the average deaths per year of age of all persons over 5 years of age.

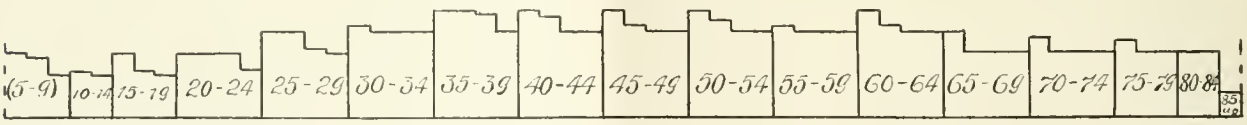

CHART 2.—Average deaths per age for persons of different age groups. The figures in the upper line denote the average deaths per year for each group; those in the lower line denote the total deaths in each group.

Age of Child			Quantity of Milk		Price Paid by Consumer
Days	1 to 3		½	ounce	½c
"	3 to 6		1	"	½c
"	6 to 14		1½	"	1c.
Weeks	2 to 4		2	"	1c.
"	4 to 6		2½	"	1c.
"	6 to 8		3	"	1c.
"	8 to 12		3½	"	1c.
Months	3 to 4		4	"	1½c.
"	4 to 5		5	"	1½c.
"	5 to 6		6	"	1½c.
"	6 to 7		7	"	2c.
"	7 to 8		8	"	2c.

Last year at the close of the season the Good Samaritan Dispensary showed a balance on hand of $131.23—this in spite of the fact that the plant is the oldest in the city and employs methods which have been commercially improved upon.

In addition to these stations the Diet Kitchens Association, a charitable organization, supports sev-

*This of course is an average estimate. In well-to-do families babies die rarely—not more than one or two to every hundred born. In crowded sections this rate leaps up to twenty, thirty, forty, or even fifty per hundred, according to the temperature, poverty of the parents, home conditions, etc.

en depots with matrons in charge who dispense free of cost raw milk from cans to babies and invalids. Matrons serve the milk in the morning and visit their beneficiaries in the afternoon. Mr. Straus also maintains ten summer depots located in parks and at recreation piers.

In Brooklyn the Children's Aid Society dispenses pasteurized modified milk for seventy-five days in the summer from fifteen depots. This is done under the supervision of physicians. The rent of all but one of these depots is furnished free by churches, settlements, and other organizations. Matrons divide their time between dispensing milk and visiting in the homes.

Education as a Means of Reducing Infant Mortality.—The point I wish to emphasize in connection with these depots and with all other depots patterned after them, is the absence of any organized educative effort in connection with the dispensation of the milk, and especially the lack of sufficient emphasis placed upon the importance of breast feeding, which of itself is the greatest of all remedies to prevent infantile mortality. These matters it seems to me have not received sufficient emphasis by those dealing with the subject of infantile mortality in this country.

In France wonderful results in lowering the death-rate of babies have been obtained through education alone not connected, in a majority of cases, with the distribution of milk. The plan adopted is that of the Consultations de Nourrissons, consisting of weekly classes or clinics where babies are weighed and where mothers listen to talks by volunteer physicians on the preparation of milk and the feeding and care of their little ones. The main essentials of this plan, according to the founder, the late Docteur Budin, are a pair of scales and the services of a devoted physician. The main thing striven for is the encouragement of breast feeding. Where this is impossible, the mother is taught to sterilize or pasteurize the milk, of which exact quantities are prescribed. A Secretary to keep record of the weight and physical progress of the babies either volunteers her services or is paid a slight fee. At each weighing the doctor points out in what way the mother has succeeded or failed in following his instructions of the week previous. By blaming some and praising others he thus stimulates a keen interest which is increased by a spirit of natural rivalry among the mothers.

Because of the keeping of individual records, the results obtained by these consultations are directly available. In 1898, for example, the death-rate from diarrhea at Paris during certain weeks was as high as 250, 275 and 285. At the consultation of the Clinic Tarnier, out of a total of from 90 to 140 infants who assisted there, not one infant died from this disease. This was repeated in 1899, 1900, 1901, 1902 and 1903. During a period of ten years at this clinic, only one infant died from gastroenteritis, and this death was due to the headstrong disobedience of a mother who refused to follow the instructions of the physician in charge.

In the Department of Yonne out of a total of 1,935 infants only 56 deaths, or 2.89 per cent., were recorded.

At Appoigny, of 69 infants which followed the Consultations from 1902 to 1905, three, or 4.34 per cent., died, whereas of 9 infants which did not follow the Consultations 4, or 44.4 per cent., died.

At Toucy the mortality rate for infants before the establishment of the Consultations was 197.3 deaths per 1,000 births. The first year after the establishment of the Consultations it had decreased to 120 and the second year after to 50.5.

At Villeneuve-sur-Yonne the mortality rate before the establishment of the Consultations was 163. In 1904 after their establishment it had decreased to 82 and in 1905 to 32. Of 60 infants whose mothers assisted at the clinics during 1904 only 4 died and of 94 infants in 1905 none died. The mortality rate at the Consultations for these two years was respectively 66 deaths and no deaths per thousand births.

At Sens the mortality rate before the establishment of the Consultations was 116. In 1904 after their establishment it had decreased to 80, and in 1905 to 47. Of 72 infants whose mothers assisted at the Consultations in 1904 only 1 died, and of 176 infants in 1905 only 2 died. The mortality rate at the Consultations for these two years was 14 deaths and 26 deaths respectively per thousand births.

At Auxerre the mortality rate before the establishment of the Consultations was 205. In 1904 after their establishment it had decreased to 120 and in 1905 to 60. Of 143 infants whose mothers assisted at the Consultations in 1904 only 2 died and of 182, in 1905, 5 died. The mortality rate at the Consultations for these two years was 13 deaths and 27 deaths respectively per thousand births.

At St. Pol-sur-Mer during a period of 5 years before the establishment of the Consultations the mortality rate was 288. In 1903 after their establishment it had decreased to 209 and in 1904 to 151.

The value of statistics *per se* is illustrated in the above lessons.* Having these figures, each physician is able to compare the mortality rate among his own infants with those of his township, of his department, of his country as a whole. Following are given percentages showing the comparative mortality rates before and after the establishment of consultations in some of the small communes, together with the number of infants which attended these consultations:

	Before the Establishment of the Consult., 1898–1904	After the Establishment of the Consult., 1905	Before the Establishment of the Consultations 1898–1904		After the Establishment of the Consultations 1905	
	Death Rate per 1,000 Births	Death Rate per 1 000 Births	Infants Born	Infants Died	Infants Born	Infants Died
Avallon	100	58	637	64	103	6
Connerre	66	70	437	29	57	4
Bléneau	61	0	327	20	42	0
Quarré-les-Tombes	90	52	386	35	32	2
St. Bris	103	0	233	24	25	0
Rogny	70	27	200	14	26	1
St. Cyr-les-Colons	112	0	98	11	11	0
Grampignelle	67	47	206	14	21	1
Héry	40	0	175	7	33	0
Monéteau	74	0	162	12	25	0
Pont-sur-Yonne	126	93	316	40	32	3
Augy	180	0	61	11	10	0

These facts are enough to prove the value of education not connected in any way with the distribution of milk.† In urban communities where pop-

*The lack of statistics in our American depots makes it impossible to ascertain what actual effect they have had in reducing infantile mortality. An argument has thus been lacking which would prove of value in a wide extension of this needed work.

†The milk used on the continent is rarely modified.

ulation is congested and clean milk difficult to obtain the combining of a milk depot with one or several consultations makes an ideal arrangement; but the operation of depots which dispense milk without any carefully conceived plan of educating mothers in the use of it, or in the care of infants, is one which holds itself open to criticism. Undoubtedly the strongest argument against such depots is that by making an artificial food cheap and easy to obtain they tempt mothers to hand feed instead of breast feed their babies. Dr. Pinard and Dr. Peyroux in pointing out this danger state that the leaflets, directions, and other literature circulated among mothers, most of whom are uneducated, operate against the natural process of breast feeding and often produce pernicious effects. This fact is important when one considers the many other causes such as ignorance, poverty, economic conditions, etc., which operate to prevent mothers from suckling their children.*

In the work of the Association for Improving the Condition of the Poor, under which the New York Milk Committee is organized, cases are frequently reported where mothers a week or so after the birth of their child are up and about looking for work. These mothers often put the baby "out to board" or leave it with its big sister or some other persons whose selected diet consists very likely of baked potatoes, tea, crackers, candy, sugar sops, anything that is cheap and sweet. Sometimes, to be sure, the employment of the mother is an economic necessity. In such cases the interests of humanity demand that society shall step in and assist her. On the other hand, breast feeding in a great many cases is economically possible if its importance is realized, and the ratio of mortality rates among breast fed and artificially fed children shows that in such cases artificial feeding is highly reprehensible. Dr. H. Helle's investigations on this subject are too well-known to be more than touched upon. Of 170 babies who died of diarrhea in Graz, in 1903-04, Dr. Helle discovered that only four were breast fed, forty-eight were partly breast fed, and one hundred and seventeen were bottle fed. In Finsbury, England, Dr. Newman carried on a similar investigation among the English and Italian families in the Italian quarter. The English infants who were hand fed he found died at the rate of 295 per thousand births in 1901 and 242 per thousand births in 1902. The Italian infants who were breast fed died at the rate of 106 per thousand births in 1901, and 192 per thousand births in 1902.

From 1884 to 1886, Dr. Hope carried on an investigation in Liverpool, England, which demonstrated that of infant deaths under three months of age the number of babies wholly or partially hand fed who died was fifteen times as great as the number who were breast fed.

Of 1,000 babies under three months of age he found that 20 breast fed died of autumnal cholera against 300 hand fed. The comparative mortality among breast-fed and artificially-fed children in Berlin is equally striking.

*No exact figures as to the number of mothers among the poorer classes who nurse their own children in New York City are available. Dr. Holt estimates the percentage who are *physically able* to do so as from 75 to 90 per cent. On the other hand, he states not more than 10 per cent. of the well-to-do mothers nurse their own children through the entire period of infancy; 20 per cent., perhaps, nurse them throughout the first six months, and 25 per cent. nurse them throughout the first three months of life. These facts are extremely interesting, considering the high mortality rates in congested districts.

Year	Number of Deaths of Infants Where Method of Feeding Was Ascertained	Number Breast-fed	Percentage Solely Breast-fed	All Others
1900	9,538	895	9.36	90.64
1901	9,338	856	9.17	90.83
1902	7,027	768	10.90	89.10
1903	7,680	723	9.41	90.59
1904	7,780	753	9.68	90.32

In Derby, England, Dr. Howarth investigated the feeding of 8,343 infants. He found that the breast-fed babies had much more resistance than the hand-fed babies with respect to diarrhea, and that even bronchitis, pneumonia, and similar diseases carried off 12 per cent. more hand-fed and therefore less resistant babies than breast-fed. Dr. Howarth's total figures indicate that the infant mortality for hand-fed infants was three times greater than that for breast-fed infants, although the social environment and housing conditions were if anything rather better for the hand-fed.

These facts are startling and show that milk depots from which a substitute for mother's milk is sold defeat their own purpose if they neglect to make clear that this milk is only a substitute for mother's milk, not to be used except as a last resort when the mother is absolutely unable to suckle her own child. That breast feeding can be helped and encouraged has been strikingly illustrated in France.

At Varengeville before the establishment of the Consultations des Nourrissons not a single mother breast fed her own child. At the end of the first year the percentage of breast-fed children was raised to 47.5 and at the end of the second year to 75 per cent.

At Saint-Pol only 22 per cent. of mothers breast fed their own children before the establishment of the Consultations; at the end of the first year the percentage was raised to 35 per cent. and at the end of the second year to 77 per cent.

At Dr. Bresset's Consultation in the rue St. Dominique in Paris only 40 per cent. of mothers breast fed their own children before the establishment of the clinic; at the end of the first year the percentage had been raised to 63 per cent. and at the end of the second year to 81 per cent.

Before the establishment of Dr. Bresset's Consultation in the rue Oudinot 61 per cent. of mothers breast fed their own children; at the end of the first year this percentage had been increased to 67 per cent., and at the end of the second year to 71 per cent.

The close relation between the increase in the number of breast-fed children and the decrease of infant mortality indicates the true responsibility of a milk depot. In its normal development it should sell less and less modified milk to babies and more and more whole milk to mothers: becoming ultimately a clean milk depot from which food is fed through the mother to the child.

Need of Corporations.—Having made these facts clear—the importance of education, particularly with reference to breast feeding—I wish to outline the plan which I have in mind for reducing infant mortality. Before doing so, however, one thing should be emphasized. In the twenty cities throughout the United States which possess infants' milk depots, sixteen systems are supported by philanthropy and four by the municipalities themselves. As far as I know no successful effort has been made to provide, through the framework of established business, a modified milk for infants at prices which the poor

can pay. Physicians, philanthropists, and, it may be, health authorities have failed to cooperate with or, indeed, justly to appreciate the experience and competence of those who often have dealt for a long time and in a most practical manner with problems which they themselves may have but recently become interested in. In fact, cooperation in the broadest and best sense of the word has been lacking to a marked degree in the milk situation, and it is only through this cooperation that milk can be improved and infant mortality can be reduced in our American cities. In Manhattan and the Bronx alone there are nearly 5,000 physicians of all nationalities, 606 churches, 45 settlements, 52 day nurseries, 35 hospitals for women and children, not to mention other organizations, which give more or less time and attention to the problem of family life, especially as it affects infants and young children. Many of these institutions already have organized classes for mothers; many of them employ trained nurses either for field or dispensary work; many have medical supervision. Splendid opportunities are here presented for assisting in the work of reducing infant mortality. It cannot be done by the Health Department or physician alone, nor yet by the church, social or charitable worker. Neither can the milk dealer who is frequently as generous as any, but who lives by the proceeds of his milk, be overlooked. All must contribute. No one must work in isolation. A definite goal must be set, and all must cooperate in reaching it.

Plan for Reducing Infant Mortality.—This leads me to the first and fundamental part of my plan for reducing infantile mortality, namely: the establishment on a large scale of consultations on infant hygiene (I choose this name because it seems to me the word nourishment is not sufficiently inclusive) in New York City. These consultations could be organized in a simple, inexpensive manner, after the pattern of the Consultations des Nourrissons in France. Their object should be: (1) The education of mothers in the care of babies up to the age of two years; (2) the encouragement in every way of breast feeding; (3) the education of mothers in pasteurizing, sterilizing, and modifying milk in the homes.*

Groups of twenty or twenty-five mothers could be collected and the clinic or consultations held in churches, settlements, day nurseries, and other similar institutions.

In this work the enthusiasm and unselfish cooperation of physicians is essential. Technical differences of treatment should be set aside and every effort centered on inculcating recognized fundamental principles of hygiene.† To economize time and effort two or even more physicians might work together in the same class, giving, say, one hour of the week, or one hour every other week, for a fixed group of infants. The necessary equipment for these clinics is extremely simple, consisting, as I have already pointed out, of a pair of scales and the devotion of those in charge. Babies should be weighed weekly at the consultation. In attending these consultations, mothers would be stimulated not only by the desire to exhibit their own babies but to see the babies of their neighbors and to compare data concerning them. Each baby would be stripped and examined in the presence of all the mothers; an opportunity thus being given the doctor to make a practical illustration of the lesson which he wishes to teach. A spirit of rivalry could be created by holding baby shows with prizes for the best babies. Volunteers to act as secretaries for the physicians could easily be obtained from the institutions where clinics would be held. The secretary would keep weights and statistics of the babies. Charts showing the natural and actual increase in each infant's weight should be kept and shown to the mother as an incentive to care properly for her child.

At first, naturally, mothers would be slow in coming to the consultations. Later, however, the work would surely become recognized. Women who, at first, looked upon the clinics with disapproval would, as experience has shown repeatedly, find that their babies did badly or perhaps died, whereas babies whose mothers attended regularly did well. The consultations would thus become talked of in the neighborhood and would gradually take their places as permanent educational institutions.

For the sake of record, all charts, tables, etc., should be kept uniform and it would be well also if the scales used were of the same make.* A central clearing house thus becomes necessary, and I should suggest in the absence of any other agency that the New York Milk Committee, which is planning to open seven milk depots and to establish a number of consultations of its own this summer, be drawn upon in this matter. A nominal fee might be asked for the charts and tables in this case. By being able accurately to calculate the annual mortality rate in infants under their supervision and to compare this rate with the mortality rate of the city and of rival consultations a helpful spirit of competition would be created among the different physicians.

As far as the milk itself is concerned the problem is not so difficult as it seems. Existing organizations from which a modified milk for infants is sold should be encouraged and patronized. Where such depots do not exist the New York Milk Committee, in so far as it is able, will endeavor to establish new depots throughout the coming year; and where the establishment of new depots is impossible, milk dealers should be called upon to provide, especially for infants under two years of age, a special supply of clean milk which I am not at all certain they would be unwilling to sell at cost, especially during the hot summer months. The milk dealer, in other words, will be no slower to cooperat in this movement than will be the physician, the

*The question of home refrigeration should demand careful attention at these consultations, for, no matter how safe the milk is when it leaves the depot, a few hours in a broiling sun are sufficient to render it unfit for the baby's stomach. This point so far has been neglected in feeding tenement babies. The construction of inexpensive refrigerators or sawdust and paper boxes in which milk can be kept in water at a low temperature should be taught and everything done both in a suggestive and practical manner to safeguard the milk after it reaches the home.

†It would be well in this connection if some of the older physicians who are giving especial attention to infant feeding could supervise and direct the younger men. Meetings for this purpose might be held from time to time. A general conference on infant mortality called before the hot weather sets in would be timely.

*Uniform printed instructions to mothers are also greatly needed in New York City. At present mothers frequently receive as many as five or six different sets, issued by various hospitals, dispensaries, settlements, milk stations, etc. These sets confuse, whereas one set sent repeatedly would drive the message home. Simple uniform instructions, printed, say, by the Health Department and distributed to mothers through milk dealers, as well as other agencies, would greatly help in the progress of education. In this the newspapers—especially newspapers printed in foreign languages—could cooperate.

social or charitable worker, or the public citizen.*

Meanwhile, for babies whose mothers are ignorant and who live in sections where everything militates against their lives, the establishment of new infants' milk depots cannot go on too quickly. To enlarge the field of existing depots the New York Milk Committee has arranged with one of the best-equipped milk dealers in New York: (*a*) To supply it at cost with any quantity of certified or inspected milk which it may desire. (*b*) To modify this milk according to formulæ for infant feeding. (*c*) To bottle it in "feedings" suitable to the age and physical condition of the child—one "feeding" to each bottle. (*d*) to dispense milk from two of its regular stores under the supervision of the committee's nurses. (*e*) To provide and deliver as much certified or inspected modified milk for infants as the Committee wishes, provided depots can be secured from which to dispense it. No modified milk will be sold to any depot except through the Committee.

Modification will be in the company's laboratory under the supervision of a doctor and bacteriologist. From this laboratory or central plant the milk will be delivered to the distributing depots. Orders for "feedings" will be sent in at the close of each day from the depots to the laboratory, where the milk will then be prepared for the following day.

A price will be asked for the milk low enough to place it within reach of the poor, yet high enough to prevent a financial loss on the part of those handling it. This price will be fixed by the New York Milk Committee, which will charge each depot for the milk and render bills for the same. The prices will be patterned after those of the Good Samaritan Dispensary.

Three-ounce, six-ounce, and eight-ounce graded sterilized bottles will be used. They will contain exact "feedings" for individual babies. Nipples will be directly adjustable. Deposits on bottles will be required to cover loss in case of breakage. Washing and sterilizing of bottles will be done at the central plant.

On June 15 the Committee will open seven new infants' milk depots. Each of these depots will be in charge of a trained nurse who, in addition to dispensing the milk, will act as secretary at the Consultation and, by house-to-house visiting, will endeavor to stir up interest in the work throughout the neighborhood. Already many settlements, churches, and day nurseries have volunteered assistance. A number have offered rooms for use as depots and all without exception have offered the use of their quarters for consultations on infant hygiene. In localities where existing depots already dispense milk, the mother will thus receive instructions at the consultation, and milk at the depot.

In establishing new depots the cooperation and assistance of the public may fittingly be added to that of the physician, the social worker, and the producer of milk. Where rooms cannot be obtained free of rent the cost of establishing depots in charge of trained nurses from which 100 babies can be fed under the supervision of a physician is as follows:

Minimum		Maximum	
Rent (at $20 a month)	$ 240	Rent (at $25 a month)	$300
Salary of nurse	900	Salary of nurse	900
Initial cost of painting, white-washing, etc.	50	Initial cost of painting, white-washing, etc.	100
Equipment (table, chairs, refrigerator, scales, etc.)	65	Equipment (table, chairs, refrigerator, scales, etc.)	100
Fuel and light	20	Fuel and light	30
Incidentals	25	Incidentals	70
Total	$1,300	Total	$1,500

It is hoped that at the end of the first year the proceeds on the sale of the milk will (especially in depots the rent of which is supplied free) pay all or part of the nurses' salaries, together with the running expenses of the station. The practicability of this remains to be demonstrated. By its arrangement with the milk company the Committee furnishes bottles, crates, bottle fillers, and other new equipment.

In addition to the depots which it will establish, the Committee will also place three nurses in the field, whose duties will be simply that of organizing Consultations on Infant Hygiene in different neighborhoods. In this way it is hoped some comparative idea will be gathered of the results obtained at Consultations connected and unconnected with the dispensation of modified milk.

The plan above outlined, except as it concerns the establishment of milk depots, is applicable to any American city. Its chief and essential element is cooperation. In cities of smaller size than New York, the question of obtaining a clean milk is simplified; and, because of the less complex conditions of life, instructing mothers how to prepare and care for this milk in the home is rendered much easier. With this instruction, even where it is impossible to establish infants' milk depots, a striking reduction of infantile mortality can, I feel sure, be realized.

*The association for the improvement of the milk supply of New York, an organization of milk dealers, of which Dr. Ernst Lederle, former Health Commissioner, and a member of the New York Milk Committee, is an active member, could be drawn upon in this matter. Mr. Loton Horton, president of this association, has also recently been elected by the association a member of the New York Milk Committee.

THE CORRELATION OF EYESTRAIN AND THE FUNCTIONAL NEUROSES.*

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In accepting the invitation to read this paper I feel not only a keen appreciation of the honor done me, but also of how inadequate must be any presentation of this subject within any reasonable time-limit. Any of its technical phases would here be out of place, so let us look at this matter as a whole and from the viewpoint of the general practitioner. It is unfortunate that the term "eyestrain" has become so firmly fixed as the designation of this condition, for the symptom-complex which goes by that name is not eyestrain at all. We do not see with our eyes any more than we hear with our ears; etheric and atmospheric vibrations are conditions of matter, light and sound are their cerebral manifestations. The muscular mechanism which brings the light rays to homologous points upon the retinæ and *holds* them there may become fatigued, the cerebral centers which receive these impulses may become exhausted, but the eye itself suffers no strain. It may become damaged, it is true, but this is consequent and secondary to the congestion of the organ incident to improper functioning. It would be difficult to frame either a word or a phrase which would express with accuracy either the causes or the results of eyestrain. "Neurasthenia" does not do it, for it is not a weakness of the nerves; "myasthenia" also fails, for the muscles are not wanting in power. A single term

*Read before the Tioga County Medical Society, March 3, 1908.

cannot cover several causes, nor a single term embrace multiple effects. Let us hold in mind, however, that, at the last, it all comes back to this—an overdraft on the Bank of Neuricity; an overdraft from the fount of neural flow. The latter analogy is perfect. If the demand from the fountain and the reservoir connected therewith be greater than the supply, then will soon ensue exhaustion. In the body we have a reserve store of nervous energy, from which we may draw; the loss by day is made good during sleep, but if the drafts on this reserve be excessive, then only can result one thing—nervous exhaustion. It should be clearly understood, in speaking of eyestrain, that it comes not from lack of contractility in the muscles nor from failure of neurility, but from overwork of the specific cerebral center which presides over the particular muscle or group of muscles at fault working under just surmountable difficulties.

Let me call your attention briefly to the anatomico-physiological aspect of the function of binocular vision. In the first place, the retinal impression must be transmitted to the brain and there resolved into its component parts of light, form, and color. There are separate centers for each of these, and they are linked, cell for cell, with their fellows in the other half of the brain. Inequality of refraction between the two eyes must cause unequal stimulation of these conjugate centers, and confusion results. In fact, if the ocular dissimilarity be very marked the mental disturbance will be so great that either one eye will, more or less, go out of function or there will result a dissociation of the conjunct centers and loss of binocular vision. We are the sum of our experiences, and will, judgment, and other attributes of personality are simply syntheses of sensory impressions. How necessary, how essential in fact, does it become that this avenue of our most important sense shall convey accurate impressions to the brain, even should no discomfort result in the transmission? Unequal refraction results in disturbed binocular fusion; imbalance of the extrinsic ocular muscles produces difficult or impossible binocular fixation, and accommodative disablement, in proportion to its degree, causes, in the hyperope, painful or blurred vision for all distances, in the myope these only within his far-point. The eyes are moved in the orbits by six little muscles attached to the globe and arranged in pairs. For the simplest movement at least four must be energized; for the more delicate adjustments the whole twelve may be called into play. More than this, for function in convergence two of these muscles must receive an added neuricity. How exquisite must be the coordination of these little muscular bands which enables us rapidly to alter fixation from near to distant things, and which links with it an accurate focus on the object seen. Binocular vision and accommodation were the last two products of evolution, and being the last developed, are least established as a racial habit and are the easiest to lapse out of function. The dissection of a thousand eyes will show how marked are the variations in the muscular attachments, and consequently how often may result impairment of action.

The most important of the ocular muscles, the ciliary, lies within the eye and presides over the function of accommodation. By what mechanism it fulfils its purpose is still a matter of controversy. The authority of Helmholtz has carried such weight that his theory has been almost universally accepted. I cannot accept it, for, if it be true, there must be a constant traction on the zonula when the eye is adapted for distance. This implies action in a state of repose. The terms are incompatible. In accommodation for small distances within the working point there must be a passive action, due to the inherent elasticity of the lens capsule. This is in contravention of the rule of actor and antagonist in exact coordinate movements elsewhere in the body. Furthermore, the question at once suggests itself, What exerts the traction on the zonula to keep the lens adapted for distance? Whatever may be the action, it is difficult to understand in the normal eye, in an astigmatic one, next to impossible. Nevertheless, to my mind, astigmatic accommodation does exist and is possible within limits, say up to one-half diopter, and it is just this onerous and difficult functioning that makes so disastrous small degrees of astigmatism. Arranged in their order of relative importance and frequency there are refractional, accommodative, and muscular causes of poor, difficult, or painful vision. These errors may all be coexistent, and yet the patient may not suffer from any reflex disturbances; one only may be present and the most serious consequences ensue. This sounds paradoxical, but let us analyze it a little closer. Let us take, for example an individual who has in each eye a simple myopia of three diopters. Such a person has a far-point of distinct vision at thirteen inches only. Beyond that, everything is blurred and out of focus. He has poor vision, but, barring muscle-imbalance or intraocular disease, he will never suffer from painful vision nor will any reflex disturbances ever result. Occurring in his early years, it condemns him to a solitary childhood, to introspection and morbidism, to an ill-developed body, and to early disease, but it does not damage his nervous balance. On the other hand, an hyperope, proportionate of course to his years and the amount of the hyperopia, has good distant vision, but this is secured only by constant tension of the ciliary muscle, and for nearby, still greater efforts. If sustained near-work is compulsory, this individual will suffer from accommodative asthenopia, painful vision, and perhaps some of the reflex neuroses which will be mentioned later. This condition always occurs in childhood; in fact, it is congenital and developmental. Such children are behind in their studies, truants from school, usually robust in body but mentally ill-developed, acquire bad habits, and are promising recruits for the criminal class. An astigmatism, if of high degree, is worse than either of these other conditions, for by no effort can good vision be obtained either for distance or near. Notwithstanding the resultant poor vision, its evil effects, aside from its repressive influence on mentality, are expended on the eye itself. Choroidal and other intraocular diseases develop, but neurotic or other reflex disturbances do not follow in its train. It is the moderate degrees of hyperopia, and the astigmatism which may just be neutralized by ciliary effort, which work such havoc, and which give rise to remote and damaging reflexes. It is for just this reason that the State examination of the eyes of school children fails in its purpose. It is not the child with poor vision that is to be pitied; rather is it the one who sees the clearest. More than one-third of the children of school age have visual disturbances sufficient to hamper them in their work; others, just enough refractional error to undermine the health and upset the nervous equilibrium. It should be the advice of every family physician to the parents that they have the eyes of their children examined under atropine before permitting them the onerous ocular labor which modern schoolwork entails. Almost

never has the patient poor vision who comes complaining of headaches, and it is the rule that the disturbances due to eyestrain are in proportion to the visual acuteness. It is the little errors which cause the mischief, and it is an easy matter for a poor refractionist to convert an unirritating ametropia into a most exasperating error through slight over- or undercorrection. A patient with two diopters of astigmatism has the focal line so far in front or behind the retina (according as the error is myopic or hyperopic) that vision is greatly reduced; throw that focal line nearly but not quite on the retina and trouble immediately begins. Sight, of course, is greatly improved, but the ciliary muscle, in the interest of still clearer vision, gets in its fatal work, and during every waking moment is striving for the impossible, with the sure result of a nervous drain which somewhere will show its effects. It is evident, or at least I have tried to make it so, that the final and ultimate result of uncorrected ametropia expends itself as loss of neuricity. If you give yourself an artificial hyperopic astigmatism by weak minus cylinders, or a hyperphoria by a base-down prism placed before your eye, there will result in a short time nausea, headache, and vertigo; not due in this case to nerve exhaustion, but to a disturbance of the nice balance between conjugate and correlated cerebral centers. This is acute. The chronic drain, due to congenital defects, leaves an insufficient supply for other vital processes, and its effects may be manifested anywhere in the body along the lines of least resistance. If you grant these premises, which personally I know to be true, then you must admit the conclusion that from eyestrain any functional disturbance is possible anywhere in the body.

The foregoing has been somewhat technical, but only enough so to make clear the far-reaching effects of this cause of neural loss. Let us now see wherein lies its practical application in general practice. Let us take, for example, a patient with chronic, intermittent headaches, the most common manifestation of eyestrain. He would be a most bungling and culpable practitioner who would prescribe for this symptomatically. The trained physician would make a uranalysis when the presence or absence of albumin or indican would give him clues of value; if necessary, he will have made a blood-count; he will take a careful history, and give due weight to neurotic conditions. Habits of life, conditions of the skin and bowels, or menstrual disturbances may all be factors in the case. Not every possessor of an error of refraction suffers from eyestrain. The ditch-digger may have an astigmatism of one-fourth or four diopters and never know he has it. To render it disastrous, there must be brain-work and eye-work combined, and in proportion to these will lesser sources of local irritation operate to induce the more disturbing reflexes. Not even neuroticism and astigmatism in combination will always give rise to a nervous débacle; there must also be more or less prolonged near-work for the eyes. Our bodily functions are so linked together that disturbance of one reflects on the other. We may have ocular palsies from a decayed tooth, or cough from impacted cerumen in the ear, or epileptiform seizures from pinched nerve-ends in an old scar. The profession recognizes all these, but it refuses to recognize that a constant, wearing strain on the ocular structures can result in remote disturbances. Nevertheless, it does, and paroxysmal headache is the most common of these; but there may be anorexia, heartburn, nausea, and vomiting as the gastric reflexes; menorrhagia, dysmennorhea, or amenorrhea as the uterine disturbances; or chorea, insomnia, nocturnal enuresis, and epileptiform attacks as nervous anomalies caused by eyestrain. There is besides all these that obscure group of symptoms which is generalized in the term "neurasthenia." Causeless weeping, melancholia, exhaustion of mind and body, inability to fix the attention are some of its protean manifestations. Mind you, I am not saying that all these things have for their sole and underlying cause an error of refraction, but I do insist that, given this error, a neurotic diathesis and eye-work combined, you have as pretty a combination for trouble as one could wish for.

In investigating any bodily ailment we would naturally seek first for its most frequent cause; later, the more infrequent. In typical migraine the eyes are in fault in 95 per cent. of these cases, perhaps more, but so nearly certain is this the case that I have little hesitancy in promising a cure, and none in promising relief. Migraine is a more or less severe paroxysmal headache, often unilateral, but not always so, associated with nervous disturbances, nausea, or vomiting. There may be forewarnings of the attack in ocular symptoms, transient hemianopsia or scotoma scintillans, or in reflex disturbances of sensation in the neck and arms. The term "sick-headache" fits it better than the pseudo-scientific one of migraine, and there are none of you who have not seen it many times. Have any of you ever cured it by drugs? To every skilled refractionist the cure is so nearly a matter of course that it ceases to have any interest for him. This is a pity, too, for he should drive this truth home, in season and out. This which is so matter-of-fact to him is to many not even known. The neurologist, the gastrologist, and the gynecologist have all advanced their hypotheses as to the etiology of migraine, but they all fail to explain why the condition comes on with the advent of school-life and disappears with the coming of old age. Only accommodative strain and loss of accommodation can be factors incident to these widely-separated intervals; organic disease is too early for the one and should have reached its climax in the other. It should be borne in mind, however, that not always is disease cured by removing its principal cause, for there may have grown up associated maladies, or other factors may complicate the case, but it may be safely said that 99 per cent. of sick-headaches may be cured in the young, and 90 in the middle-aged: old people do not have it.

If what has been advanced is true, namely, that overdraft of energy through one channel leaves others unsupplied, then it need cause no surprise that reflex neuroses anywhere may result from the enormous drain that eyestrain imposes on the central nervous system. In closing this phase of the subject, let me leave with you this suggestion: If you have a patient who presents evidences of disturbed function anywhere in the body with no organic lesions to account for it, you have not done your duty to that patient until the possible ocular origin of this has been determined. Headache, while the most common, is not the only manifestation of eyestrain; neuralgias, anesthesias, and paresthesias are sensory disturbances: bradycardia and tachycardia, heart symptoms; recurrent rhinitides and spasmodic asthma are evidences in the respiratory tract; gastralgia, dyspepsia, anorexia, nausea, diarrhea or constipation are functional disorders of the digestive apparatus; menstrual and ovarian disturbances may be due to this cause; night-terrors, insomnia, nocturnal enuresis, epileptiform seizures,

and that multiform neurosis which is termed neurasthenia, all may have their origin from or perpetuation by uncorrected visual anomalies. Pardon this repetition, but I want to drive home the conviction that there are other disturbances besides headache due to eyestrain. You don't have to advise a patient with headache to go to an oculist. The people have found that out for themselves, but this advice would come from you with much better grace. Remember that reflex disturbances are possible anywhere. The term "neurosis" means a neural disability and eyestrain, even if it be not the causal, may be a contributory factor; and this source of nervous leakage should be stopped.

An eminent ophthalmologist has stated that there are seventy-eight reasons why glasses may have failed to give relief. These might be summed up into one—the glasses did not fit. By this is meant lenses and frames together. Not one of these seventy-eight factors may be safely neglected if good refraction work is to be done. It is not within the scope of this paper to review the difficulties which underlie this work, nor to discuss the many causes of failure. Two things are certain: that nothing in all medicine approaches it in difficulty, and that to entrust this work to the optician or the careless refractionist is simply to invite failure, or to make a bad matter worse. Would you send your pathological specimens to the maker of microscopes, or invite your druggist to prescribe for your patients? You do worse when you tell patients with eyestrain symptoms to go to the jeweler and get a pair of glasses. In the first place the law does not permit him to use atropine or other cycloplegic, and without it scientific refraction work is impossible. Remember, too, that the glass which is nearly but not exactly right is worse than none at all. The oculist who works without a mydriatic, and who cures his patients by taking off their glasses, belongs in the jeweler class and is in training for the High Priesthood of the Has-Beens. Don't, in the name of common-sense, send your case, unless, perchance, it happens to be a watch-case, to the watch-maker, nor, when the result is a failure, conclude that eyestrain had nothing to do with the symptoms. Don't trust an oculist either who does the work in one short visit, who works without a cycloplegic, who corrects only the manifest error, whose cylinder-axes come out beautifully in even numbers, who thinks a quarter diopter the smallest cylinder in the trial-case, whose spheres run in half diopters, or who thinks small astigmatic errors of no importance. It is in just the little things that lies the difference between success and failure.

The thought which has been uppermost in mind throughout the foregoing has been refractional errors, but it should not be forgotten that there are other ocular conditions which give rise to eyestrain. Imbalance of the ocular muscles, in a small proportion of the cases, is a source of irritation from which may start reflex troubles. That a large number of these are refractional and innervational in nature is surely true, but it is equally certain that there exists intrinsic imbalance, due to faulty implantation of the tendons on the globe, and when this is the condition, only well-studied and carefully-executed surgical measures will give relief. A most frequently overlooked source of eyestrain is crippled accommodation. The age of the patient is no criterion for this failure. There is no rule for presbyopia. It may come in early years, or be long delayed beyond the classic 45 of Donders. More than this, it may be unequal in the two eyes. There is nothing astonishing in this; patients with unequal refraction must accommodate unequally if they are to obtain binocular fusion, but it is noteworthy that even when the static refraction is made equal by glasses there sometimes remains a difference in the accommodative power, and not infrequently the eye which before was using the most for distance now has less in reserve for close work.

There are many causes of failure to relieve where glasses have been prescribed; a few of the more common ones will be here briefly set forth, so that when the patient whom you have sent to the oculist is not benefited, you will perhaps better appreciate that the trouble lies, not with the method, but in its application. In the first place—and this is true, first, last, and all the time—no cyclopegic, no refraction. That any argument should be needed on this point is astonishing, yet there are near-oculists who work without it, and the jewelers have to. Anyone who accepts a pair of glasses without this procedure does so at his own risk. Any so-called oculist who so prescribes them is a wretched bungler and culpable to boot. It is worse than a crime, for it may, for the patient, shut the door on good health, good living, and good fortune. Therefore, if you have a patient for whom glasses have been ordered and no mydriatic has been used, you can safely assume that these are incorrect and that little or no benefit will result from their use.

In the second place, notwithstanding the use of the cycloplegic, the lenses may be incorrect. For example, the patient's static refraction is a plus .50 sphere combined with a plus .75 cylinder (axis as yet undetermined). Either a plus .62 sphere combined with a plus .62 cylinder, or a plus .37 sphere combined with a plus .87 cylinder, will, in these three cases, correct perfectly the principal meridian. Vision will be about equally good, yet only with the first, the exact correction, will comfort follow. This is assuming also that the cylinder has been correctly placed. If the proper axis be at 90°, five degrees either side of this will induce discomfort instead of bringing relief. Therefore, only mathematically correct refraction work can be depended upon to cure eyestrain and the conditions which result therefrom. If this be appreciated it will be seen how futile is all this painstaking work if the patient insists on placing these lenses before the eyes in some contrivance that will not hold them squarely and firmly in position. The little girl who said "A lie is an abomination unto the Lord, but an ever-present help in time of trouble," might have said the same about eyeglasses. There is occasionally a nose which will hold eyeglasses in position, but how often do you see a pair straight across the face and in perfect adjustment? Not once in a hundred times. It is the height of folly to spend valuable time to determine the correct axis for the cylinder and then have the whole work brought to naught by a tilted eyeglass. Astigmatics should wear spectacles, and these only in rigid frames. Furthermore, it should be clearly understood that it is a waste of time and money unless the patient is willing to wear these glasses all the time; simply to use them for close-work does no good. Think of all the possible sources of error with the refraction gone over without a cycloplegic and then the lenses put into eyeglass frames, and you will cease to wonder why the patients will come back with the complaint that they are even worse than before they put on glasses. The eye is a vital organ, not a machine, and is subject to changes incident to the condition of its possessor; therefore it should not be assumed that glasses once fitted are

fitted for all time. Often temporary relief is obtained, and then the symptoms return: this is an indication for another examination. More particularly is this true for the child whose refraction is subject to frequent changes. In children, once a year at least there should be a reexamination: in the adult, once in about two years is the rule. There are also brought about changes in the nutrition of the eye, in its tension, and in the muscle balance by wearing a first correction, and for this reason a neurasthenic or one suffering from a reflex neurosis should have, in the beginning, the refraction worked out at frequent intervals.

Assuming that the oculist has done his part well, that he has given the proper lenses in the proper frames, examined both, and seen that the optician has filled the prescription correctly, put them upon the wearer and adjusted them in position, then also is demanded the cooperation of the patient. He must, if good results are to be obtained, wear the glasses constantly, keep them clean, and exactly in adjustment. Any violation of these rules means failure to obtain relief.

In conclusion, let me epitomize the essentials of this paper:

The ocular conditions which give rise to eyestrain may be refractional, accommodative, or muscular. The result is loss of neuricity. The effects are remote and reflex, and may be expended upon any organ, group of organs, the nervous system as a whole, or its separate divisions.

It is the little refractional errors which give rise to the greatest trouble: poor vision and eyestrain are not concomitant conditions, but exactly the reverse.

It is imperative to have the eyes of all children, of school age, examined under atropine: not only may health and comfort be conserved, but their whole future may rest upon this simple thing.

Refractional errors of high degree should be corrected, not because of any reflex disturbances, but to save the eyes from disease and to give their possessor better vision.

The investigation of all obscure nervous phenomena should begin with the eyes; often it will be necessary to go no further. Typical sick headache is pathognomonic of eyestrain; if it is not cured, in 99 per cent. it is the fault of the refractionist.

Finally, you cannot cure the disease unless you apply the remedy. Nearly right glasses will surely aggravate the symptoms, and relief can be obtained only by mathematically correct lenses in mechanically perfect settings.

DISTURBANCES OF GASTRIC SECRETION:

A PRACTICAL STUDY.

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Anatomicophysiological.—The longitudinal fibers of the muscle of the esophagus are continued in their course toward the stomach: there they diverge radially, a strong bundle traveling along the lesser curvature toward the pylorus. At the greater curvature they are least developed. A contractile shortening of the muscular bundle at the lesser curvature serves to approximate the two ostia of the stomach, simultaneously raising the region of the fundus. On the other hand, owing to the slight development of the musculature at the greater curvature, it is just this part which in the presence of an abnormal demand is distended most and foremost. The longitudinal fibers then converge toward the pylorus in the shape of a funnel, and distinctly engage that part of the stomach which is known as the ampulla pylori, finally merging with the duodenum.

The annular fibers of the gastric muscle, however, become denser in the cardiac region, forming the cardiac ring, encircle the body of the stomach in uniform convolutions, and are probably the greatest contributing factor in demarkating the ampullar portion against the rest of the stomach by assuming an increased thickness and forming a strong ring—the sphincter proper of the pylorus—at the orifice of the stomach.

Functionally the ampulla is the real motor area of the stomach, the fundus representing more or less the digestive chamber in which chiefly the secretion of hydrochloric acid takes place, while the secretion of pepsin and rennet seems to be more evenly distributed over the entire stomach.

The ampullar portion of the stomach plays a still more important rôle in the motor mechanism of the stomach. Direct stimulation on the part of the gastric contents and reflex stimulation on the part of the small intestines (Pawlow) cause the ampullar portion of the stomach to contract almost simultaneously with the sphincter pylori like a cap pulled over the contents of the stomach which is thrown against it, allowing, in the initial stage, the fluid part of the contents still to escape through the pyloric orifice, while the more solid part is thrown back into the gastric cavity to be mixed again with gastric juice. These regular peristaltic movements and the noises produced by the pyloric passage may in favorable cases be perceived.

Experiments.—First Experiment.—A patient suffering from achylia gastrica ingests on an empty stomach 250 c.c. of lukewarm water, syphoning taking place a quarter of an hour later. The result shows that after this short time most of the ingested fluid has found its way into the duodenum; after half an hour the stomach is nearly always empty.

Second Experiment.—The same patient ingests upon an empty stomach 250 c.c. of a 1-10 normal hydrochloric-acid solution (Jaworski). After half an hour, more than half of the ingested fluid is recovered; only after the lapse of an hour or more the stomach is found to be empty.

Control Experiment.—A hydrochloric solution of the same strength is administered to a patient with a healthy stomach. In this case a larger portion of the fluid is recovered than in the case of the patient suffering from achylia gastrica, the withdrawals being made after the same lapse of time.

Third Experiment.—Ewald test breakfast is ingested by the patient suffering from achylia gastrica: upon withdrawal one hour later only a small quantity of the ingesta is recovered, which is inspissated and only slightly changed in appearance.

These three experiments, which I have conducted repeatedly, chiefly for the purpose of elucidating the function of the pylorus, justify the following

Conclusions.—(1) In a quiescent state the pyloric ring admits of the passage of gastric contents, though only to a minimal extent. At the same time there seems to exist a state of abnormal pyloric relaxation, which, however, may not be described as paralysis.

(2) It appears that the very susceptibility of the pylorus serves to regulate its function.

(3) The sphincter of the pylorus is stimulated not only by way of reflex from the small intestine,

but also direct from the stomach, either chemically or mechanically.

The pathological changes being merely the expression of a change or exacerbation of the physiological process, it is possible to deduce pathological conditions from the normal functions.

In hypochlorhydria, and even more so in achylia, the factors which normally regulate the pyloric functions are absent, with the consequence that the patent sphincter admits of a more or less accelerated passage of the gastric contents. The fluid portion escapes into the duodenum in a very short time, while the more solid portion of the ingested food remains deposited in the stomach for a longer period in consequence of the stronger mechanical irritation. We have therefore not to deal with hypermotility, as has so far been erroneously assumed.

The functional disturbances of the pylorus have up to the present not received that amount of attention which this important chapter of gastric pathology merits. If we consider the indirect and direct consequences which even a short-lived disturbance of the normal mechanical function of the pylorus occasions, it must be admitted that a considerable portion of gastrological affections may be attributable to functional derangements. This is particularly pronounced in those cases of sphincteral disturbances caused by increased secretion of hydrochloric acid. Here we have to deal with the unpleasant consequence of continuous spasms of the sphincter pylori, which may be accompanied by more or less painful paroxysms.

Maxims.—1. Every case of hyperchlorhydria is really one of enhydrochlorhydria, *i. e.* the secretion of a fluid with a normal percentage of HC_1, which, however, is secreted in large quantities, forming, so to speak, an engorgement of hydrochloric acid. Again, hyperchlorhydria has frequently been identified with hypersecretion. Riegel already distinguished between these two affections in spite of Pawlow's experiments, or, perhaps, just on the strength of them. Bickel, too, seems to hold the same opinion. The difference is probably this, that in hypersecretion large quantities of HC_1 are very rapidly exuded, while in hyperchlorhydria there are probably large quantities of gastric juice which exude only gradually.

2. The pain need not necessarily be caused by an ulcus (Bourget)*; the mere presence of abnormally abundant secretion of normal concentration may occasion severe pain, owing to the irritation which the fluid exerts upon the pylorus.

3. As mentioned above, in nearly every case of hyperchlorhydria there occurs a secondary spasm of the pylorus of varying duration and pain. Its immediate consequence is the retention of the gastric contents, which occurrence may in the beginning be compensated by hypertrophy of the gastric musculature. This, however, is not always the case, especially in the initial presence of atonic muscles, interfering either completely or partly with such compensation.

4. Erosions and ulcers, often associated with hypersecretion, are a frequent cause of the severe paroxysms of pain which accompany the contractures of the pyloric ring, the pains increasing in intensity the nearer the anatomical lesions are situated to the pyloric ring (Bourget).

5. The majority of hyperchlorhydria cases are of neurotic origin.

6. Hypochlorhydria of a more or less permanent nature is much less frequent than hyperchlorhydria, while achylia is rarer still. Excluding the rare cases of hypochlorhydria of neurotic origin, deficiency of hydrochloric acid is often observed in organic affections of the gastric mucosa, in carcinoma, in anemic conditions and intoxications; in short, in conditions which are accompanied by faulty nutrition of the gastric parenchyma.

7. Hypersecretions are either (*a*) transitory, or (*b*) continuous.

The transitory cases are subdivided into (1) hypersecretio transit. digest. simplex; (2) hypersecretio transit. digest. prolongata; (3) hypersecretio transit. digest. periodica; the continuous cases into (1) hypersecretio continua simplex; (2) hypersecretio continua exacerbata.

8. Hydrochloric findings in general, whether disclosing absence, normal presence, or excess of HCl, present a symptom susceptible of many interpretations, as is evident from the above explanations, and which can only be diagnostically utilized in conjunction with a series of concomitant manifestations and the result of physical and other methods of examination.

Therapy.—Only a few words will be needed in regard to the treatment of hypochlorhydria and achylia, in so far as it is indicated to replace the deficient hydrochloric acid, without taking into special consideration the causes giving rise to these affections. Leo recently made interestnig and practically important investigations in regard to the effect and method of administration of HCl-pepsin solutions. He found that the exhibition of HCl in combination with pepsin enabled the affected gastric mucosa to respond to the ingested actual food with increased formation of HCl; further that the solution causes in the stomach already a distinct protolysis. This fact might be of importance in achylia, especially as the same solution also exerts an important influence upon the intestinal digestion of albumin. Add to this the stimulation of the pancreatic secretion and bile, and the favorable cures of diarrhea dependent on deficiency of hydrochloric acid seem susceptible of explanation. The HCl-pepsin solution is administered shortly before or during meals in order to obtain the best effect upon the gastric parenchyma.

The solution is composed as follows:

Acidi muriat. puri
Pepsini sicci, āā 10.0—5.0
Aquæ destillat. ad 50.0

Sig. One-half to one teaspoonful at every meal in a glass of sweetened tea, to be taken through a glass tube.

In order to relieve the derangement of rhythmical function of the pyloric ring which occurs in hypersecretion, remedies should in the first place be applied which, like the silver solutions and bismuth preparations, are supposed to have an astringent and antacid effect. The silver solutions in particular are also said to stimulate the mucous secretion according to recent investigations of J. Kauffman, and thereby form a protective layer against the attacks of excessive HCl secretion, or even of normal HCl secretion in the presence of a hypersensitive gastric mucosa. The process is likened to the recent successful administration of oil in ulcerative and kindred conditions, on the assumption that the oil, aside from its mechanical protective effect in the stomach itself, and neutralizing the HCl, may cause a reflex reduction of HCl by stimulating the pancreas. For the same purpose I have already in the nineties* used one-per cent. solutions of ferrum sesquichloride, and latterly Bourget has arrived at the same result.

*Die Krankheiten des Magens, by Louis Bourget.

**Therapeutische Monatshefte*, April, 1896.

Both the causal and symptomatic demands are best satisfied by intelligent application of the alkalies, their exhibition bringing about not only a reflex reduction of the HCl secretion from the small intestine, but also having a palliative effect upon the spastic pyloric occlusion by directly blunting the power of the hydrochloric acid. The alkalies will therefore have the most beneficent effect if taken half an hour before meals and two to four hours after, these being the periods at which the hydrochloric values usually and demonstrably attain their climax.

Bourget has shown that alkalies in one-per cent. solutions are capable of attaining the desired end, namely facilitating the rhythmical opening of the pylorus, as in these cases there is not so much a question of completely neutralizing the hydrochloric acid, as of lowering the power of the secretion by one or two degrees. Concentrated solutions of the alkalies are out of the question, constituting as they do an increased stimulus to the secretion of hydrochloric acid.

A subsequent increase of HCl may be counteracted by repeated administration of small doses of the same alkaline solution.

℞ Sodii bicarbon. 20.0
Sodii phosphor.
Sodii sulphur. āā 6.0
Extr. fl. Condurango 10.0
Aquæ 120

Directions—Add 2 quarts of water, take ½ to 1 glassful before meals and the same quantity 2 hours after light meals, or 4 hours after heavy or meat meals.

Should there be any complications indicating a renewed augmentation of hydrochloric values, I order tablespoon doses of the same solution, and more.

This method of treatment has not only been successful in rather chronic cases, but, in conjunction with one-per cent. solutions of the sesquichloride of iron, taken at bed time and on arising, has proved very efficacious in cases of recurrent ulcus.

In conclusion a few words concerning the diet in hyperchlorhydria. Permissible are: tea with cream, rich cocoa, toast, much sweet butter, eggs; all cereals boiled in water and inspissated, with hot milk, cream, or sweet butter poured over; meat which has been boiled a long time, the white sorts preferred; steamed vegetables with butter poured over; sweet fruit; farinaceous substances in the shape of puddings, provided they do not cause pyrosis.

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DRAINAGE OF WOUNDS.*

By R. W. KNOX, M.D.,

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The treatment of wounds constitute a considerable portion of our minor surgery and offers a field for discussion in which there has always been much difference of opinion. It might be stated at the very outset that wounds differ so greatly in their character and location that the treatment must necessarily vary with the exigencies of the case. While this is true to a limited extent, the underlying principle is the same in the majority of cases. It would be an insult to the intelligence of this audience to state that all wounds should be made and kept as surgically clean as possible, and that punctured and pocketed wounds should be laid open and drained and that pus should always be evacuated. These are self-evident truths, about which there is no difference of opinion, and yet we see wounds that fail to heal and wounds that cause infection, both local and general, in spite of the ordinary methods of handling. It is a well-known fact that the majority of wounds of any magnitude become infected at least locally. The infection may depend on the condition of the patient physically, as well as the character of the injury. We have all seen slight injuries result seriously, which we have attributed mainly to the peculiarly virulent action of the infecting agent. As a rule, however, the deeper the injury and more severe the laceration and attendant contusion, the greater the danger. The rupture of the smaller blood-vessels, with its resultant ecchymoses and effusion of serum together with destruction of tissue, furnishes an excellent culture medium for the development of germ life.

To realize the futility of freeing a wound entirely of its infection, we have only to consider the difficulty of completely sterilizing the normal hand where the conditions are much more favorable for cleansing and disinfection than in almost any character of wound. With this idea in view, viz., that wounds are rarely sterile, it has always seemed rational to me that a method should be adopted whereby drainage should be facilitated to the highest possible degree, and in this way prevent the inconvenience, if not danger, from an accumulation of septic products. Any method that may be effectual must depend largely for its virtue upon its early adoption. No better object lesson can be found than the occasional mistake of closing with sutures deeply contused wounds and noting the untoward results, as well as the immediate relief when the pent-up secretions are relieved. Gauze and drainage tubes are excellent agents when indicated on account of the nature of the wound, but by far the safest, best and most effectual and unvarying in its results as a means of getting perfect drainage is the use of moist heat. Heat and moisture kept constantly applied to a wound favor the elimination of its poisonous products much more rapidly than any other means at our disposal. It is the rule to use moist heat only on wounds already known to be infected, but it is just as rational to use this with the idea of preventing infection. Certainly there is no surer way of keeping a wound clean, and at the same time relieving pain. Also in my opinion a general infection from an injury would be among the surgical curiosities if this plan was always adopted; and this, no matter how severe the injury or how dirty the wound. I have had abundant opportunity to test this in cases of injury by revolving cogwheels or when a limb has been rolled over by a heavy object and dirt and grime has been ground into the deeper fascia and even the muscles themselves.

The temperature of the dressings in such cases must be kept evenly and continuously about 125° Fahrenheit. It should be borne in mind that the skin does not tolerate as high degree of moist as dry heat, and the nurse should be carefully instructed along these lines. The skin may be blistered by over-heated bags, and yet the patient be entirely comfortable. In the absence of a thermometer, the nurse should be instructed to use water of a temperature that her fingers can tolerate for ten seconds

*Read before the Bexar County Medical Society, March 12, 1908.

without serious discomfort. Certain parts, notably the hands and feet, stand a greater amount of heat than other parts of the body, and it is well to use a higher temperature in those cases, when a general infection has already begun. After this treatment is begun a marked drop in the temperature is noticed within the first twenty-four hours. No general infection occurs when treatment is begun early, although from the very character of the wound we would expect it under ordinary methods of handling. The older method of treatment was to cut well outside of the injury and leave no lacerated tissue for fear of general infection and its possible consequences. Valuable portions of the anatomy, notably the hands and feet, have no doubt been thus needlessly sacrificed. With the danger, however, of blood poisoning removed, we can afford to be far more conservative, and the laceration of a member does not necessarily mean its entire loss. We recognize the fact that the most cruel of all wounds are found among railroad injuries and where the most radical operation is often the most conservative, yet a severely injured member that might otherwise have been sacrificed may by proper treatment be saved and become useful. In order to accomplish the results expected much care must be exercised in the preparation of the dressing, such as sterilization, etc., as well as a proper application, including continuous heat and moisture kept up for a proper length of time. A moist dressing is of little service if left unchanged and allowed to become a dry dressing after a few hours. No harm is done to the healthy skin or tissue unless a careless nurse has allowed the dressings to become overheated. By this method all pain is relieved, the swelling is reduced, a beginning infection is abated, and granulation rapidly springs up. A general infection in wounds, if properly treated, is rare after the first few days, and healthy granulation is an invariable sign that the danger is past and the more active treatment can be discontinued. It is remarkable with what quickness a devitalized tissue is thrown off, leaving only material that the original injury had not destroyed. When there is no further need for the warm applications and a considerable extent of raw surface exists, the use of dressings saturated with boroglyceride is especially useful. It acts as a semimoist dressing in that it facilitates drainage, keeps the wound free from odor and pus, prevents sticking of the dressing to the raw surface, and does not interfere with cicatrization or the growth of skin grafts. No other dressing, with which I am acquainted, answers so many valuable indications and has so few objections at this stage of the treatment. For the retention of heat and moisture in the class of cases mentioned, thick heavy dressings should be employed. I am in the habit of using what may be called the blanket dressing of the size and shape of towels, either of cotton or flannel. These are wrung from hot water and in many cases instead of enveloping the limb are folded and laid beneath it and alongside and over the limb and supported by hot water bags, while beneath is placed an oil cloth or Kelly pad. In this way an almost continuous irrigation can be used if necessary and especially in those cases where the limb has sustained a compound injury and handling is painful. A solution of boric acid is best for irrigation and a teaspoonful of formalin to the quart of water is an excellent deodorizer. On the average case the dressings should be changed about twice in twenty-four hours.

In the case of minor injuries, such as pricks, punctures, slight lacerations, etc., bad results do not usually follow, but in my opinion it is much safer and nearly as convenient to apply moist heat, rather than any of the long list of healing salves, powders, or liniments. All of these act more or less as irritants and retard rather than promote healing. In fact anything that tends to retain secretions within the wound is at best an uncertain agent. Nature will do the healing in the best possible manner if not handicapped by a misdirected kindness on the part of the doctor.

The saddest cases with which we have had to deal, an opprobrium to the art surgical, are those which have started as an insignificant injury and afterwards involved important structures. A striking example of this is found in slight initial injuries to the fingers and hands, afterwards involving the tendon sheaths of the palmar surface and wrist with a resultant permanent partial disability. In gunshot injuries we have the same danger that could be avoided by proper drainage.

In conclusion my excuse for presenting this subject is the settled conviction that we are wide of the mark if we fail to appreciate the value of plain moist dressing, as a means not only of preventing, but of relieving infection. The rationale of this method of treating wounds, besides that of increased drainage, will not be considered from the fact that I have no well-defined ideas to to its pathological action. Our knowledge of the action of heat upon inflammation in general is at best only empyrical. Like many other good things the idea is not new, as witness the effect of the flaxseed poultice as used by our grandmothers from time immemorial. This form of poultice is somewhat uncleanly and liable to become infected in careless hands, but under the proper conditions it answers a most admirable purpose.

The length of time moist dressings should be applied depends on the nature and gravity of the wound as well as the early or late defervescence of symptoms. In extensive or deep lacerations, the most important consideration is an early application to prevent an infection spreading beyond the original limits of the wound. The success of this treatment will depend upon the careful and efficient manner in which it is carried out. Next to the moist dressing itself in importance is a clean, able, and conscientious nurse. A surgeon who is fortified with these two important aids, need not fear the disastrous results that follow unclean wounds.

I would not be misunderstood as advocating this form of dressing for all cases. When a wound is slight and known from its very nature and handling to be aseptic, a dry dressing is indicated. When in doubt, wet dressings are best and may save some future anxiety. If we can free ourselves from the old idea that heat and moisture favor suppuration, we will have made long strides toward the proper treatment of wounds.

Immigration Statistics.—During the month of March immigration into this country decreased 76 per cent., as compared with the same period in 1906, and 77 per cent., as compared with 1907. The total number of immigrants entering the country was 32,517, whereas for March a year ago it was nearly 140.000. The greatest decrease was in the number of Italians coming to this country.

SOME OBSERVATIONS ON THE OPHTHALMO-TUBERCULIN REACTION.

By THEODORE B. SACHS, M.D.,

CHICAGO.

Since the announcement by Birch-Hirschfeld and later by Calmette of their observations on the reaction produced in the conjunctivæ of tuberculous subjects by the instillation of a solution of old tuberculin (this being proposed as a new diagnostic test of tuberculosis), investigation along these lines has been carried on by numerous observers all over the world. In most cases, as suggested by Calmette, a 1 per cent. solution of precipitated tuberculin was employed for instillation into the conjunctival sac, and the result recorded as reaction—negative, mild, moderately severe, or severe.

Experience so far accumulated points to the occurrence of an inflammatory conjunctival reaction in a vast majority of patients positively tuberculous, also in a large number of cases of suspected tuberculosis, and in a small fraction of those pronounced positively nontuberculous. The test is still *sub judice,* and its ultimate value as an accessory diagnostic method in suspected tuberculous cases can be determined only by further investigation, which no doubt will be energetically carried on, in view of the vast importance of any new method that may throw some light upon the obscure phenomena of a disease so common and still so frequently obscure in its early manifestations.

The solution of numerous problems in connection with the ophthalmo-tuberculin reaction of Calmette is absolutely essential before a true estimate of its value can be established; most important of these is the nature of the conditions favoring or preventing its occurrence.

In applying this test to various groups of cases at the Edward Sanatorium of the Chicago Tuberculosis Institute, in the tuberculosis clinic, and in my private practice, the following results were obtained.*

1. Cases of pulmonary tuberculosis (with tubercle bacilli in the sputum), 22 cases. Mild reaction (+), 8; moderately severe (++), 8; severe (+++), 2; negative (—), 4. Seven cases, in which a mild reaction occurred, were classed under the heading of moderately advanced pulmonary tuberculosis of the chronic type; one case was in the same stage but was running an acute course. Of the 8 cases, with moderately severe reaction, four were incipient (in good general condition); four — moderately advanced cases of the chronic type. The two cases giving a severe reaction were moderately advanced but in fairly good general condition. Of the four with negative reaction, all were in the far advanced stage (considerable emaciation, pronounced anemia, etc.).

II. Cases of pulmonary tuberculosis (no tubercle bacilli in the sputum), 39. Reaction negative, 11; doubtful, 1; mild, 5; moderately severe, 22.

The eleven cases with negative reaction were all in the incipient stages of pulmonary tuberculosis. Three of these were just recovering from a moderately profuse hemorrhage; three were considered cured cases of pulmonary tuberculosis (under observation for two years previous to the instillation of tuberculin); one was a twelve-year-old girl with Pott's disease and indefinite findings in the lungs, and one—a boy twelve years old in the incipient stage of pulmonary tuberculosis. The one doubtful reaction was in a patient in the incipient stage. Four of the five cases giving a mild reaction were in the incipient stage; one an arrested case of moderately advanced disease. Of the twenty-two cases with moderately severe reaction, eighteen were in the incipient stage, two moderately advanced (arrested), one incipient (arrested), one a case of tuberculosis of the cervical glands in a boy fifteen years of age (pulmonary findings slight). Of the sixty-one tuberculous cases, in which the test was used, twelve were between eleven and twenty years of age, forty-nine between twenty and forty years.

III. Cases of suspected tuberculosis (suspicion based on some suggestive symptom, such as slight hemoptysis, etc., without any additional corroborative symptoms or signs). 11. Reaction negative, 9; mild, 2.

IV. Physicians and nurses in frequent association with tuberculous patients, 6. Reaction negative in all.

V. Various diseases (tuberculosis excluded by study of clinical history and findings on physical examination), 22 cases. Reaction doubtful, 3; mild, 1; negative, 18. Doubtful reaction occurred in one case of chronic valvular disease, one of chronic parenchymatous nephritis, and one of acute bronchitis. One case of chronic bronchitis and emphysema gave a mild reaction. Negative reactions occurred in three cases of chronic gastritis; two cases of chronic interstitial nephritis; three of neurasthenia; two of chronic rheumatism; three of mitral insufficiency; one each of pleurisy following contusion of the chest, Basedow's disease, syphilis, cirrhosis of the liver and diabetes.

VI. Normal individuals, 10. Reaction negative in all. In recording various groups of cases in which conjunctival instillation of tuberculin is practised it may be desirable to classify them according to stage, activity of the process, age of the patient, extent of association with tuberculous patients, etc. I have deemed it proper at this stage to record only my observations, refraining from any generalizations. In sixty-one cases, positively tuberculous, the reaction was negative in about 20 per cent. of this number (some of the latter in the advanced stages of the disease). In thirty-eight individuals, pronounced free from tuberculous disease, a positive reaction occurred only once. No harmful after effects of the tuberculin instillation were present in any of the cases, even with severe reaction.

My thanks are due to my associate, Dr. M. Biesenthal, for his assistance in the observation of cases.

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*One drop of a 1 per cent. aqueous solution of precipitated old tuberculin (as used by Calmette) was employed in all cases. The results were classified according to the schema proposed by Dr. Edward R. Baldwin, Saranac Lake, N. Y. (similar to one recently given also by Professor Comby): Negative, no difference in color when lower eyelids are pulled down and compared; doubtful, slight difference with redness of caruncle; + = distinct palpebral redness with secretion; ++ = ocular and palpebral redness with secretion well marked; +++ = deep injection of entire conjunctiva with edema of lids, photophobia and secretion.

Suicide Statistics.—According to statistics recently published by the Swiss Government, there have committed suicide during the last thirty-five years 16,640 persons in Switzerland, 323,600 persons in Germany and 274,000 persons in France. German official figures put the number of suicides in Europe yearly at 70,000. Cases in the German Empire itself have risen from 10,510 in 1895 to 12,730 in 1905. In America the number is estimated at about 3,000 annually, and is increasing.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE SPASMOPHILIC DIATHESIS.

THAT the older conception of the important rôle played by diathesis in the etiology of disease has not entirely died out is evidenced by the important contributions recently made by Duckworth and others to the literature of this subject. That diathetic conditions have been weighty factors in the evolution of diseases peculiar to childhood, has been exemplified by the almost obsolete "scrofulosis" of early medical terminology, a term which has recently been transmuted at the hands of Czerny into the more elegant and scientific expression, "the exudative diathesis." In addition to this there has lately appealed to the German pediatrists particularly the necessity of coining a new expression, the "spasmophilic diathesis," comprising a group of cases of fundamental importance and widespread existence during the early years of life. This term was first applied by Thiemisch (*Medizinische Klinik*, No. 17, 1906) to the large group of cases occurring during childhood, in which there is an abnormal mechanical and electrical excitability of the peripheral motor nerves, presenting itself under three different clinical aspects, namely, tetany, laryngeal spasm, and general convulsions. The characteristics of this diathesis are its hereditary nature, its association with artificial feeding, and its highest incidence during winter and spring, and during the latter half of the first and the first half of the second year of life. The keynote to the prophylaxis and therapy of this condition is the use of breast-feeding.

In support of the theory advanced that the spasmophilic diathesis is a form of latent tetany are the results of the physiological investigations made by F. Pineles (*Jahrbuch für Kinderheilkunde*, Vol. 66, No. 6) on the pathogenesis of infantile tetany. This observer found that infantile tetany is identical with the postoperative tetany of adults, the cardinal symptoms in both being a mechanical and galvanic hyperexcitability of the peripheral motor nerves, as revealed in Trousseau's, Erb's, and Chvostek's symptoms; at the same time there is a peculiar reversal of the law of response to electrical stimulation, the cathode opening contraction occurring with currents less than five milliampères, and the anode opening contraction exceeding the anode closing contraction. Besides, common to both conditions, are the peculiar tonic contraction of the fingers, the epileptiform attacks, and the trophic disturbances.

At the meeting of the German Pediatric Society, held in Dresden in September, 1907, Professor Escherich referred to the fact that galvanic hyperexcitability is a widespread phenomenon during childhood, recurring even in apparently healthy infants. Thus, of 329 infants in the Vienna hospital, the percentage showing this condition varied from 2 in the first month of life to 52.6 in the sixth month, the majority of instances being furnished by artificially-fed and rachitic children. Escherich noted that within the past decade the conception of tetany has broadened into that of one of the most comprehensive of the disorders of early life, including the cases of laryngeal spasm and eclampsia, occurring in early infancy, no less than the chronic cases of so-called tetany of later childhood. The excessive excitability of the nervous system to galvanic stimulation is a diagnostic point of cardinal importance in all these conditions. There are to be differentiated two groups of cases, the tetanoid condition, and tetany proper. In the former there are mechanical and electrical excitability, with various convulsive manifestations, while the latter group is characterized by the presence of muscular twitchings, localized spasms, spasmus glottidis, and general convulsions, in addition to the electrical and mechanical phenomena. Tetany is further classified into tetania infantum, occurring up to the third year of life, and tetania puerorum, occurring after this age. The occurrence of tetany as a sequel of extirpation of the thyroid gland laid the foundation for the discovery of the actual pathogenesis of this condition.

It is not, however, in anomalies or absence of the thyroid gland that the cause of tetany or the tetanoid condition is to be found. With the abundant material provided by the Vienna pediatric clinic at his disposal, J. Yanase studied the structure of the parathyroids in cases of increased galvanic irritability in children (Proceedings of the German Pediatric Society, September 16, 1907), and discovered the following pathological processes: Amyloid degeneration, miliary tuberculosis, round-celled infiltrations, microbic emboli, and, most frequently, hemorrhages into the glandular substance. In eighty-nine cases hemorrhages were found thirty-three times, that is, in 37 per cent. of the cases. The first traces of the parathyroid hemorrhages were discernible during the first two weeks of life, and were attributed to intrauterine asphyxia. Later, and continuing until the end of the first year, these bleedings became encapsulated, the blood pigment was taken up by leucocytes and deposited in the connective tissue. From this time on, until the fifth year of life, the only evidence remaining was the presence of this pigment, which afterward disappeared entirely. It is explained that the hemorrhages damage the antitoxic functions of the parathyroids, and thereby induce the disposition to the tetanoid condition.

THE AGE OF EFFECTIVE WORK.

IT will be remembered that Professor Osler said a few years ago, in the speech which has made him famous, that the "effective, moving, vitalizing work of the world is done between the ages of twenty-five and forty," and that we might subtract from

the sum of human achievement all that has been done by men over forty without missing anything of practical value to the world. Other things he said jokingly in disparagement of the world's workers on the shady side of forty, but that he was in earnest in making the statement above quoted he has never denied so far as we know. This astounding statement, coming from one of Osler's culture and wide reading, challenged attention and set men to thinking of the great achievements of middle-aged men and even those far advanced in years, and numerous examples of this kind were collected. Nevertheless, the lists of old workers were comparatively short, and an uncomfortable feeling remained that perhaps the old boys were after all of little use in the world, mere veterans lagging superfluous on the stage. Any such doubts may now be set at rest by reading the really wonderful record of achievement by men, some long past middle life, and all crossed the "dead-line" of forty, which Dr. W. A. Newman Dorland presents in the April and May issues of *The Century*.

Leaving out of the reckoning the artists—poets, musicians, painters, sculptors, romancers, essayists, historians—whose work has brought joy into the world, we are reminded by Dr. Dorland's record that not a little of the practical work, "the effective, moving, vitalizing work of the world," has been accomplished by men over forty. Among the things that would be missed were we to subtract the work of the older men would be printing from type, the discovery of dynamic electricity, of oxygen, of vaccination, of the circulation of the blood; the invention of the reflecting telescope, of the Bessemer process of making steel, of the double-acting steam engine, of railways, and all the inventions and discoveries, and the advances in chemistry, medicine, manufactures, and commerce which have naturally followed these epoch-making achievements. History would have to be rewritten, for the names of Washington, Lincoln, Grant, Sherman, Kossuth, Talleyrand, Peel, Cavour, Nelson, Cromwell, Richelieu, Luther, John Knox, Palmerston, Bismarck, von Moltke, Garibaldi, Columbus, and a host of others would have been forgotten in the absence of their most notable deeds. In science, in manufacture, in commerce, in diplomacy, in literature, in painting, in music the gaps would be many and great, and the world would be centuries behind where it is today could the results of the work of men who had passed Osler's limit of forty years be eliminated.

Approaching the question from another point, Dr. Dorland has computed the average age of the great benefactors of the race at which each performed his masterwork, and finds that for the workers the average age is forty-seven, and for the thinkers fifty-two. The corollary of this is evident; it is, the writer says, that "provided health and optimism remain, the man of fifty can command success as readily as the man of thirty." The facts which Dr. Dorland brings forward as result of this painstaking research prove beyond question the absurdity of Osler's assumption, and should give heart to those who may have been influenced more or less unconsciously by his gloomy address to regard themselves as out of the race and past the age of usefulness to the world and their fellows.

ANATOMICAL CHANGES IN THE ADRENALS IN ARTERIOSCLEROSIS.

Four years ago Josué produced atheroma in the aorta of rabbits artificially, by intravenous injections of adrenalin. He believed it was similar in structure to atheroma found in the human aorta and therefore concluded that the latter was probably due to a change in the adrenals. This change he claimed consisted of a hyperplasia which caused an increased secretion, the excess getting into the general circulation and causing arteriosclerosis. Since that time many observers have shown that the artificially produced and the human arteriosclerosis are quite different histologically, the most marked changes of the former being in the media while those of the latter are found in the intima. While this fact has been repeatedly pointed out no one has hitherto made any attempt to verify or contradict Josué's other claim that an increased secretion of the adrenals caused the arteriosclerosis.

Recently, however, in an interesting article in the *Zeitschrift für klinische Medizin*, Volume 64, Nos. 3 and 4, H. Landau has reported in detail his histological findings in the adrenals of sixteen persons who during life had presented various degrees of arteriosclerosis, the majority of them intense degrees, either local or general. He also examined the glands of four patients who died of tuberculosis and of two who died of pulmonary emphysema. His pathological findings included a thickened capsule with numerous large bundles of smooth muscle fibers in it, also hyperemia, and small-celled infiltration. When there was peripheral arteriosclerosis similar changes were found in the vessels of the gland, with occasional smooth muscle bundles between them. There was usually an increase of connective tissue and atrophy of parenchyma cells, this at times having gone on to a cirrhosis; the latter condition when present was accompanied by an increase of pigment cells. In a few cases there was present a diffuse hyperplasia of the gland tissue. In two cases amyloid degeneration was found.

We can readily see that all these changes are of an atrophic and inflammatory nature and are no different from the changes found in other organs in cases of arteriosclerosis. It might be said by some that increase of pigment cells and diffuse hypertrophy point to an increased function of the adrenals. This view can hardly be taken, however, when we consider that these changes were present only in a few cases and that they might be explained on the ground that increased pigment is often found in the presence of atrophic changes and that hypertrophy of one part of an organ frequently accompanies atrophy of other parts of the same organ.

Landau's pathological findings therefore do not substantiate the presumption of Josué as regards the part which the adrenal plays in the etiology of arteriosclerosis. In no case did Landau find any changes in the individual cells or in the general structures of the gland which could in any way lead one to believe that a definite causal relationship existed between it and arteriosclerosis.

The Hydrostatic Lung Test.

Whether or not an infant was stillborn is frequently a question of great importance. Even though it may have had a brief extrauterine existence without breathing, the best evidence that it has lived is that it has breathed. To prove the latter the lung test may be said to head the list; it includes the estimation of the height of the diaphragm, the amount of space the lungs occupy in the thoracic cavity, whether they cover the thymus and heart, their color, and whether they float in water or not. The hydrostatic test as a proof of life was first used in court in 1683; before long, however, objections were raised against its real value. It has been demonstrated time and again that any of the methods of artificial respiration, intrauterine breathing of air (vagitus uterinus), and gases caused by putrefaction, can bring air into the lungs and cause them to float, yet the child may never have breathed outside of the uterus. In the *Zeitschrift für Geburtshülfe und Gynäkologie* (Vol. 61, No. 3) F. Ahlfeld has shown that lungs can float even though they contain no air. Such lungs he found contained vernix or meconium, both lighter than water. On the other hand, it has been found that lungs of infants who lived from five to eighteen days did not float, and that other lungs which sank contained air in places when incised under water. We thus see that the fact of the child having lived cannot be excluded when the lungs sink, and that floating lungs point to the child's positively having lived only when artificial respiration, putrefaction, vagitus uterinus, and the other factors above mentioned can be excluded, and when the other positive lung signs are present. The hydrostatic test is the best of those which we possess to prove life has existed, but it is by no means as infallible and valuable as it is generally believed to be.

Histological Evidence of Acidosis.

The theory that the striking clinical picture of acute gastroenteric intoxication of infants is in many cases due to the condition of acidosis has gained much ground within recent years. The excess of ammonia and of acetone in the urine of such patients, the profound prostration and apathy, the frequent fatal outcome, all show a striking analogy to the type of such disturbance of metabolism, the acidosis coma of diabetes. Tugendreich, writing in the *Berliner klinische Wochenschrift* of May 4, 1908, furnishes some very direct evidence in favor of this theory. By the use of microchemical methods, he has succeeded in obtaining the same chemical reactions in the tissues of patients dying of apparent acidosis in the course of gastroenteric disease as have previously been demonstrated in experimental acidosis of dogs and other animals. The plasma of the liver cells, that normally stains with eosin and other acid dyes, became basophile in its staining relations, thus showing that the clinical picture observed was accompanied with the excess of acid in the tissues. Other tissues did not show such characteristic reaction, this being quite in line with the modern tendency to look upon the liver as the chief organ of normal and pathological metabolism in the body. Microchemical reactions have not received as much attention as other methods of pathological diagnosis, although a study of them promises rich rewards. Tugendreich's successful work ought to stimulate the interest in this branch of modern laboratory technique.

Renal Diabetes.

The existence of a purely renal type of diabetes, that is, the excretion of sugar in the urine caused by functional or organic inefficiency of the kidneys, has been doubted by such an authority in the diseases of metabolism as von Noorden. Bönninger thinks (*Deutsche medizinische Wochenschrift*, April 30, 1908) that the proof of such a condition must consist in the existence of glycosuria without an accompanying hyperglycemia, in the impossibility to control the sugar excretion by dietetic changes, and in such a long duration of the disease as to exclude the alimentary glycosuria of a person with diminished tolerance to sugar or some obscure temporary derangement of metabolism. He communicates the particulars in the case of an alcoholic patient under his observation, which seem fully to meet the above requirements. The sugar content of the blood was continuously low, the glycosuria could not be affected one way or the other by any changes in the diet, and the symptoms had persisted for a number of years. He rightly concludes that only further observation of this and similar cases can clear up the relation between the condition observed in his patient and the common type of diabetes accompanied with the excess of sugar in the blood and affected by dietetic measures. Meanwhile, the temporary existence, at least, of a purely renal type of diabetes seems to be established by his observation.

News of the Week.

The Tuberculosis Bill.—Governor Hughes has signed Senator Cassidy's bill which declares tuberculosis to be an infectious and communicable disease dangerous to the public health, and provides for the reporting of all cases to the local health authorities. It also provides for the free examination of sputum by the health authorities in all suspected cases; for the protection of the registration records from public inspection, and for the disinfection or renovation of the premises after death or removal of a person having tuberculosis. The occupancy of premises vacated by a person having tuberculosis is prohibited until the directions of the Health Department providing for disinfection or renovation have been complied with. The attending physician is required to report to the health officer, on blanks to be furnished for this purpose, a complete statement of the procedure and precautions taken by him in a case of tuberculosis coming to his notice, and the physician shall receive for such report a fee of $1. Failure on the part of the attending physician to comply with the provisions of this act will make him liable to a fine not to exceed $100 or six months in prison or both. Violation by any one of any section of the act is declared a misdemeanor punishable by a fine of not less than $5 or more than $50.

The Harvey Society.—At the annual meeting of the Harvey Society, held May 15, 1908, the following officers were elected for the coming year: *President*, James Ewing; *Vice-President*, Simon Flexner; *Treasurer*, Edward K. Dunham; *Secretary*, F. C. Wood; *Council*, Graham Lusk, S. J. Meltzer, Adolph Meyer. The society adopted the following resolution: "In the desire of Dr. Graham Lusk not to undertake again the duties of president of the Harvey Society, its members express to him their cordial appreciation of the great value of his services to the medical sciences in this country in founding the society, in successfully administering

its affairs during its early growth, and in placing it upon a substantial basis. The place now occupied by it abundantly demonstrates the wisdom of Dr. Lusk in organizing a medium of communication between the laboratory and the medical practitioners; and whatever the society shall accomplish in the future will be due in no small part to the worthy example which he has set."

Dr. S. A. Knopf of this city has been elected Professor of Phthisiotherapy to fill the newly-created chair at the New York Postgraduate Medical School and Hospital.

Dr. Charles A. Groff has been appointed provisionally chief medical inspector of the Philadelphia Board of Health in the place of Dr. A. A. Cairns, resigned. Dr. Groff has been assistant medical inspector since 1901.

Dr. Charles T. King has been appointed assis-sistant resident physician in the Philadelphia Municipal Hospital to fill a vacancy caused by promotions.

Dr. James McFadden Gaston of Atlanta has been appointed by the foreign mission board of the Southern Baptist Convention to take charge of a new hospital to be erected at Lai Chou Fu, in the province of Shang Tung, China. The hospital over which Dr. Gaston will have supervision will be known as the Mayfield-Tyzzer Hospital, having been named for Drs. Mayfield and Tyzzer, of St. Louis, who are supplying the funds for its erection. Work upon it will not begin until Dr. Gaston arrives in China some time in September, and it is hoped to have it completed by the first of next year.

Mechanico-Therapy at the Vanderbilt Clinic.—As a memorial to her late husband, Samuel Matshak, his widow has given the money necessary to equip a department for surgical mechanico-therapeutics at the Vanderbilt clinic of the College of Physicians and Surgeons of New York City.

The Harlem Eye, Ear, and Throat Infirmary.—Ground was broken for the erection of the new building of this institution on Thursday, May 14. The institution is twenty-seven years old and has six thousand new patients annually. Dr. C. B. Meding is the surgeon and secretary of the Board of Managers.

Retirement of a Hospital Staff.—As the result of a reorganization of the Bushwick Hospital, Brooklyn, decided upon by the board of directors, the resignation of all the doctors connected with the visiting staff has been asked for. The letters asking for the resignations explained that the scheme for reorganization included the erection of a new building and an addition to the staff.

An Epidemic of Lyssophobia prevails in New York and vicinity as a result of the publication in the daily press, with needless details and scare heads, of a fatal case of hydrophobia. A war of extermination has been declared against the thousands of homeless dogs in the city, and if this is effectively carried out the resultant good may compensate in a measure for the distress caused by the sensational accounts in the minds of many timid persons who have been scratched or bitten by dogs.

The International Congress on Tuberculosis.—President Roosevelt has accepted the presidency of this Congress. Dr. Edward L. Trudeau has been elected honorary president, and Vice-President Fairbanks, Speaker Cannon, and the governors of the States have been asked to serve as vice-presidents. President Roosevelt's letter to Dr. Lawrence F. Flick, chairman of the Committee on Arrangements, is dated at the White House, May 12, 1908, and is as follows: "It is with great pleasure that I accept the presidency of the International Congress on Tuberculosis, which is to meet in this city on September 21, 1908, and extend its session to October 12, 1908. Official duties, however, may prevent my presiding at the initial meeting of the congress, in which case I will deputize Secretary Cortelyon. The importance of the crusade against tuberculosis, in the interest of which this congress convenes, cannot be overestimated when it is realized that tuberculosis costs our country two hundred thousand lives a year, and the entire world a million lives a year, besides constituting a most serious handicap to material progress, prosperity, and happiness, and being an enormous expense to society, most often in those walks of life where the burden is least bearable. Science has demonstrated that this disease can be stamped out, but the rapidity and completeness with which this can be accomplished depend upon the promptness with which the new doctrines about tuberculosis can be inculcated into the minds of the people and engrafted upon our customs, habits, and laws. The presence in our midst of representatives of world-wide workers in this magnificent cause gives an unusual opportunity for accelerating the educational part of the program. The modern crusade against tuberculosis brings hope and bright prospects of recovery to hundreds and thousands of victims of the disease, who under old teachings were abandoned to despair. The work of this congress will bring the results of the latest studies and investigations before the profession at large and place in the hands of our physicians all the newest and most approved methods of treating the disease—a knowledge which will add many years of valuable life to our people and will thereby increase our public wealth and happiness. The International Congress on Tuberculosis is in the interest of universal peace. By joining in such a warfare against a common foe the peoples of the world are brought closer together and made to better realize the brotherhood of man; for a united interest against a common foe fosters universal friendship. Our country which is honored this year as the host of other nations in this great gathering of leaders and experts and as the custodian of the magnificent exhibit which will be set up by the entire world, should manifest its appreciation by giving the congress a setting worthy of the cause, of our guests, and of ourselves. We should endeavor to make it the greatest and the most fruitful congress which has yet been held, and I assure you of my interest and services to that end."

Examination for Medical Interne, Government Hospital for the Insane.—The United States Civil Service Commission announces an examination on June 17, 1908, to secure eligibles from which to make certification to fill two, and possibly three, vacancies in the position of medical interne (male) and one vacancy in the position of medical interne (female), at $600 per annum each, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies requiring similar qualifications as they may occur. Applicants must be unmarried, twenty years old or over, and graduates of not more than eighteen months' standing of a reputable medical college. Applicants should apply to the United States Civil Service Commission, Washington, D. C.

Rebel Against the Wearing of Uniforms.—Recently the Health Department inspectors of Chi-

cago appeared before the Council Health Committee to urge that their brass buttons and blue suits be discarded. The objections raised are that the coats are too heavy for summer wear; the inspectors are often mistaken for policemen; the brass buttons tarnish the fingers, and it is unbecoming the dignity of a physician to be uniformed. The whole matter was referred to a subcommittee.

The American Association of Medical Milk Commissions will hold its second annual meeting at the Chicago Beach Hotel, Chicago, Ill., on Monday, June 1, 1908, under the presidency of Henry L. Coit, M.D. This association is composed of one hundred and fifty physicians from various parts of the United States, who are engaged in milk commission work, and about thirty professional sanitarians and hygienists, who are connected with various phases of the pure milk movement. At the meeting there will be a discussion on the various phases of milk commission activity, including organization, scope of work, working methods, and new requirements for the production of "Certified Milk." Several papers or addresses will follow by physicians and hygienists who are prominently identified with this work in various parts of the United States. The secretary of the association is Dr. Otto P. Geier, 124 Garfield Place, Cincinnati, Ohio.

The National Medical Association.—The tenth annual meeting of this society of Negro physicians, dentists, and pharmacists will be held in this city on August 25, 26, and 27, 1908, under the presidency of Dr. P. A. Johnson of New York. The annual attendance at the three previous meetings, in Richmond, Philadelphia, and Baltimore respectively, has averaged about three hundred, but it is anticipated that there will be five hundred at least at the forthcoming meeting. It is gratifying to learn that all of the most prominent of the colored members of the profession are identified with this organization, for the good which can be accomplished by such a body is unquestionable. The salvation of the negroes in this country from the terrible havoc made in their ranks by disease must in the end be accomplished by physicians of their own race, and organization will be a powerful weapon to aid them in this struggle.

Alpha Omega Alpha Medical Scholarship Society.—The first international assembly of this society will take place in Chicago during the annual session of the American Medical Association. Dinner will be served at the Great Northern Hotel at 6:30 P.M., Wednesday, June 3. An address of welcome will be delivered by the Dean of Rush Medical College, and responses will be made by Drs. Barker, Burton-Opitz, Cannon, Dodson, Waite, Wesbrook, and Vaughan. Delegates from each of the fourteen chapters will have a place on the program. The secretary of the society is Dr. William W. Root, of Parker, Ind.

Franklin District (Mass.) Medical Society.—The annual meeting of this society was held at Greenfield, May 13. The officers elected were the following: *President*, Dr. J. W. Cram of Colrain; *Vice-President*, Dr. C. L. Upton of Shelburne Falls; *Secretary and Treasurer*, Dr. Clara M. Greenough of Greenfield; *Censors*, Dr. N. P. Wood of Northfield (supervisor), Dr. C. G. Trow of Sunderland, Dr. G. R. Fessenden of Ashfield, Dr. E. G. Best of Greenfield, Dr. G. A. Cooke of Montague; *Councilors*, Dr. H. G. Stetson and Dr. G. P. Twitchell of Greenfield; *Nominating Councilor*, Dr. G. P. Twitchell; *Commissioner of Trials*, Dr. F. E. Johnson of Erving.

Essex (Mass.) North District Medical Society.—At the annual meeting of this society, held May 6 at Lawrence, the following officers were elected: *President*, Dr. C. E. Durant of Haverhill; *Vice-President*, Dr. W. W. Pillsbury of Newburyport; *Secretary and Treasurer*, Dr. J. Forrest Burnham.

Polk County (Ark.) Medical Society.—At the annual meeting of this society, held at Mena on May 1, the following officers were elected: *President*, Dr. W. P. Parks; *Vice-President*, Dr. J. R. Davis; *Secretary and Treasurer*, Dr. F. A. Lee; *Delegate to the Arkansas State Medical Society*, Dr. J. R. Davis.

The Connecticut Valley Medical Association.—At the annual meeting of this association held at Bellows Falls on May 5, the following officers were elected: *President*, Dr. J. A. Stevenson of Chester; *Vice-President*, Dr. J. Corliss of Walpole, N. H.; *Secretary*, Dr. J. S. Hill of Bellows Falls; *Treasurer*, Dr. E. R. Campbell of Bellows Falls.

The Franklin County (Vt.) Medical Society met in annual session at St. Albans on May 13. The election of officers resulted as follows: *President*, Dr. A. L. Cross of Swanton; *Vice-President*, Dr. Alan Davidson of St. Albans; *Secretary* and *Treasurer*, Dr. E. A. Hyatt of St. Albans; *Delegates to the State Society*, Dr. G. C. Berkley of St. Albans, Dr. J. R. Patten of Fairfield, Dr. F. S. Hutchinson of Enosburg Falls, and Dr. E. M. Brown of Sheldon.

Brainard District (Ill.) Medical Society.—The thirty-second annual meeting of this society was held April 30, at which the following officers were elected for the ensuing year: *President*, Dr. John M. Wilcox of Clinton; *Vice-Presidents*, Drs. D. W. Deal of Springfield, John W. Bozarth of Mount Pulaski, and Chauncey W. Cargill of Mason City; *Secretary*, Dr. Harry S. Oyler of Lincoln; *Treasurer*, Dr. Chas. C. Reed of Lincoln; *Censors*, Drs. Irving Newcomer of Petersburg, Burton W. Hole of Springfield, and Chas. M. Noble of Bloomington.

Officers of Illinois State Medical Society.—At the fifty-eighth annual meeting of this society, held at Bloomington, May 19, 20, and 21, 1908, the following officers were elected for the ensuing year: *President*, Dr. J. W. Pettit of Ottawa; *First Vice-President*, Dr. J. L. Wiggins of East St. Louis; *Second Vice-President*, Dr. E. M. Eckhard of Peoria; *Secretary*, Dr. E. W. Weis of Ottawa; *Treasurer*, Dr. Everett J. Brown of Decatur. Quincy was selected as the place for holding the next annual meeting.

Obituary Notes.—Dr. Hiram Jennings Rowell died of pneumonia at Belen, N. M., on May 7. He was born in Missouri in 1879 and was graduated from the University Medical College, Kansas City, in 1900. He began practice in Excelsior Springs, Mo., but five years ago was obliged to go to the southwest on account of failing health.

Dr. A. E. Field of Barre, Vt., died on May 9 at the age of eighty-eight years. He was born in Berlin, Vt., and was graduated from Dartmouth in 1846. He practised for many years in Orange and Washington counties, and had resided in Barre since 1871.

Dr. Albert Bassett Smith died May 7 in Norwalk, Cal. He was born in Ohio in 1835, and was graduated from the Medical College of Ohio in 1856. He practised for many years in Iowa, in Des Moines since 1884, but removed to California about two years ago.

Dr. Daniel J. O'Sullivan of Lawrence, Mass., died May 8 at the age of fifty years. He was born in Lowell, and was graduated from the Bellevue

Hospital Medical School, New York City, about thirty years ago.

Dr. Albert Hunter Voorhies of San Francisco died on May 5 at the age of seventy years. He was born in Tennessee, and was a graduate of the Medical Department of the University of Pennsylvania in the class of 1860. He served in the medical corps of the Confederate army during the Civil War, and afterward practised in Memphis. He removed to San Francisco in 1881.

Dr. Stanley Gatch died in Tucson, Ariz., on May 1, at the age of twenty-five years. He was a graduate of the University of Kansas School of Medicine in 1905.

Dr. David Coulter Gamble of St. Louis died suddenly May 4. He was born in St. Louis in 1844, and was a graduate of the St. Louis Medical College in 1869. He was for a number of years clinical professor of otology in the Medical Department of Washington University.

Dr. Thomas Francis Stanton of Bridgeport, Conn., died May 8 following an operation for appendicitis. He was born in Hartford in 1864, and was graduated from the College of Physicians and Surgeons, Baltimore, with the class of 1896.

Dr. Robert R. McCandliss of Emporia, Kansas, died May 5 at the age of eighty-two years. He was born in Warren County, Ohio, and was graduated from the Miami Medical College. He served in the medical corps of the Federal army during the Civil War, and later went to Emporia, where he had practised medicine for thirty-seven years.

Dr. George W. Maston of Klamath Falls, Ore., died on April 25 at the age of fifty-seven years. He was a graduate of the Cincinnati College of Medicine in 1876. He practised in Albany, Ore., for a number of years, and removed to Klamath Falls in 1895.

Dr. H. C. A. Kirchner of St. Louis died May 3. He was born in Monden, Germany, in 1821, and obtained his degree from the Medical Department of Washington University in 1878.

Dr. M. L. Adams of Ballard, Wash., died in Seattle on May 1, of septicemia, following an operation wound. He was a graduate of the Medical Department of Vanderbilt University, Nashville, in 1881.

Dr. John Dutton Steele died at Philadelphia on May 17 at the age of forty years. He was graduated from Williams College in 1888, and from the Medical Department of the University of Pennsylvania in the class of 1893. He became a resident physician in the Philadelphia Hospital, and subsequently in the Presbyterian Hospital. He was associate in medicine in the University of Pennsylvania, physician to the Hospital of the University of Pennsylvania, and physician to the Presbyterian Hospital. He was elected a member of the Association of American Physicians at its recent meeting. He made numerous noteworthy contributions to the literature of diseases of the stomach and intestines.

Dr. Ernest R. Limbocker of New Virginia, Iowa, died May 3 of pneumonia. He was a graduate of Drake University College of Medicine, Des Moines, in 1905.

Dr. Horace M. Holmes of Adams, Mass, died May 6 at the age of seventy-eight years. He was a graduate of the Berkshire Medical College in 1852, and had practised in Adams for fifty-five years.

Anesthesia Commission.—A royal commission is to be appointed to inquire into the deaths under anesthetics in England and Wales. The records of these deaths for the years 1902 to 1906 inclusive were 148, 146, 154, 163, and 183.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described with remarks on their appropriate treatment.

V.

———, Va.
January 10, 1898.

Dear Doctor:—I have a patient who suffers from epileptic fits whom I am very anxious to cure, if possible. He has been to nearly all the doctors in this place and a few in Richmond, but he does not seem to have got much better. For the last year he has been taking a medicine supplied by a firm in Kansas City. If I could cure him it would be a great help to me, and I am writing to you to ask if you will send me a prescription for him. He says that every doctor that he has consulted has given him bromide of one kind or another, and that the patent medicine which he has been taking has the same effect as the doctors' prescriptions, only that it makes him more stupid, so he refuses to take any more bromide. I read in your book that there are a number of medicines that are substitutes for bromides, but you do not give any prescriptions, so if you will send me one I shall be very thankful to you and shall do all in my power to make him well. I enclose stamp for reply.

Yours truly,

———.

New York, December —, 190 .

Dear Doctor:—You will not, I hope, think me rude or unappreciative of your courtesy in consulting me, if, by way of reply to your letter of a few days ago, I send you a copy of a letter which I some time ago sent to the father of the girl whose husband's letter I also enclose. You will gather from it my attitude toward the treatment of this profound neurosis. I shall be sorry, indeed, if, after reading it, you are less keen on trying to get your patient well than you were when you wrote to me. Although epilepsy is, in the vast majority of instances, an incurable disease in the strict sense of those words, still there is scarcely any chronic disease that is so favorably influenced by appropriate treatment intelligently applied. I say to you frankly that before one can carry out such treatment, the idea that a prescription, even though its composition originated in the mind of a Minerva, can cure epilepsy must be at once dislodged, and in its place must be put a conception of the disease and a knowledge of the forces or factors that customarily precipitate an attack. The physician who essays to treat epilepsy, then, if properly charged with the seriousness of his task, will have a commendable measure of success.

Yours very sincerely.

———.

New York, December —, 1893.

Dear Sir:—I am of the opinion that your daughter is suffering from genuine epilepsy, *i.e.* epilepsy the disease and not epilepsy the symptom. I believe that she had her first attack when she fell from the horse; the epilepsy was the cause of the fall, not the fall the cause of the epilepsy.

The treatment of the disease epilepsy—congenital epilepsy, as it is sometimes called—is much more satisfactory when parents or those in *loco parentis*, or even the patient himself, have some idea of the nature of the disease. Examination of the tissue of the body after death fails to reveal any

structural abnormality, therefore we call it a functional disease, *i.e.* a disease in which function of the organ is disturbed without coexisting structural change in the organ. We physicians who know something about the profoundly intricate structure and delicate mechanism of the nervous system must content ourselves in our search for an explanation of this disease, with the theory that predicates an imperfect adjustment of certain components or constituents of the central nervous system, perhaps as the result of some jolt which these constituents received at some stage of their development as a tissue (histogenesis), or their development as a species (ontogenesis). In other words, we look upon genuine epilepsy as a sign of biological imperfection, of degeneracy, merely to indicate that certain things have transpired in the individual who is so unfortunate as to have this disease, which tends to throw him back to an original primitive type rather than direct him toward the type which is superior. A person thus constituted is less capable of resisting influences that are known to interfere with the perfect working of the nervous system, such as fatigue, indigestion, intoxication, etc., than the person who is normally constituted. It is for this reason that the important treatment of epilepsy is that which we often speak of as the moral treatment, or the disciplinary treatment. Epilepsy is much more successfully treated from this point of view than from any other. Empirically, we have learned of the value of certain drugs in its treatment, but the results obtained from giving them are most unsatisfactory unless the general plan of treatment of which I speak is adopted. Epilepsy is classed amongst the incurable diseases and very properly so, for the statistics from the most reliable sources show that only about five cases in a hundred recover. Appropriate treatment, however, materially assists the majority to a life of usefulness and productiveness. Nothing has brought this truth more conspicuously to the fore than the Colonies that have been established for the treatment of epilepsy in this country and abroad during the past generation.

The most important factor in the treatment of epilepsy is to determine the antecedents of an attack, and, having determined them, to avoid them. Anything that irritates the nervous system, anything that exhausts nervous energy, anything that disturbs emotional balance, emotional equilibrium, tends to produce attacks. The physician who searches every organ of the body to learn whether or not it may be the source from which exhausting sensory impulses are sent to the brain, who on finding them relieves them, is the one who will have the greatest success in the treatment of epilepsy. Such is the relief that sometimes comes from the correction of ocular inadequacies, the removal of nasal obstructions, relief of irritation connected with disorder of other highly sensitive parts of the body. Unfortunately for the reputation of our profession for mental balance, many physicians maintain that the disease epilepsy may be cured by such means, and this even face to face with the fact that although such claims have been put forward with great enthusiasm of energy for now nearly two generations, the prognosis in epilepsy has not been altered a whit during that time.

I should recommend that your daughter be put upon a strict dietary from which no article of food is rigidly eliminated save common salt and substances which are known to give her indigestion. I should allow her to have meat in small quantities once a day, and all recooked food should be avoided. I should not rigidly proscribe tea and coffee, but the less of these that are taken the better. Of more importance than the quality of the food is the quantity and the way in which it is taken. Practically any food may be taken if the patient masticates it thoroughly and slowly. This is a sure way of avoiding overeating. It should be the duty of some one of the family to see that not only there is a movement of the bowels daily, but that it is an adequate amount. My advice, therefore, is to avoid indigestion, constipation, and fatigue, as these are the forerunners of epileptic attacks in the vast majority of instances. If this is done, and if careful attention is paid to the diet, there will be very little difficulty in maintaining the equilibrium of nutrition which shall be manifest in good flesh, warm extremities, and equable spirits.

The drug that is most beneficial in the treatment of epilepsy is one of the salts of bromine, and apparently one salt is about as useful as another. Some individuals tolerate the bromide of soda better than they do the bromide of potassium, just as some tolerate a green hat better than a brown one, and if your daughter should happen to be one of those who is able to take bromide of strontium better than she can bromide of potassium, it would be wise to give her the one that is adapted to her. This and the dose of bromide that is adequate to reduce the frequency of the attacks, can only be determined by a careful physician, and with that end in view I shall write your doctor, giving him a detailed account of how I do it in my own practice.

Finally, although you may not find very much encouragement in the first reading of this letter, which announces to you rather baldly that one of your beloved ones is the sufferer of a disease which is practically incurable, still I think you will find some consolation in the statement that the disease does not necessarily abbreviate the victim's life nor materially interfere with her usefulness except in one direction. It is my profoundest conviction that patients with genuine nervous and mental diseases of degeneracy, of which epilepsy, hysteria, and psychasthenia are the type, hesitate before they marry, and if they marry, they should not propagate. It does not seem to me that it should be denied the epileptic to live forever in the deep, deliberate bliss of matrimony, but I maintain it a self-imposed duty to which I daily bow the knee, to point out to sufferers from hereditary nervous and mental disease, that they have a capacity for cruelty which Borgia and Caligula would have envied, *i.e.* the creation of human beings whose life is foiled in every limb. We cannot run from destiny, but we need not necessarily enter cripples in a foot-race with the fleet and the clean-limbed.

Yours very sincerely,

———.

[THE HUSBAND'S LETTER.]

BUFFALO, N. Y., December —, 1902.

Dear Doctor:—I am writing to you about my wife who, you will remember, consulted you about ten years ago for the relief of a disorder which you pronounced epilepsy. My specific purpose in writing to you now is to get your judgment concerning the advisability of subjecting her to an operation upon her head which has been urged by a physician in Philadelphia who has never seen my wife, but her case has been described to him by one of our friends. I enclose you his letter.

You will recall that, briefly, the history of my wife's illness is as follows: She was considered to

be in the most robust health until her fifteenth year. One day while riding in the ring of the riding academy here, accompanied by a master, she fell from her horse and was picked up in a dazed condition. She thinks she lost consciousness, but she is not very sure of it, nor does she recall what transpired before she fell. There were no marks of any injury to her head. She had a bruise on the shoulder and on the leg, nor did she have any other bad effects, apparently, from the fall. About four months after this she had an attack in which she became convulsed in all her extremities, rolled her eyes up, frothed at the mouth, bit her tongue, wet her clothing, and lost consciousness. After she recovered consciousness, which she did in from five minutes to half an hour, she was drowsy and inert and remained in a semistuporous condition for several hours. Afterwards she gradually regained her normal state. She had had about ten of these attacks when she was first brought to you, and meanwhile she had consulted Dr. Ferrier, in London, Dr. Raymond, in Paris, and many other physicians. Your opinion then was that the fall had nothing to do with the causation of the epilepsy, and you outlined a plan of treatment for her, and sent a nurse to her home to see that it was properly instituted. At your suggestion she was examined by Dr. ————, who ordered her to wear glasses constantly, as she had far sight in one eye and astigmatism in the other.

You will recall that you were very much opposed to our marriage, and when we insisted upon it, you stated that it was your preference to have no further participation in the treatment of her condition. We married, and we have two lovely children, a boy six years old and a girl four, and apparently they are healthy children. My wife, however, has got worse, and I mean worse in bodily health, and now, unfortunately, she is becoming incapacitated mentally. I have had her under the doctor's care almost constantly since you saw her, and now I am in the last ditch. I really do not know what to do with her, although I am getting suggestions from every quarter. Some of her family insist that I employ an osteopath, and others do not understand my obstinacy in refusing to put her in the care of Christian Scientists, and as you see from the letter enclosed, members of your own profession do not await the solicitation of their aid, but offer it directly. The number of promises of cure that I get through the mail makes me feel that I am not doing my duty to my wife, for it is not possible that such statements could be made if they had no foundation in fact whatsoever.

You will think it strange that I am writing to you after what transpired ten years ago, but I am doing it because I have often recalled the explanations you gave me of the nature of her illness when, before our marriage, I called upon you in New York. I am not sorry that I married, even though our life since then has been one of almost constant struggle for health and there has been less of that "Sliding with open eyes through liquid bliss" than is common to the average marital state. If the children do not inherit this or some other nervous disease I am content with my lot.

I do not imagine that your advice will be particularly different from what it was ten years ago, but I should like a word of counsel as to what steps to take now, and a word of assurance if you can give it to me regarding the future life of my children.

Yours very sincerely,

————.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent

LINACRE PROFESSORSHIP—MALTA FEVER—RHEUMATIC AFFECTIONS—COMPLICATIONS—NOTES—OBITUARY.

LONDON, May 8, 1908.

THE Linacre lectureships at Oxford and Cambridge claim to be the earliest endowments of university teaching with the exception of one professorship in divinity. Established 400 years ago, the Linacre endowments have passed through periods of depression and their history well illustrates the changes of opinion as to such benefactions. New arrangements have just been completed concerning them under which one lecture is to be delivered by a distinguished scientist each year. On Wednesday the new plan was inaugurated by the delivery of the first Linacre lecture under the new scheme in the new museum of the Cambridge University by Dr. Osler, Regius Professor of Medicine at Oxford. He was introduced by the Master of St. John's. The lecture was illustrated with lantern slides. Dr. Osler also handed around a number of printed books bearing Linacre's name on the title page. He remarked that among the many ties by which the old universities of Oxford and Cambridge were linked together was the possession of the blessed memory of a group of men whose benefactions made them honored as much in one as in the other. Among these, the first in order and in scholarship, as well as the most distinguished, was Thomas Linacre. That St. John's should have invited one from Linacre's old university to give that first lecture manifested in the "sons of the prophets" the old courtesy of the fathers. At Oxford the history of the endowment had been less happy than at Cambridge, but Linacre's name was associated with a much more important foundation, the Royal College of Physicians of London, of which he was one of the founders and its first president, and to that he left the example of a life devoted to learning, to medicine, and to the interests of humanity.

At the Medical Society of London on the 27th Colonel D. Bruce read a paper on Malta fever in which he described the work of the commission sent by the Royal Society at the request of the Government to investigate the disease. Their experiments seemed to show that the *Micrococcus melitensis* of Bruce, the efficient cause of the disease, entered the body in infected food or drink. Following this line of investigation, it was discovered that the goats in Malta were the reservoir of the virus, and goats supply practically all the milk consumed. Yet inoculating and feeding with the micrococcus gave no result at first. No rise of temperature, no sign of ill health was observed in the animals; they seemed to be in no way affected, and there was danger of the investigation lapsing, when it was accidentally noticed that the blood agglutinated the micrococcus. Some months later the matter came up again, and as a precaution to some experiments the blood of the animals was examined. To the surprise of the commission some specimens reacted to the agglutination test, and further experiments led to the discovery of the organism in the blood, urine, and milk. Thousands of the goats in Malta were then examined; 50 per cent. reacted and actually 10 per cent. were excreting the micrococci in their milk. Monkeys fed on the milk at once took the disease. A confirmation of the result occurred in 1905 when a steamship shipped sixty-five goats for America, and the crew who drank their milk took the fever and on arrival the organism was found in the milk of several. In Malta in 1906 the goat's milk was forbidden in the dietary of the garrison, and forthwith the fever ceased. The next year seven cases occurred, but were traced to the drinking of goat milk. We may protect the soldiers by strict exclusion of milk, but it is different with the population. There are no signs of an animal being affected, and the only effectual preventive is to exclude the milk, but the people are not prepared to give it up and no effort has been made to compel investigation with a view to destroy the infected animals. Colonel Bruce has not heard of the slaughter of a single goat, and the Maltese goatherd is still leading about his infected animals and selling their milk, which may be termed an emulsion of *Micrococcus miletensis*.

As to treatment, no specific has been discovered and the doctors can only treat symptoms. Antisera had been tried, but without success, and the injection of dead micrococci had proved equally useless. Some re-

sults had been reported and Colonel Bruce had often noticed statements in the medical journals which he believed to be inexact. He could find no proof that the disease was modified by such injections, even when controlled by the opsonic index. In reply to some questions, Colonel Bruce said goats had been found to be infected in other countries, notably N. W. India and the Orange Colony of South Africa.

At the conclusion of this meeting the president (Dr. Kingston Fowler) announced that the Fothergillian gold medal had been awarded to Sir A. Wright for his work on opsonins.

Rheumatism in some form is so common that every practitioner seems to meet with it daily. Its manifestations, or, rather, the symptoms attributed to it, are so numerous, so diverse, and so inexplicable, that an exchange of views about it is always interesting. Last month the Hunterian Society devoted two evenings to a set discussion on the subject. It was opened by Dr. Frederick Taylor, who looks upon the disorder as almost certainly microbic, though, of course, he admitted that this explanation, like all others that have been advanced, did not satisfy every one. Nor is that to be expected until rigid proof of the specificity of an organism is forthcoming. Chorea, he said, was a toxic rather than a purely nervous disease, and belonged to the infectious group, as shown by the occasional complication of endocarditis when there had been no rheumatism previously. Many forms of infective arthritis are associated with tonsillitis or various erythemata, but they might be due to some other toxemia than that of acute rheumatism. Wright considered that hemorrhagic, erythematous, and urticarial lesions were often due to deficiency of calcium salts in the blood, but it may be questioned whether they are manifestations of rheumatism at all. The relationship of acute and chronic rheumatism has yet to be cleaned up. The latter is to be seen in thousands of people who have never had the former. Endocarditis was always limited to the valves, unless the organisms reached the other parts by direct contact or extension, as in malignant endocarditis. Hyperpyrexia was a deeply interesting complication and prevailed like an epidemic from 1873 to 1877. Though the salicylic treatment was introduced it was not perhaps fully pushed in that period. In the eighteen years, 1888 to 1905, the admissions to Guy's Hospital for acute rheumatism were 1,887. Among them there were only seven cases of hyperpyrexia, of which two were fatal. As to salicylates, he considered 20 grains every four hours the best dosage. Carditis he thought as prevalent as ever, and would like to hear if others had found it less frequent than it was formerly said to be. He disagreed with the idea that carditis could be controlled in rheumatism. It might occur fifteen or twenty years after an attack of acute rheumatism.

Dr. Poynton stated the conclusions which he and Dr. Paine had formed from their joint researches, which extended over ten years. He said they had isolated a diplococcus from many parts of the body and it could be obtained in pure culture from the lesions of the disease, could cause similar lesions if injected into animals, and from these lesions could be isolated again in pure culture. He showed specimens from these lesions in animals. He and Dr. Paine were the first to produce pericarditis and endocarditis experimentally. They had often done it.

Dr. Horder was rather sceptical, as he had only had negative results, but in malignant endocarditis he had succeeded. Most microorganisms were streptococci, though some might be termed diplococci. They came from the alimentary canal and were not extremely virulent. They might be met with in syphilis, gonorrhea, or endocarditis when there had been no previous rheumatism. He held that the cause of rheumatic fever has not been discovered, and bacteria found in the disease were secondary. In investigations he had carried out with Dr. Andrews on some specimens, they found the reactions of *Diplococcus rheumaticus* identical with those of streptococci from cases of malignant endocarditis.

Dr. Luff declared that for every case of acute rheumatism the general practitioner would see 100 chronic, so called. This name was not fortunate, for it was really fibrositis, as Gowers called it. It was often started by cold or wet or strain. Salicylates were useless except to relieve pain, and for that he advised heat; for the fibrositis itself large doses of iodide of potassium. It was not necessary to diet these chronic cases, and it was time to dismiss the fetish of uric acid, which was only a harmless by-product.

Dr. F. J. Smith thought there was no difference between malignant endocarditis and other unless one of degree. He held further that every endocarditis was ulcerative.

Dr. Grunbaum thought more evidence was required to prove a difference between the organism of Poynton and Paine and that of Horder and Andrews. It was important in both cases to remember that a terminal invasion occurred in many diseases. Were cultures obtained late in the course of the cases? In reply to this, Dr. Poynton said some of the patients survived for years.

Dr. Seymour Taylor said in severe chorea there was often a rise of temperature, and in 30 per cent. of cases there was heart complication. Further, the disease was cured by salicylates as quickly as by anything. A child in his clinic with chorea and no history of rheumatism, had been treated by lumbar puncture and Poynton's diplococcus was found. Salicylate of sodium was given and recovery rapidly followed.

Manchester University has decided to appoint a second professor of medicine. The present professor, Dr. Graham Steell, will take the chair of Clinical Medicine, and Dr. George R. Murray, F.R.C.P., has been appointed to that of Systematic Medicine. Under an agreement between the university and the Royal Infirmary, Dr. Murray will become a member of the staff of that hospital when he takes up the professorship at the beginning of next session.

Our venerable leader, Sir Samuel Wilks, now in his eighty-third year, underwent an operation on the 1st inst., and every one is delighted to learn that it was successful and that he is doing well.

Dr. E. H. Lloyd, retired Brigade Surgeon, died suddenly from heart failure on Sunday in his seventy-third year. He joined the army in 1859 and retired in 1875. He served in the Nile expedition in 1884-5 and was in charge of the field hospital at Kaibar.

Dr. Theodore Duka, F.R.C.S., M.D., Knight of the Iron Crown, a retired Lieutenant-Colonel I. M. S., and formerly in the Hon. E. I. Co.'s service, died on the 5th inst. in his eighty-third year.

THE GERMAN SURGICAL CONGRESS.

(From Our Special Correspondent.)

DISINFECTION OF THE SKIN—ACROMEGALY CURED BY OPERATION—THE BLOOD IN BASEDOW'S DISEASE—SUBCUTANEOUS REMOVAL OF TUBERCULOUS GLANDS—RESECTION OF THE AORTA—OBLITERATION OF ARTERIES BY GRADUATED COMPRESSION—RESECTION OF THE ESOPHAGUS—INTRATHORACIC OPERATIONS—CHONDROTOMY IN APEX TUBERCULOSIS—ELECTRICITY IN THE TREATMENT OF CANCER.

BERLIN, May 1, 1908.

THE twenty-seventh annual meeting of the German Surgical Association took place in Berlin on April 21-24, 1908. V. Brumm of Tubingen spoke on the second day of the proceedings on the "Modern Improvements in the Disinfection of the Skin." He said that all the methods recommended for such disinfection were tested in his clinic, and the conclusion was reached that the best method is one that leads to the least injury of the skin. Disinfection by alcohol alone fulfilled this requirement better than any other technique. For the sterilization of catgut Dr. Chlumsky of Cracow recommended the following formula: Camphoræ trit. 60, phenol 30, alcohol absol. 5.

Hochenegg of Vienna read a paper on "A Case of Acromegaly with Tumor of the Hypophysis Cured by Operation." His patient, a girl, began to suffer from intense headache and disturbances of eyesight five years ago. These symptoms disappeared, but one year ago typical phenomena of acromegaly were noticed, the *x*-ray picture corroborating the diagnosis of tumor of the pituitary body. An operation for the removal of the tumor was done, it being reached by way of the nose; the growth was removed by means of a curette, and the wound wiped out with a sterile swab. The drainage tube was removed on the eighth day. As a result of the operation the headache disappeared, and the disturbances of eyesight are very much diminished now, two months after the interference. By the tenth day of the operation the teeth, which previously were separated from each other by a space of about one centimeter, approached each other closely. The feet and hands were becoming smaller in size. The patient was shown at the meeting and appeared to be in perfect health.

In the afternoon Kocher of Bern read a paper on the "Blood in Basedow's Disease." He said that an increase of lymphocytes could be found in most cases of

exophthalmic goiter. Collections of lymphocytes were likewise found in the preparations of the goiter. The coagulation of the blood was much delayed, the viscosity was increased. These data were obtained from the examination of over one hundred cases. Status lymphaticus or hyperplasia of the lymph glands of the body was of serious prognostic import in exophthalmic goiter as in other diseases; in this stage of the disease the treatment with the *x*-rays and the administration of arsenic were especially useful. In the discussion of the paper Hocnicke of Dresden said that the cause of the goiter was to be found in the hyperplasia following the diminution of function of the thyroid gland. To prove this experimentally, the speaker said that he had removed one-half of the thyroid gland in young rabbits, and this was followed within one or two years by a marked hypertrophy of the remaining half of the gland.

Dollinger of Budapest spoke on "The Subcutaneous Removal of the Tuberculous Glands in the Neck." He had recommended this method of dealing with the disease to the congress at its meeting five years ago. Now he presented the results of over two hundred operations, 167 of which were followed by primary union; the others resulted in cures after a suppuration of from one to three weeks' duration. In no case was any extensive suppuration observed. Experience has enabled him to diminish the time of his operation from one hour and a half to one-half hour. Braun (Zwickau) spoke of a "Successful Resection of the Aorta in a Case of Ganglion Neuroma." The patient was a child of six and one-half years, in whom a large, very movable retroperitoneal tumor was found on examination. During the operation by the transperitoneal route it was found that the tumor was easily shelled out in its periphery, but seemed more firmly attached in its center, pulling the aorta with it. In the attempts to free it from that vessel the aorta was torn; in consequence a piece of the vessel was resected and the two ends anastomosed. Uneventful recovery followed the operation. Examination of the tumor proved it to be a ganglion neuroma.

Doberauer of Komatau read a paper on "The Obliteration of Arteries by Means of Gradual Compression." He told of two cases of inoperable tumor, in one of which the iliac artery was exposed and slowly obliterated in the course of three days by progressive compression with the ligature; in the other case the same operation was performed upon the common iliac artery. In both cases after a few days the extirpation of the tumors was performed with resection of the vessels, yet the circulation in the limb affected by the resection was preserved. The technique of the operation may perhaps be found useful in cases of aneurysm. V. Hacker of Graz spoke of his method of "Resection of the Esophagus and Plastic Operation in Cases of Carcinoma of the Esophagus." His operation consists in the formation of a canal out of the external skin, the extirpation of the diseased part of the esophagus, and the interposition of the skin tube for the resected portion. A gastrostomy is performed before the operation upon the diseased esophagus. Neighboring organs are to be resected as completely as possible if they are involved. The operation is, of course, applicable only to the disease of the neck portion of the esophagus.

Küttner of Breslau spoke on the "Additional Experiences with the Operations Within the Chest Cavity." He has found that disturbances of respiration and collapse were completely obviated by the use of Sauerbruch's increased pressure method; even the presence of fluid in the lungs is perhaps not a contraindication. Experience with the use of diminished pressure in operation gave the same gratifying results in suitable cases. The increased pressure technique as recommended by Brauer is simpler, more aseptic, and more reliable than the method of Sauerbruch, and it is accordingly preferred by the speaker. Friedrich of Marburg read a paper on the "Operative Procedures in Unilateral Pulmonary Tuberculosis." The author laid special stress upon the anesthetizing of the patient, the rapidity of the operation, and the extent of the latter. He administered morphine before the operation and then proceeded with local anesthesia of the parts. Chloroform by inhalation was given only in the moments when severe pain was complained of, at most twelve grams of chloroform being used in the one-half hour taken up by the operation. An extensive thoracoplasty is called for by the operation, which creates a chronic pneumothorax, thus giving rest to the affected lung. Fever is usually reduced immediately after the procedure; the heart, on the other hand, goes into a species of delirium because of the effected dislocation of the thoracic organs. Energetic use of cardiac remedies is called for in this contingency. In three patients the amount of the sputum daily reached 150 c.c.; after the operation it was reduced to 15 c.c. The patients gained in weight after the procedure. The operation is especially dangerous from its effect upon the heart in cases of right-sided tuberculosis. In the three cases mentioned, all suffered from progressive unilateral affection of the lungs.

The same speaker demonstrated fine preparations illustrating the adaptation of the lungs to defects in volume. The experiments were performed upon dogs and showed the following: After the removal of a large portion or the whole lung, the other lung, the heart, and the diaphragm undergo transposition resulting in the complete obliteration of the created space.

Seidel of Dresden read a paper on "Chondrotomy in Apex Tuberculosis." He said that the diminution and the stiffening of the upper aperture of the chest may be looked upon as etiological factors in the production of the tuberculosis of the apices. He has therefore removed about one-half of a centimeter of the first rib in two patients suffering from tuberculosis of the apices. The incision was made through the rib from below and out upward and inward. A forceps could be used in executing the resection. The cases suitable for the operation are those occurring in adults possessing a narrowed upper aperture of the chest or a stiffened first rib. It is very simple in technique and leaves a condition much more favorable to the success of internal therapeutic measures selected to combat the disease.

Czerny of Heidelberg spoke of "Electricity in the Treatment of Cancer." He used the spark treatment according to the technique of Keating-Hart in many cases, and considers it of value only as an auxiliary measure. As the action of the electric current does not penetrate very deeply, the cancerous masses should at first be removed as completely as possible; only then the bottom of the wound is exposed to the action of the electric current, the poles being frequently changed, and the field being constantly cooled. In cases where the cancer cannot be removed the application of electricity has a favorable effect upon the pain, the bleeding, and the fetid secretion from the growth.

(*To be continued.*)

Progress of Medical Science.

Boston Medical and Surgical Journal, May 14, 1908.

A Study of the Value of Measurements of Chest Expansion.—H. W. Goodall and J. L. Belknap present tabulated material showing measurements made during the various phases of the respiratory act and measurements of both chest and abdomen with the patient at rest, inspiring and expiring. They believe that mensuration of the chest alone does not give an accurate measurement of respiratory capacity. To be of any value, corresponding abdominal measurements must be taken in order to determine, as nearly as possible, the position of the diaphragm, the chief respiratory agent. As much as 50 per cent. of the increase in chest circumference during maximum expansion may be owing to change in the shape of the thoracic cavity due to muscular contractions alone. From these two facts it is evidently erroneous to conclude from chest measurement alone that a supposedly healthy individual with a chest expansion of less than two inches has a diminished respiratory capacity, or that an individual with an expansion of two inches or more necessarily has a normal respiratory capacity.

The Extraintestinal Origin of Hydrobilirubin.—A. E. Austin and M. D. Ordway discuss the various theories of origin of urobilin and stereobilin which they regard as essentially identical, both coming from bilirubin. As a result of their own experiments and clinical observations, they advance the following propositions: (1) When no bile enters the intestine (absence of urobilin in feces and urine) urobilin may occasionally be found in fistula bile. (2) This is not due to the conversion of bilirubin to urobilin by the blood; what effect cells actively may have upon it we do not yet know. (3) It is evident that the liver does not form urobilin, or it would be oftener found when complete closure of the common duct occurs. (4) If urobilin is ever regenerated to bilirubin, it is probably not an oxidative process, as so often stated. (5) As cholecystitis is often accompanied by bacterial infection of the gall bladder, from which these germs may easily make their way into the liver and there exercise their functions as in the intestines, the query appears a just one, if the formation of urobilin other than in the intestine may not be due to bacterial infec-

tion. The authors regard their final conclusion as substantiated by the work of Adami who has demonstrated the presence in the liver of numerous bacilli.

New York Medical Journal, May 16, 1908.

Hysteria and the Reeducation of Dubois.—S. E. Jelliffe regards hysteria as a collection in an adult individual of primitive traits of psychological response to psychological factors. A primary trait of hysteria is instability. A second trait is the marked influence of suggestion, a third, negativism as a corollary from the second, and a fourth, the egocentric nature. Practically all physical signs result from the second factor of suggestibility. Moral causes play an important rôle in the development of the hysterical state. The moral education of man still rests in a large degree on the principle of authority transmitted by the Church; it makes the practice of duty depend on the fear of punishment and the hope of reward. It does not incite man to seek for pure and simple truth or to disinterested right-dealing; it does not develop sufficiently his judgment or healthy logic, necessary qualities for the formation of a high moral conception of life. It is this last which will permit man to pursue with serenity the end which he proposes in life, without selfish preoccupation and without discouragement; it is in this way that he will escape the depressing and dissolving action of the emotions, and that he will accept the inevitable with a healthy philosophy of life, and will not seek in the subterfuge of hysteria a remedy for his insufficiency, or a compensation for his disappointed hopes (Schnyder). Finally, if psychology is absolutely indispensable for the analysis of the mechanism of hysterical phenomena, it cannot in itself alone resolve the complex problem of the origin of the hysterical modification of mentality. To all psychological conceptions of hysteria, there must be associated a moral conception of it. It is chiefly this moral conception which ought to inspire all rational treatment of hysteria, such as has been indicated by Dubois in maintaining for the psychoneuroses a *moral treatment* in the highest sense of the word. The psychological analysis alone is but a step in the process toward reaching, from the therapeutic point of view, anything but partial results and the suppression of such and such symptoms. To get at hysteria in its very origin, one must penetrate more profoundly into the personality of the patient. He must be helped to reconstruct his mental synthesis on the basis of good logic, and to reconstruct his moral education, a complicated and often arduous task, but in Dubois's terms it is a true statement of the soul which no physician could repudiate to-day.

The Association of Tuberculosis of the Lungs With Diabetes Mellitus.—H. L. Shively reviews the extant literature on this subject, finding from it that the association is a frequent one and that in the early stages of this combination one or the other of the two maladies is often overlooked. In diabetes the pulmonary affection often runs an analytical course. The face may be cyanotic instead of pale. Cough is often slight and expectoration scanty. Sugar may sometimes be demonstrated in the sputum. Appetite may be preserved and even supernormal. There may be no fever, and sweating is rare. When phthisis develops in a diabetic polyuria and the sugar output are often both lessened. The recognition of the synchronous presence of both diseases affects the prognosis because it conditions the nature of the food and medicines which should be given. Administration of large quantities of fats and oils may hasten the onset of diabetic coma. A diet of meat, fat, cheese, and eggs is good for both diseases. Milk may often be permitted in diabetes, especially when sour or artificially fermented. The drug of greatest value in diabetes, opium, with its derivatives, codeine and heroin, is also indicated for the cough, the hemorrhages, the diarrheas, and to promote the euphoria of the advanced consumptive. The diabetic consumptive is very often afebrile, and for such cases exercise in moderation in the fresh air is not contraindicated. Such exercise is distinctly useful for the diabetic, as it has been shown that larger quantities of carbohydrates are tolerated on account of the increased consumption of sugar by the muscles during exercise. Creosote and guaiacol carbonate, which have continued in favor for tuberculosis, are also believed to relieve the symptoms of diabetes, notably the thirst and polyuria. Arsenic and strychnine, which have their advocates in diabetes, are good systemic tonics for the consumptive. Hydrotherapy is of undoubted value in both diseases, as are also the alkaline mineral waters, woolen clothing next the skin, abstinence from tobacco, freedom from worry and care, and a quiet life in the country in a mild, dry, and equable climate.

Transfusion.—From the comprehensive paper of G. M. Dorrance and N. Ginsburg, we abstract the following remarks on indications for this therapeutic measure: (1) For anemia due to acute grave hemorrhage, as from an accident, ruptured extrauterine gestation, or postpartum hemorrhage. In this variety the indication is clear and the results have been excellent. (2) Where chemical changes have occurred in the blood and the hemoglobin is not able to perform the interchange of carbon dioxide and oxygen; as in carbon monoxide poisoning and poisoning from synthetic analine compounds. Here the indication is positive and the results good if the operation is performed early. (3) In hemorrhage where the coagulability of the blood is deficient, as in hemophilia, cholemia, and in hemorrhage during typhoid fever. In hemophilia it will assist coagulation and with the other methods of treatment stop the hemorrhage, but of course will not cure the underlying cause. In cholemia transfusion will increase the coagulability of the blood and make it possible to operate without excessive hemorrhage. (4) In certain blood diseases where the blood forming organs are not sufficiently nourished to produce corpuscles or where the blood corpuscles are deficient in numbers; as in extreme chlorosis, secondary anemias, unclassified anemias of childhood, and in pernicious anemia. In these diseases the transfusion should be repeated if marked improvement or permanent results are to be expected. In pernicious anemia, if this method of treatment is contrasted with the other methods in use, one should be perfectly satisfied with marked temporary benefit. Full technical directions are given and summarized histories of six cases are given.

Journal of the American Medical Association, May 16, 1908.

Coagulation of the Blood.—A review of the history of the studies of the coagulation of the blood and of the views and theories in regard to the subject, is given by E. E. Robertson, G. M. Illman, and H. A. Duncan, who report their own experiments and observations on the coagulation time and the effects on it of calcium salts and other coagulants. They do not, as they say, attempt to deal with the more intimate physiological aspects of the question, but rather consider the alleged coagulants from the therapeutic standpoint. Their observations were made on 127 patients, largely typhoid cases, and Wright's technique was employed and is described. In addition to the coagulation time and calcium contents of the blood, the white blood corpuscles were also counted. Their results are summarized substantially as follows: 1. Coagulation is noticeably retarded during the febrile stage of infectious diseases. 2. The clinical use of the calcium salts has no direct or invariable effect on the coagulation time, either in large doses one hour after its administration or in small or large doses at any subsequent period. 3. The calcium content of the blood, as determined in terms of ammonium oxalate, proved unreliable in their hands. 4. Any definite relationship between leucocytosis and coagulation time could not be shown. 5. Nucleic acid uniformly failed to hasten coagulation or increase the number of the leucocytes. 6. The reaction of coagulation time to hemorrhage was conclusively demonstrated. 7. They were able to show that citric acid prolongs the coagulation time, and though the difference was not very marked before and after its administration, it seemed to lessen the viscosity of the blood. They advise its use in all conditions in which thrombosis threatens. This holds, they say, especially in heart disease with broken compensation and for a brief period in the convalescence from typhoid and even in pneumonia.

Catarrhal Deafness.—J. W. Jervey calls attention to adhesive bands and masses of lymphoid tissue in the fossæ of Rosenmüller as causes of catarrhal deafness. He considers them probably the residua, to some extent, of old adenoids. They interfere with the patency of the Eustachian tube, causing, besides the deafness, which may be severe or slight, tinnitus, cough, bronchial irritation, and almost always more or less postnasal catarrh. Vertigo, mental depression, and other nervous derangements may be produced. The diagnosis is easy with the rhinoscopic mirror. He treats these cases by breaking down the bands and granulations with the finger, after thorough cocainization, and after the slight bleeding has ceased, applying a solution of from 5 to 10 per cent. silver nitrate and repeating the application every forty-eight hours for ten days or two weeks. The results are excellent in relieving both the deafness and the other symptoms. Of course, the results are best in the more recent cases, and if a long-standing symptom, such as an irritative cough, has caused organic changes, immediate relief can hardly be expected, but the removal of the cause will surely pave the way for the cure.

Anastomosis of Hollow Viscera.—E. Wyllys Andrews, after noticing the advantages of the ligature methods,

remarks on certain drawbacks, especially the fact that they do not create an immediate opening and their tendency to pucker the visceral walls, and describes an instrument for rapid anastomosis that seems to meet these objections. It consists essentially in a forceps having blades equal to the length of the openings desired in the viscera, the blades being bodkin pointed, like the McGraw needle; after the preliminary suture they are clamped so as to crush the tissues and a slender chisel-pointed blade is thrust through the two grooves which form a sort of tunnel in the closed blades cutting a linear opening entirely through the walls of both viscera. The instruments are figured, among them a simpler and earlier form very similar to one devised by Flint, which might be called Flint's forceps. Care should be taken not to cut the encircling suture, and to prevent hemorrhage by careful deep suturing and avoidance of large arteries in choosing the line of anastomosis. The use of a heated cauterizing blade and the crushing action of the improved forceps minimize the danger, but suturing should not be neglected.

Unrecognized Fractures of the Hip.—A. Soiland reports three cases of unrecognized impacted fractures of the neck of the femur, one of them complicated by dislocation, which was reduced without disturbing the impaction. All were revealed by the Röntgen ray. He thinks such cases occur more frequently than is suspected, the shortening being so slight that it is not detected, and the injury is diagnosed as confined to the soft parts. He concludes, therefore, that it is not always safe to pass an opinion lightly on what appears to be a minor injury of the hip joint, especially when found in middle life or later. Examination under anesthesia can not always be depended on, and if sufficient force is used to produce crepitus, the results may be disastrous to the patient. The best way to determine the extent of the injury, and to remove all doubt in such cases is to make a Röntgen diagnosis which is possible almost everywhere.

The Lancet, May 9, 1908.

Spontaneous Rupture of the Heart.—The patient of A. T. Theobalds was an inmate of an insane asylum. He was 65 years of age, had chronic mania, but on the whole was fairly quiet and in good condition. One year previous to his final illness a mitral systolic murmur had been discovered. At the last, an attack supposed to be ordinary syncope came on. He soon recovered but died some five days later. At the post-mortem examination the pericardium was found to be distended with fluid blood; the heart was enlarged and weighed 375 grams. On the anterior surface of the left ventricle near the middle and to the outer side was seen a small subepicardial hemorrhage of about the size of a halfpenny, on the outer side of which was the external aperture of the rupture of about the size of a pin's head. On cutting through this the rupture was seen to extend from the inner surface of the ventricle and to be V-shaped. The wall of the ventricle was fully half an inch thick, but was pale, soft, and flabby. The coronary arteries, however, were apparently healthy. The mitral valve was dilated and there was slight thickening of the aortic valves, the first part of the aorta also being slightly roughened. The vessels at the base of the brain were markedly atheromatous and the choroid plexuses were calcareous.

The Precipitin Reaction in Hydatid Disease.—Experiments have been conducted by D. A. Welsh and H. S. Chapman at whose disposal has been hydatid fluids removed from nine different patients. Their conclusions are as follows: (1) The interaction between selected hydatid fluids and a sufficiency of the serum of a patient affected with hydatid disease has, in our experience of nine cases, never failed to give a positive precipitin reaction when tested before operation. (2) Not all hydatid fluids are capable of eliciting this reaction, and their failure is not associated with any noticeable diminution of their protein content. (3) Persistence of a marked reaction some weeks after operation probably indicates the continued presence of the parasite, but the disappearance of the reaction does not necessarily indicate complete removal of the cysts. (4) A positive reaction is independent of the site of the hydatid cyst (hepatic, peritoneal, muscular) and independent also of the nature of its contents (clear, turbid, or purulent).

The Operative Surgery of Labyrinthitis.—After a description of the surgical anatomy of the labyrinth, the author considers the related topics of guides to the vestibule and the course of the facial nerve in relation to the labyrinth and the middle ear. He next considers morbid anatomy and pathology and finally comes to operative surgery, the latter heading being illustrated by the summarized histories of various cases. He describes superior vestibulotomy, the same procedure with complete removal of the canals, inferior vestibulotomy, the same with partial or complete removal of the cochlea, double vestibulotomy, extirpation of the labyrinth, simple curettage of labyrinthine carries and sequestrotomy. In all 26 cases have come to operation in the author's experience. They have healed with such absolute uniformity that he has been led to believe that some at least of the failures after the radical operation may be due to disease of the labyrinth. In every case in which vertigo was present it was completely and permanently relieved. There has been no case of permanent facial paralysis. In only one case has there been a fatal result from operation. Two cases were lost from omission of the intervention on the labyrinth.

The Experimental Production of Gastric Ulceration by Injection of Gastrotoxin.—C. Bolton describes his experiments with reference to the development of a new theory of the pathology of gastric ulceration. Starting from the facts that specific bacteriolytic sera could be obtained which would destroy the bacteria against which they were formed, and that similarly hemolytic sera active against red blood corpuscles and in a few instances cytolytic sera had been produced, he conceived the idea of preparing a gastrotoxic serum active against gastric cells, thinking that this would throw light not only upon the phenomena of cytotoxic action but also upon the obscure problem of gastric ulceration. He succeeded in producing such a serum, the mode of preparation of which is described in full. He next describes the action of the serum when injected (1) in rabbits of serum made from gastric cells of the guinea-pig; (2) of cells from the rabbit into the rabbit and (3) of human gastric cells into the rabbit or domestic fowl. An analysis of the serum in the test tube is detailed and the specificity of the gastrotoxin discussed. The author says he has been able to prepare a serum which is active against human gastric cells. He concludes by saying that it would be premature to apply all those results directly to the explanation of human gastric ulcer, but they open up new lines of thought along which to prosecute further research. It is possible that not only certain endogenous but also certain exogenous poisons may be capable of initiating self-digestion through the blood stream, and that the production of such lesions may be facilitated not only by hyperacidity of the gastric juice but also by other bodies introduced with the food. It seems that all ulcers produced by digestion of dead or devitalized tissue are essentially acute and, since human gastric ulcer is commonly a chronic malady, it is not so much the actual mode of production which it is necessary to explain as the fact that the ulcer so persistently refuses to heal. It is possible that this chronicity may depend upon a secondary bacterial infection of the ulcer largely owing to muscular insufficiency, but upon the latter point the author hopes to be able to speak more definitely at a future date.

British Medical Journal, May 2 and 9, 1908.

Treatment of Bronchial Catarrh by Alkalies.—A. Haig refers to the use of salicylates in bronchial catarrhs. They are apt to fail when the urinary acidity is low, and as the effect of dyspnea is to increase the alkalinity of the blood and lower the acidity of the urine it follows that the salicylates will often fail in the time of greatest need, that is, when dyspnea is considerable and the heart is beginning to dilate. The author believes that this class of remedies acts simply as a solvent of uric acid. Following this matter up and believing that salicylates act in these cases merely as solvents of uric acid, it occurred to the author that the condition (dyspnea with falling acidity of the urine) which is unfavorable, to the solvent action of the salicylates would, on the contrary, be quite favorable to the solvent action of alkalies. He therefore began to try these older solvents of uric acid, with results which soon demonstrated that his conjecture was correct. He found that it was only necessary to give alkali in sufficient dose to render the urine alkaline to cause an immediate fall of temperature and speedy resolution of symptoms in many cases of bronchitis and bronchopneumonia. That to do this it was necessary to give alkali almost alone (say sodii bicarb. grains 20 to 60 for a child, or 90 to 120 for an adult in the twenty-four hours) and on no account to give ammonium with it, as this raises the acidity of the urine and has been proved by others to do harm in rheumatism. If a cardiac tonic is required digitalis can be used, but everything that raises the acidity of the urine must be avoided, and even such flavoring matters as orange and sugar, which tend to raise acidity, are better left out. If the alkali is going to do good, the temperature generally drops decidedly in from twenty-four to forty-eight hours, but it should not be given up as useless till the urine

has been rendered alkaline. After the temperature has been normal for one or two days, the author reduces the alkali to a small dose (gr. 10), and adds a little belladonna to dry up secretions, and the trouble is at an end. To sum up he lays down the following rules: (1) Give the alkali in sufficient quantity to make the urine alkaline; (2) avoid combining it with drugs that raise the acidity of the urine, or in fact with anything which acts as a precipitant of uric acid, such as lime, the metals or their salts, or even the chlorides, sulphates, or nitrates of the alkalies. Ammonium, so often given in these conditions, is one of the worst things to combine with the alkali, for it not only raises the acidity of the urine, but its urate is insoluble.

Outbreak of Beriberi on a Merchant Ship.—S. Roach refers to an outbreak occurring on a ship en route from Rangoon to Queenstown with 75 persons on board. The author boarded the vessel at the port of Ascension and found five cases of beriberi. The cargo was of teak-wood, which was stored away while wet and muddy, and became steamy and hot, thus favoring the outbreak of the malady from which one man died. Nothing in the sanitary condition of the vessel or quality or quantity in diet was found deserving of criticism. Lime juice was issued regularly. Rice was used sparingly. All drinking water was boiled. After the ship came to anchor five more cases of the disease appeared, and in fact the entire company were affected. One died of tuberculous meningitis. The remainder recovered.

Erythrocythemia and Cyanosis.—W. P. Herringham refers to the case of a woman of 38 years, with good previous history, except that six years before she had become anemic, which condition was followed by a heightened color and attacks of dyspnea in which she became very blue. The blood had been found polycythemic. She was placed in a hospital and two days later her dyspneic attacks came on again, the difficulty being chiefly in expiration and the severity being extreme. It suggested asthma but no râles could be heard in the bronchi. She died in about forty-eight hours. Autopsy showed that the lungs were emphysematous but small, and from the larynx to the finest divisions of the bronchi there was no sign of any disease of the air tubes. They were not thickened, and the mucous membrane was free from any secretion. There was a patch of congestion at the left base, where we had heard fine crepitation the day before death. The heart was rather small, neither hypertrophied nor dilated, and free from valvular disease. The liver was congested, but was not enlarged. The spleen was not enlarged, and seemed natural on section. The marrow of the long bones was not examined. Two theories suggested themselves as to the exact nature of the malady. One was that the case was one of atrophic emphysema in a youngish person which had led to polycythemia in compensation for deficient aeration; the other that it was a case of polycythemia or erythrocythemia of the usual type, but without any splenic enlargement, that the emphysema was a more or less accidental addition, and that the fatal dyspnea was chiefly due to the state of the blood. The author in closing discusses the question as to why these florid cases become blue on exertion. He suggests that in spite of the erythrocythemia, and in spite of the amount of hemoglobin, which has been sometimes as high as 180 per cent., there was less oxygen in the blood than usual. It seems possible that in this may lie the secret of the disease. Suppose for a moment that there is some fault in the cytoplasm or in the hemoglobin of the red cells which prevents them from being good oxygen carriers, or make the more likely supposition that there is some abnormal reducing agent in the blood which reduces oxyhemoglobin but does not turn it into methemoglobin or sulphhemoglobin. The want of oxygen might stimulate the bone marrow to form fresh cells, as it does where high altitudes or heart disease is the cause. This increase of the cells, erythrocythemia, may be in some cases adequate. There will then be much more blood in the body, but it will be fairly red, though each cell carries less than a healthy cell. These patients will be florid. In other cases increase in the red cells will not suffice. The fresh cells may be affected from the first with the same illness as the others, or the reducing agent may be of such power that they cannot counteract it. Then the patients will be blue. And whether they are florid or blue a little effort, by calling for more oxygen, will at once deepen the cyanosis. Even the florid patients will have very little margin. Such an explanation would not change the part ascribed to the bone marrow. Practically every observer who has examined the bones in these cases has called attention to the replacement of the natural marrow by erythroblastic tissue.

Some of the Uses of Peroxide of Hydrogen.—G. S. Hovenden commends the use of this remedy in carbuncles, inflammation of tendon sheaths, etc., applying the remedy on compresses, as well as syringing it into affected areas where such a procedure is possible. In the latter class of cases (tendon sheaths) it is of the utmost importance that the spread of the infection be checked at once: otherwise a permanent deformity may result, if nothing more serious happens. A compress use of the remedy diluted with water will often stop such processes in twenty-four hours.

Acute Fecal Impaction in the Rectum.—Three cases are reported by W. M. Robson. In the first, the conditions followed rectal feeding, required by severe hemorrhage from a duodenal ulcer; in the second, the condition followed an attack of diarrhea and vomiting; in the third a diarrhea with fever. The most prominent symptom in such cases is tenesmus, while they often have a spurious diarrhea due to catarrhal changes set up in the rectal mucosa by the presence of the fecal mass. The tenesmus is due partly to mechanical stimulation by the impacted feces and partly to the inflammation set up by their presence, and one condition aggravates the other. A lack of proper amount of water in the diet is often the cause of this rectal condition. A patient fed by the rectum does not absorb or retain enough fluid to meet his requirements. In diarrhea, extra fluid should be given by the mouth, and is well taken in the form of lemonade. A safeguard is to give a small quantity of some saline aperient which tends to prevent the absorption of too much fluid from the bowel. In all such cases, whenever tenesmus is associated with the passage of small quantities of fecal-stained mucus and pain on attempting to defecate, rectal examination should always be made.

Pyelonephritis in Pregnancy.—Herbert French says there are certain medical diseases for which pregnancy appears to make itself directly responsible. Pyelonephritis of late years has been recognized with greater frequency in pregnant women. It may easily be mistaken for something else. The milder cases may be regarded as simple pain in the back, as lumbago, as influenza, and so forth; severer cases may be thought to have pneumonia, pleurisy, or the like; the most severe cases may be diagnosed as appendicitis or as some other intraabdominal condition. The main symptoms of the disease are backache and pyrexia, with or without headache, vomiting, or rigors, and unless the urine is carefully examined for pus corpuscles the real cause of the trouble might readily be overlooked. The infecting organism in these cases is almost without exception the *Bacillus coli communis*. The pyelonephritis is not due to a cystitis, for in practically all the patients the bladder has been healthy, at any rate, at the beginning of the disease. There is frequently a dilatation of the ureter beginning one inch above the bladder. Evidently the sequence of events is this: Enlargement of the uterus; compression of the ureter against the brim of the true pelvis; consequent difficulty in the ejection of urine secreted by the corresponding kidney; infection of the urine retained in the partially obstructed ureter and renal pelvis; and subsequent spread to the kidney substance itself. The pyelonephritis of pregnancy would thus be comparable in some respects with pyelonephritis due to other causes, such as enlargement of the prostate in man; and just as in the latter case removal of the obstruction tends to cure the renal mischief, so does the birth of the child result in most cases in rapid amelioration and even complete cure of the trouble from which the pregnant woman has suffered.

Berliner klinische Wochenschrift, April 27 and May 4, 1908.

Local Sensitiveness of the Conjunctiva to Tuberculin.—Cohn says that a single instillation of one per cent. old tuberculin into the conjunctiva of nontuberculous persons does not produce a visible reaction, but results in an increased sensitiveness to the tuberculin. This new property of the tissue is shown by a visible reaction to a repeated instillation of the same substance and by the capacity to attract tuberculin injected into the blood and react with it. These phenomena are strictly local, being limited to the conjunctiva experimented with. They become manifest not earlier than five days after the first instillation, and, indeed, they are best developed only in the beginning of the third week. It is possible, though not at all proven, that such acquired sensitiveness of the conjunctiva is a sign of latent tuberculosis existing somewhere in the organism.

Sternal Pain and Tenderness.—Hampeln says that pain and tenderness of the sternum is a frequently observed phenomenon. Such sensation is usually located in the bone or its periosteum and not in the overlying soft parts, though in some cases it is a neuralgia affecting the sternal terminations of the intercostal nerves. The ultimate cause of this pain and tenderness is to be found

in repeated small injuries caused to the sternum by the clothing of the patient and his occupation. Often a constitutional weakness of the skeleton acts as a predisposing moment. The treatment consists in putting a stop to the injuries of occupation, if such exist, and in hydrotherapeutic measures, rest, and massage. In a few cases, mechanical support of the skeleton by plaster jackets, may be necessary.

Ophthalmotuberculin Reaction.—Rosenbach has tried the Calmette ophthalmotuberculin test in children suffering from various surgical affections. Of the twenty-eight cases with surgical affections other than tuberculosis, none gave a positive reaction; of five suspicious cases, two gave a positive reaction and three did not react. Sixteen of the nineteen children with tuberculosis clinically diagnosed gave a positive reaction, while three did not react. Two of the latter were in very bad condition; the third had a small tuberculous focus in the patella. In one case, the test resulted in a severe conjunctivitis which lasted over four weeks. Rosenbach concludes that positive test speaks for the presence of tuberculosis, while negative test does not exclude it.

Münchener medizinische Wochenschrift, April 21 and 28, 1908.

Pneumonia Caused by Friedländer's Bacillus Pneumoniæ.—Apelt does not share the opinion of A. Fränkel, that croupous pneumonia is caused only by the *Micrococcus lanceolatus*. He gives the histories of ten cases of pneumonia, in three of which Friedländer's *Bacillus pneumoniæ* was demonstrated in the sputum and in the blood during the life of the patient; in two cases it was recovered from an abscess of the lung complicating a pneumonia; eight cases came to autopsy, and all showed the presence of the organism in the blood or the organs. The author thinks that such pneumonias differ from the type due to the pneumococcus, by the usual absence of the initial chill and of herpes labialis and by higher mortality. The diagnosis may be made by the sputum, which is mucous in character and contains the characteristic diplobacillus.

Serotherapy in Infections with the Streptococcus.—Zangemeister says that the antistreptococcus sera obtained from horses and found protective for many other animals are completely useless in the experimental infections of apes, which can be rendered immune only by the use of sera obtained from closely related species. Therefore, the action of various horse sera may be successfully tried on apes because this animal, standing closest to man biologically, is just as refractive to such sera as the human being. In addition, the author has found that in several cases the use of horse serum has hastened the death of the apes experimented upon; it is to be remembered, therefore, that the damage done by the introduction of strange sera into human blood may outweigh the advantages due to their immunizing property.

Improvement and Simplification of Disinfection of the Skin.—V. Brünn says that the new principle in the disinfection of the skin consists in trying to prevent the transference of the organisms found on the skin to the operation field and not in the attempts to kill them by antiseptics. From this standpoint too much mechanical cleansing of the hands is to be condemned: it cannot remove the organisms, and only helps their transfer to the operation field by bringing them out of the deeper layers of the skin. Rubber gloves ought to be used to protect the field from the organisms on the operator's hand. The patient's skin is best treated by long application of alcohol, which shrinks the skin and attaches the organisms more closely to the tissues that harbor them. Ninety-six per cent. alcohol is used by the author, being applied by means of a sterile swab to the operator's hands and to the skin of the operation field. The results after three months' trial of this method compared very well with previous disinfection technique. The only disadvantage, the drying effect of alcohol upon the operator's hands, is overcome by the use of emollient preparations after the operation.

Deutsche medizinische Wochenschrift, April 16 and 23, 1908.

Pathogenesis and Operative Treatment of Prolapsus Recti.—Rotter says that prolapse of the rectum is due to the loosening of the structures which normally hold this portion of the intestine in place. These structures are the bony pelvis, the muscular pelvic floor, and the pelvic fasciæ. In prolapse the anal canal is widened, the pelvic floor takes on the position and shape which it normally has in the act of defecation, and the intro-abdominal pressure acts upon the sphincter ani independent of this act. In some cases the prolapse is predisposed by abnormal depth of the pouch of Douglas. In treatment of the condition the author has had most satisfaction with the operation of Rehn-Delorme, the technique of which he summarizes in the article. Of the three patients operated by him according to this method, two remained cured seven and eight months after the operation, one showed a tendency to recurrence of the prolapse.

The Practical Significance of Barberio's Sperm Reaction.—Fraenckel says that Barberio's reaction, which consists of the precipitation of microscopical yellow crystals when semen is mixed with saturated solution of picric acid, is not sufficient for the positive identification of human sperm. Similar crystals, though not in such abundance, may be obtained with other substances. Clinically, however, the appearance of numerous yellow, ovoid, or needle-shaped, strongly refracting crystals may serve for the identification of prostatic secretion and of human semen, especially in cases of azoospermia, where the diagnostic spermatozoa are absent. For forensic purposes the reaction has no value, and in any case a negative outcome does not exclude the possibility that the liquid under examination may contain human seminal fluid.

A New Operation for Old Fractures of the Patella.—Rotter says that in operating upon old patellar fractures it is often impossible to bring together the displaced fragments, because the quadriceps muscle has lost its elasticity. To overcome this difficulty he makes use of a long flap made out of the aponeurosis of the quadriceps muscle, the apex of the flap being above, while its base lies at the upper patellar fragment. This flap is turned down, so that its former anterior surface comes to lie upon the fragments and the patellar ligament. It is then sutured to the patellar ligament by numerous catgut sutures. Thus the contractions of the quadriceps can take effect upon the lower patellar fragment and extension at the kneejoint again becomes possible. A patient treated in this manner showed satisfactory result nine months after the operation.

The Movement of Tissue Fluids in Bier's Hyperemia.—Joseph and Schliep have studied the effect of Bier's hyperemia upon the movements of colored particles introduced into the tissues or into the blood. They say that such elements, if placed in the interstitial tissue, are normally transported to the spaces lying further in the lymph stream. The bandage used in hyperemia, on the other hand, stops this movement; any such elements in the hyperemic zone are forced to stop in the dilated lymph channels of the region. The edema caused by the hyperemia stands in close relation to the blood serum; substances introduced into the blood at any place and in any fashion appear in the fluid of the hyperemic edema. The elements that are found in the neighboring lymph channels are transported to the edematous region and are distributed uniformly and thoroughly through the tissues of the region. After a prolonged hyperemia the increased tissue fluids change the direction of their flow and send the particles contained in them towards the periphery, where they may appear in fresh wounds, if such are present. After the bandage is loosened, the particles are carried away with the tissue fluids. They are not to be found in the connective tissue spaces lying more centrally; indeed, the stream from the hyperemic area carries away with it other particles that have been placed into the connective tissue spaces at some distance from that area. In inflammation, the flow of tissue fluids is quickened from the beginning, and it carries the small elements very rapidly out of the inflamed area.

Treatment of Metritis by the Use of Cups Placed Over the Cervix, after Bier's Method.—F. Jaule and Robert Loewy recommend the use of a sort of speculum which is placed over the cervix and the contained air exhausted by means of a syringe, so as to produce congestion of the cervix after Bier's method. When the apparatus is in place the cervix becomes violet color and ulcerations blackish. If there is pus or mucous in the cavity of the uterus it is aspirated into the speculum, and a small amount of blood will flow from any ulceration. The sittings are given daily, or when much pain is caused every second or third day. Pain of a heavy character is experienced such as is experienced at the menstrual period, but it is not usually severe. The hypogastric region remains sensitive for some hours after the application. The method is recommended by the authors as applicable to all cases of metritis, whether simple or complicated with para-metritis or pelvic peritonitis. It removes all retained secretions. After several sittings have been given the pelvic congestion is lessened. Ulcerations are healed and entirely disappear and the progress of epithelialization may be followed.—*La Presse Médicale.*

Book Reviews.

Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties. A Manual of Its Practical Application. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; Attending Surgeon to the German Hospital; Consulting Surgeon to the New York Skin and Cancer Hospital, and to the New York Infirmary; and Professor Victor Schmieden, Assistant to Professor Bier, University of Berlin, Germany. Philadelphia and London: W. B. Saunders Co., 1908.

The Bier method of treating disease by artificial hyperemia has assumed a place of such importance in modern therapeutics that a work on this subject in the English language has become an absolute necessity. This book omits all theories on the subject, being practical in every sense of the word. In the short General Part the authors discuss the advantages of hyperemic treatment over other methods. Then they describe the two kinds of hyperemia—the passive or venous, produced by an elastic bandage or suction cup, and the active or arterial, produced by hot air. In the Special Part they mention all the diseases (surgical, medical, and those of the specialties) which can be treated by Bier's hyperemia, as well as the technique of applying the latter in each case. Excellent illustrations aid in the understanding of the text, so that one cannot fail to use the method correctly. The writers discuss at length those conditions in which sufficient experience has been collected to warrant a recommendation of the method, a short description only being given of those in which the treatment promises good results but has not yet been fully tested. Throughout the book the authors constantly emphasize the first underlying principle of Bier's method: "The blood must continue to circulate." This is a wise warning, as most beginners tend to overdo.

Outlines of Psychiatry. By William A. White, M.D., Superintendent Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases, Georgetown University; Professor of Mental Diseases, George Washington University; and Lecturer on Insanity, U. S. Army and U. S. Navy Medical Schools. New York: Journal of Nervous and Mental Disease Publishing Company, 1907.

The writer is one of our younger and up-to-date superintendents who stands for things "germanized" in the new psychiatry. The present volume is the first of a series of monographs, translations and minor text-books relating to nervous and mental diseases, to be brought out by the same publishers, and is in the nature of a text-book intended for the medical student. As such it answers a good purpose. The writer makes no claims to exhaustiveness, completeness or originality. Extended case-histories are omitted and there are no references whatever to other authorities who may have been consulted. On account of the very incompleteness of the work, such references would have been of assistance in looking up more extensively any particular subjects. The book opens with a rudimentary discussion of fundamental psychological processes. A chapter is devoted to defining insanity; and a chapter each to classification, etiology, treatment, general symptomatology and examination of the insane. The classification is essentially Kraeplinian. The chapter on examination is very suggestive in its completeness and based on the methods of some of the Germans. Paranoia and paranoid states, manic depressive psychoses, paresis, dementia præcox, involution melancholia, the senile psychoses, the infection exhaustion psychoses, the toxic psychoses, psychoses associated with other diseases, borderland and episodic states, and idiocy and imbecility, are discussed, each in a chapter, in the above order.

Étude Histo-Chimique et Cytologique des Crachats. Par le Dr. S. Israels de Jong, Ancien Interne Lauréat des Hôpitaux de Paris. Paris: G. Steinheil, 1907.

This brochure is a study on the examination of the sputum, and in it the author discusses in some detail each of the component parts, viz., mucus, sero-albuminous exudate, and the cells. The bacteriological study of the sputum and also its microscopical characteristics have received ample recognition at the hands of writers on the subject; but the study of the cells and exudate has often been neglected. The present work is an attempt to supply this omission.

The Blind-Deaf. A Monograph. Being a Reprint of the Deaf-Blind, with Revisions and Additions, by William Wade. Printed for Private Circulation. Indianapolis: Herker Brothers, 1904.

This is a book full of encouragement to those interested in any unfortunate deprived of the faculties of sight and hearing. The book is made up of a list of blind-deaf persons in this country and Canada, and a long list it is, who have been brought through the cultivation of the sense of touch into relation with the world and those in it. The degree of education to which these children attained varied, of course, with their natural abilities and with the ability of the instructor, but in the case of all, the progress made was astounding to those who do not know what can be done by patience and perseverance. The human mind is a wonderful thing, and this record of its triumphs over the loss of its instruments for communication with the external world is a most interesting and inspiring document.

Metabolism and Practical Medicine. By Carl von Noorden, Professor of the First University Medical Clinic, Vienna.

Vol. III.—The Pathology of Metabolism. By Carl von Noorden, H. Salomon, A. Schmidt, A. Czerney, H. Steinitz, C. Dapper, M. Matthes, C. Neuberg, O. Loewi, and L. Mohr. Anglo-American Issue under the Editorship of I. Walker Hall, Professor of Pathology, University College, Bristol, Pathologist to the Bristol Royal Infirmary. Chicago: W. T. Keener and Company, 1907.

The general character and scope of this treatise have already been indicated in the notes in these columns on the German original and on the first and second volumes of the translation. The present large volume of one thousand three hundred pages, corresponding to the second of the original, closes the work. It deals with metabolism as affected by the following conditions and agents: diabetes mellitus, gout, obesity, rarer derangements of carbohydrate metabolism, skin diseases, cancer, children's diseases, mineral waters, baths, disorders of the ductless glands, the rarer disturbances of protein metabolism, oxaluria, phosphaturia, drugs and poisons, light, Röntgen and radium rays, nervous and mental diseases, bone and joint diseases, and diabetes insipidus. In an appendix the analysis and caloric value of the commoner foods in the cooked and uncooked condition have been conveniently tabulated. The volume also contains the index to the second volume. The translators of the various sections have for the most part performed their tasks with judgment and have rendered the oftentimes very difficult language of the original text into smoothly reading English. The references to the literature have been brought more fully to date by the addition of recent contributions, particularly those of English and American writers. It is hardly necessary to say more than that the translation is the full equivalent of the original text, and that the editor and his collaborators deserve the greatest gratitude for having made this monumental work of reference accessible to English and American readers.

Anatomy of the Brain and Spinal Cord; with special reference to Mechanism and Function. For Students and Practitioners. By Harris E. Santee M.D., Ph.D., Professor of Anatomy in the College of Physicians and Surgeons, Medical Department, University of Illinois; Professor of Anatomy in Jenner Medical College, Chicago; Member of Association of American Anatomists. Fourth edition, revised and enlarged. With 128 illustrations, 33 of which are printed in colors. Philadelphia: P. Blakiston's Son & Co., 1907.

In this handsome volume the author sets forth the present status of the anatomy of the human brain and spinal cord. As stated in the preface "The special objects held in view throughout the book are the location of functional centers and the tracing of their afferent, associative and efferent connections. Particular emphasis is laid upon the origin, course, termination, and function of conduction paths as they are met in the regular study, and the more important and better known of these paths are summed up in a final chapter on the tracing of impulses. Function is everywhere correlated with structure; and so far as present knowledge permits, the function of each group of neurones is given in connection with its anatomical description." The book is divided into eight chapters, the first of which discusses the meninges of the brain; the second, is a general consideration of the brain. Chapter three is a dissertation of about two hundred pages on the cerebrum, with subdivisions on the forebrain, the midbrain, and the structure of the cerebrum; this is followed by a chapter on the cerebellum, pons, medulla, and the fourth ventricle. The next two chapters deal respectively with the spinal meninges and the spinal cord. The seventh chapter is on the tracing of impulses, and takes up in turn the efferent paths, afferent paths, and reex paths; and the volume concludes with a short chapter on the embryology of the brain and spinal cord. The book is well arranged, and conducts the reader by easy stages and in a pleasing way over a road that is too often made arduous and repellent. The illustrations are excellent, the table of contents and index are unusually complete and helpful, and the general get up of the book is all that can be desired. Readers and students in need of a work on this important subject are advised to inspect this volume.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held April 27, 1908.

THE PRESIDENT, DR. J. RIDDLE GOFFE, IN THE CHAIR.

Optometry Bill.—The following letter was ordered sent to Governor Hughes: "Notwithstanding the protest of the Medical Society of the County of New York, whose membership amounts to about 2,200 practising physicians in the County of New York, and the protests of other medical societies and of the Opticians' League of New York State, Senate Bill No. 1033, introductory No. 320, has passed both Houses of the Legislature and is now presented to you for executive action. We, the members of the Medical Society of the County of New York, assembled this evening at our regular meeting, respectfully beg to enter again our protest against this bill becoming a law, believing it to be class legislation which would work an injury to the people of this State. The treatment of the eyes by glasses is unquestionably a part of the practice of medicine, and should these gentlemen desire to be licensed to this special work, we feel that the public should be protected by compelling them to conform to the laws now governing the licensing of all physicians of this State."

State Farm for Women.—Dr. E. ELIOT HARRIS, Chairman of the Committee on Legislation, offered the following resolution, which was seconded and passed: "Resolved, That the Medical Society of the County of New York petitions His Excellency, Charles E. Hughes, Governor of the State of New York, for his favorable action on the bill which has passed both branches of the Legislature, entitled: 'An Act to Establish a State Farm for Women' and making an appropriation therefor."

Custodial Asylum.—Dr. E. ELIOT HARRIS, Chairman of the Committee on Legislation, offered the following resolution, which was seconded and passed: "Resolved, That the Medical Society of the County of New York hereby petitions His Excellency, Charles E. Hughes, Governor of this State, to sign the bill which has passed the Senate and Assembly, entitled: 'An Act Making an Appropriation for the Purchase of a Site for the Eastern New York State Custodial Asylum.'"

Members and Dues.—The President announced that members whose dues or assessments for the current year were unpaid May 1, or who were under suspension, would not be eligible for nomination or election, or appointment for any official position in the Society, nor would they be entitled to vote or to receive the notices, publications, or privileges of the Society until their dues were paid. Any member whose dues or assessments for the current year were not paid before December 31 would thereupon cease to be a member of the Society. This was in accordance with the action of the Comitia Minora.

The scientific session was devoted to a symposium on obstetric prophylaxis.

The Hygiene and Management of Pregnancy, Including the Examination of the Urine.—Dr. AUSTIN FLINT, Jr., read this paper, and said that he would take up this subject in a general way from the standpoint of the general practitioner and try to emphasize those points which, in his experience, were often neglected. In recent years many important advances had been made in the management of pregnancy which were far-reaching in their results, for the welfare of both the mother and child. It was not too much to say that most of the complications of labor and the puerperium could be forestalled and the dangers materially lessened by proper prophylaxis. The management of pregnancy he divided into three periods of three months each. During the first period the ordinary rules of health should be followed and, under ordinary conditions, she should be allowed to lead her usual life without restrictions. Slight vomiting required no treatment as a rule; but if it was marked and persistent, the cause should be sought for. He recognized three distinct types of vomiting, the neurotic, the reflex, and the toxemic, the first being the most frequent type met with. This began, as a rule, about the sixth week and continued until the beginning of the fourth month. Regulation of the diet, removing constipation, and the administration of oxalate of cerium would ordinarily improve the condition. If the vomiting persisted, a pelvic examination, as well as an examination of the urine, should be made. The reflex type of vomiting was due to some pathological change of the pelvic organs, a backward displacement of the uterus being the most common. The toxemic type was more properly called pernicious vomiting, and often began as an ordinary neurotic or hysterical vomiting, the toxemic condition being secondary. The diagnosis was made by a chemical examination of the twenty-four hours' urine. Williams had shown that the ammonia coefficient in the first half of pregnancy varied between four and five per cent., but in toxemic vomiting it rose to ten, twenty, or even thirty per cent. So soon as the diagnosis of toxemic vomiting was made the uterus should be promptly emptied. The change in the nitrogen distribution in the urine was an absolute indication for an early abortion. A regular systematic examination of the urine should be made during the second period; this should be done every second week up to the last month, when the interval should be a week. The danger of the occurrence of eclampsia increased as pregnancy advanced, and the only way to be forewarned of danger was to insist upon regular examinations. Prophylaxis was productive of the best results during the third period, and pelvic mensuration should be the routine practice, being the only way that a diagnosis of pelvic contraction could be made. The importance of this could be appreciated only when one remembered that contraction occurred in from twelve to fourteen per cent. of all cases. About six weeks before the date of confinement, the patient should be examined; if the pelvic measurements were small, six weeks allowed ample time for interference. The size of the uterus, the quantity of amniotic fluid, and the size of the child's head should be estimated. Dr. Flint called attention to the work of Prochownik who applied the principles of dieting which he had previously used for the reduction of weight in adults, for the purpose of reducing weight of children born at term. The results were very favorable. This diet eliminated as far as was possible all fluids and carbohydrates, allowing proteids and green vegetables, but these only in limited amounts. Dr. Flint said he could speak well of the value of this measure to prevent oversized children, and so far he had never seen any ill effects from the use of this diet. An abundance of fresh air and walking exercises were of the greatest value, and nothing favored preliminary softening of the lower uterine segment and allowed the head to sink down through the pelvic brim as well as these daily walks. The patient should be instructed in regard to proper clothing. An abdominal binder or corset should be worn so as to hold the uterus up, and hold the long axis of the child in the axis of the pelvic inlet. Nursing was an ordeal which was justly dreaded by the mother when no attention was paid to the preparation of the nipples. The nipples should be painted over with a solution of tannic acid in glycerine every night, beginning about six weeks before the expected confinement. The clothing should be worn so as not to press upon the nipples. A regular examination of the urine should always be made, at least once a week for the first six weeks.

The Management of the States of Labor to Prevent Dystocia.—Dr. RICHARD C. NORRIS of Philadelphia said that the prevention of inertia, hemorrhage, and lacera-

tions were, in some respects, antithetical. For the first, the labor should be hastened; to avoid the second, it should be neither too rapid nor too slow; for the third the termination of labor should be retarded. Women differed so in strength, endurance, and quality of tissue that the actual duration of the first and second stages of labor had a very wide variation. When the amniotic sac was unruptured, a delay beyond twelve hours in the first stage of labor, associated with inefficient pains, was best treated by narcotics; this produced a sleep and allayed irritability. He had but little faith in quinine in the treatment of uterine inertia. Ergot he never used during the first or second stages of labor. When an edematous cervix was nipped between the head and symphysis a sterilized glycerine tampon should be held in contact with the lip of the cervix; this would cause the obstruction to disappear. Spasm, rigidity, hypertrophy, or cicatricial contraction, might be the underlying causes in a prolonged first stage and, once recognized, should be treated. If it was necessary to make Dührrsen's incisions, they should be made free enough to avoid uncontrollable lacerations when the presenting part passed through the cervix. It was his experience that next to a disregard of aseptic technique, the early application of the forceps before complete dilatation was the general practitioner's greatest obstetric sin of commission. When a forceps delivery was likely to follow, he chose the Pomeroy bag for primiparæ, for its efficient dilatation of the lower birth canal surpassed other means for that purpose, and the only drawback was the necessity for an anesthetic. As a rule, it might be stated that in primiparæ four, in multiparæ two, hours should be the maximum limit of the second stage of labor. He avoided the induction of deep anesthesia at the approach of the third stage of labor, preferring always to conduct the placental delivery with the patient fully returned to consciousness, the proper management of the third stage really consisting in the prevention of hemorrhage. When uterine inertia had characterized the labor, or when there was given a history of bleeding, a hypodermic injection of an aseptic preparation of ergot should be given just prior to the delivery of the infant. Immediately thereafter the hand should be placed on the fundus, but no attempt should be made to deliver the placenta for fifteen to thirty minutes, so long as there was a tendency to relaxation and hemorrhage. Manipulation predisposed to bleeding by dislodging clots. If hemorrhage occurred and persisted after the too early or unsuccessful resort to the Credé expression, aseptic ergot should be injected into the thigh, and the uterus at once invaded by the gloved hand to remove clots and placental masses, and to separate completely a partially adherent placenta. While a hot, sterile douche and appliances for the intrauterine pack were forthcoming, the vaginal hand should grasp the cervix, occlude it, and push it upward to forcibly make traction on the blood-vessels; the abdominal hand should force the fundus downward and forward over the symphysis to angulate the canal and further stretch and occlude the vessels supplying the uterus with blood. At the same time the ulnar surface of the abdominal hand might compress the aorta and vena cava through the abdominal wall. As a last resort the uterus might be packed with a large quantity of sterilized gauze, the tampon reaching from fundus to vulva. Inversion of the uterus he believed to be always preventable. The cardinal principle underlying every means to prevent lacerations of the birth canal might be expressed in the one word, dilatation. The prevention of uterine rupture that occurred during pregnancy from anomalies in the shape of musculature of that organ, so far as his knowledge went, was impossible. It was the neglected cases of obstruction that brought them their spontaneous ruptures; the unskilled operator, especially when he attempted a foolhardy version, was the cause of violent ruptures. Lacerations of the cervix were best prevented by securing naturally or through artificial means, complete dilatation. The application of the forceps before complete dilatation and its dynamic use to complete dilatation was only permissible to the operator of wide experience who knew the time required and the dangers incident to this method. Manual efforts at dilatation could not be compared to the efficiency of Pomeroy's bag. The tendency of its vaginal portion to be spontaneously extruded from the vagina and to drag downward the cervix, could be prevented only by holding it within the vagina during the distention of its vaginal compartment.

The Prevention of Maternal Infection.—Dr. Edwin B. Cragin read this paper, dividing his subject naturally into three periods of time, pregnancy, labor, the puerperium. The avenues of infection concerned the genital tract on the one hand, and the breasts on the other. Three possibilities of infection demanded careful attention, the use of vaginal douches with unclean nozzles by the patient, marital relations during the last weeks of pregnancy with husband unclean but not infected, and marital relations during the last weeks of pregnancy with husband infected with gonorrhea. Patients should be instructed not to take vaginal douches during pregnancy except by special order of the obstetrician and with special precautions. From many a case of infection following labor could the history be obtained that marital relations had been practised within forty-eight hours preceding labor. The three essentials to a clean vulvar field were an empty rectum, a closely clipped or shaven vulva, and a vulva cleansed with clean soap and water, the direction of the cleansing being from mons to anus. Sterile rubber gloves should always be worn by the doctor to safeguard against infection. Vaginal examinations should be made as infrequently as possible. Care should especially be taken not to carry infection by contact with the vulva not sterile to a sterile vagina. The presence of organic material, such as portions of placenta, membranes, and blood clots within the uterus so favored the development of a sapremia and perhaps a septicemia that Dr. Cragin said he desired to emphasize the importance of determining first, that the placenta and membranes had been completely expelled and, second, that the uterus remained so contracted that blood clots could not accumulate within it. The first object was gained by waiting a sufficient length of time for the uterus to regain tone before expressing the placenta, and this time was usually fixed at twenty minutes from the birth of the child. During this time the fundus of the uterus was gently held with just manipulation enough to prevent ballooning. If an examination showed the absence of any large portions of either placenta or membranes, infection would be avoided by carefully entering the uterus with the sterile gloved hand and removing the retained portion. Greater safety lay in the avoidance of the postpartum douche; there were two indications for its use, however, to check hemorrhage, and washing away débris that had been loosened by the finger. He believed the use of ergot had a special value as a supplement to, but not a substitute for, the holding of the fundus to maintain the contraction of the uterus. It was a good rule to suture a lacerated cervix immediately after labor only where there was excessive hemorrhage. The only way to use the catheter in the female was, with labia separated and meatus well exposed and cleansed, to pass the catheter directly into the meatus without touching the surrounding parts. The nipples should be bathed night and morning with a fifty per cent. solution of borax in alcohol. If the nipples were retracted, easy nursing and ready emptying of the ducts were favored by having the patient, during the last weeks of pregnancy, gently draw out the nipples with clean fingers at the time she bathed with the borax and alcohol solution. The care of the breasts and nipples during the puerperium implied cleanliness, support, and free drainage. To prevent abrasions the baby should not be allowed at the breast longer than

five minutes every four hours and only in the day time, until the milk was secreted. For the healing of cracks and abrasions the application of an eight per cent. nitrate of silver solution, followed for a short time by the use of a sterile nipple shield, had proven valuable in his hands. If the nipple continued to be tender and nursing painful, applications of glycerole of tannin would usually give relief. If mastitis threatened, the breasts should be emptied, the bowels moved, and ice applied to the breasts.

The Prevention of Fetal Infection; Eyes, Mouth, Umbilicus.—Dr. J. Clifton Edgar presented this communication. He said that cleansing of the infant's mouth immediately after delivery was especially called for after delayed or tedious labor and in cases of gonococcus infection in the mother. He did not believe there was any especial value in chemical antiseptics in mouth cleansing: the aim should be to remove mechanically any foreign substances as thoroughly and as gently as possible. Immediately after delivery of the head, the lips and nose were wiped free from mucus and foreign substances, and then the little finger was wrapped with a piece of gauze, dipped in boric acid solution or plain water, was passed into the child's mouth and any accumulated mucus, blood, or meconium removed by an outward sweep of the finger in each cheek. Each eyelid should be carefully cleansed by means of a piece of old linen and sterile water, or boric acid solution. Ophthalmia neonatorum caused from seven to ten per cent. of the existing blindness to-day. The midwife was mainly responsible for this condition. The gonococcus was found to be the cause of the infection in sixty per cent. of the cases. If at the time of birth, and before the eyes were opened, the lids were carefully and gently cleansed from within outward with gauze or absorbent cotton moistened in sterile water, and a separate wipe used for each eye, and if subsequently no pyrogenic germs were carried from the body to the eyes, ophthalmia neonatorum would be reduced to a very small percentage. If this was supplemented with a drop of a solution of one of the silver salts dropped on the cornea of each eye, the chances of the eyes escaping infection would be raised to the highest point. Which silver salt to use was still a debatable question. The early death of the infant without assignable cause should always make one suspect infection through the umbilical vessels. The cord should be handled as gently as possible and with clean hands. Sterile ligatures and scissors only should be used in ligating and cutting the cord. The raw stump should be covered immediately with a piece of sterile gauze and the infant wrapped in a sterile towel until the completion of the third or placental stage. A lubricant, and not a tub bath, should be used for the first cleansing of the child. The subsequent cleansing of the infant should be by sponging, and not by tubbing, until the umbilical wound had healed. In the tenement house service it was the routine practice to tie the cord with as little traumatism as possible, and after the baby had been greased with sterile lanolin and the vernix caseosa removed as thoroughly as possible, the stump of the umbilical cord was placed in a split-gauze dressing and the latter folded carefully over the stump; the binder was then applied and held in place by two safety pins. Unless the binder became soiled, it was left in place until the fifth day. In a series of 1,600 infants in hospital, including 1,000 cases in the East Side tenement houses and 600 in the hospital building, treated by this method, so far as known there had not been a single case of umbilical infection.

Dr. William S. Stone said that consultation in obstetrics was largely emergency work, limited to the latter part of labor, or for puerperal sepsis. A few years ago Dr. Stone had devoted much attention to a study of the relative size of the fetal head and the pelvis, a subject that had been treated with great indifference by his colleagues. He believed it to be worthy of more consideration.

Dr. Ralph H. Pomeroy of Brooklyn advised the use of the Pomeroy bags with discretion because of their great dynamic force and the consequent danger of lacerating the cervix. He called attention to the fact that detachment of the placenta occurred with uterine contraction; therefore he favored expressing the placenta, not after a wait of half an hour, but after the first reasonable contraction that occurred. In every case in which he had to enter the uterine cavity to extract the placenta, the interference to its expulsion was found to be due to retraction of the contraction ring, and not to any attachment of the placenta.

Dr. George L. Brodhead advised the constant observation of these patients, regulation of their diet, frequent examinations of the urine, and exercise up to the very day of confinement if possible. Many cases of dystocia could have been avoided, especially when it was learned that there was a small pelvis, if the patients had been properly instructed in regard to the diet. He believed the dilating bags should be more often used. There should be more external, and fewer internal examinations made; this would result in much fewer cases of sepsis.

Dr. John O. Polak of Brooklyn said that not sufficient attention was paid to the fetal mortality. He cautioned against tardy management. It was well to recognize early malpositions, especially the occipitoposterior positions, which were so frequently overlooked and so jeopardized the child's life. He never repaired a lacerated cervix immediately after delivery except in cases of hemorrhage. He believed that he had prevented cracked nipples by the use of boroglyceride. He now used ergot because it contracted and retracted the uterus and tended to prevent septic absorption.

Dr. Gill Wylie said that a good obstetrician should be a good gynecologist. Surgical principles should be applied in obstetric work, the same as after important surgical operations.

Dr. A. Ernest Gallant presented a method to keep the umbilicus aseptic, a method he had successfully employed during the past fifteen years. In a series of cases experimented on, not one developed jaundice or infection when the dressing was applied.

Dr. J. Milton Mabott said that the woman should be instructed to keep her hands away from the vulva after delivery. He reported the case of a woman who examined herself within twenty-four hours after delivery; she became pyemic and died as the result.

Dr. Richard C. Norris, Dr. Edwin B. Cragin, Dr. Austin Flint, Jr., and Dr. Johannes Pfannenstiel, Professor of Obstetrics and Gynecology, Kiel, Germany, discussed the papers.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundred and Seventeenth Regular Meeting, Held May 1, 1908.

The President, Dr. Robert Abbe, in the Chair.

Parenchymatous Nephritis, with Recovery.—Dr. Beverley Robinson showed this case. The patient was a longshoreman, 42 years old, a native of Ireland, married. He was a moderate drinker in the past. On October 5, 1907, he had a sudden and severe pain in the right side, which was made worse by deep inspiration and by coughing. That afternoon he was seen by Dr. Stanley D. Curran, who recognized the case as one of acute dry pleurisy. The pain subsided in a few days, and was succeeded by an effusion in the right pleural cavity. On October 20, 1907, he was sent to Bellevue Hospital, where he came under the care of Dr. Le Fevre. At this time the patient was suffering from shortness of breath, he was very weak and pale, with bluish lips and rapid and feeble pulse. The apex beat was displaced to the left. His feet, legs, thighs, scrotum, and abdominal tissues were markedly edematous, and his face

patient was a girl, nine years old, whose parents were strong and healthy, but the mother had been exceedingly and hands were also swollen. He was tapped at the hospital, 33 ounces of clear serum being withdrawn; the rest of the fluid was rapidly absorbed. He left the hospital on November 10 and returned to Dr. Curran's care. At this time the chest was clear, but there was still some edema. He was kept in bed on a restricted diet consisting of dry toast, zwieback, easily digested cereals, a raw egg now and then, and a little milk. Salt was restricted. His heart action was such that the use of digitalis was not indicated. The only drugs given were rhubarb and soda, and a diuretic mixture. Under this treatment the patient improved steadily. By November 25 his edema had entirely disappeared, and a week later he returned to his work as longshoreman. Up to the present time he had remained well, with the exception of a mild attack of lumbago. When his urine was last examined by Dr. Curran, on March 16, 1908, it was clear in color and contained but a trace of albumin; no casts. Formerly, it boiled solid, and there were numerous casts of all varieties. His lungs were free, but the vocal resonance and breathing sounds on the right side were diminished, due to the thickened pleura resulting from his former pleurisy. When the patient was last examined by Dr. Robinson, on April 26, 1908, the urine was acid and clear, amber in color, no deposit, no albumin. The breathing sounds were fairly good, and the heart was not perceptibly enlarged. There was a slight systolic murmur at the apex. Pulse, 84; regular. Blood pressure, 125 mm., taken by Dr. Norman Ditman. Dr. Robinson said he regarded this case as one of parenchymatous nephritis, probably of long standing, with interstitial changes in the kidneys. The case was remarkable in that the patient showed such rapid and decided improvement under adverse circumstances.

The Use of the Perforated Zinc Inhaler in Pulmonary Tuberculosis.—Dr. Beverley Robinson presented a man, 25 years old, who had been under his care for the past two years for pulmonary tuberculosis. When the patient first came under observation, there was consolidation of the upper left lung, and tubercle bacilli were found in the sputum. In addition to proper hygienic measures, and a sojourn during the past winter at Asheville, N. C., this patient, during the past year, had regularly worn at night a perforated zinc inhaler containing a mixture of spirits of chloroform, alcohol, and creosote, in equal parts. Under this treatment he had steadily improved. No tubercle bacilli could be demonstrated in his sputum at present, and an examination of his chest showed that his pulmonary lesion had apparently been arrested. Dr. Robinson said he was convinced that in this, as well as in other cases he had in mind, the inhaler was a very important adjunct to the treatment. He also called attention to the fact that a localized congestion of one or both vocal cords, associated with pronounced anemia of the rest of the larynx, was a very significant sign in the early recognition of tuberculosis. This condition may exist without symptoms, occasionally indicating laryngeal trouble, and may be evident when the tuberculin test is unreliable, as well as the *x*-ray. In his judgment every case of pulmonary tuberculosis should be examined with the laryngeal mirror and in many cases, whether the larynx was visibly affected or not, the perforated zinc inhaler should be worn almost continually at night, or day and night, for a long while. It took time to accustom some patients to its proper and efficient use.

Occlusion of the Inferior Vena Cava.—Dr. Walter B. James showed a man whose previous history was unimportant. His occupation was that of a stationary engineer, often working in damp cellars. About five years ago he began to have symptoms pointing to a femoral thrombosis of the left leg; subsequently, the right leg became similarly affected, and when he came under Dr. James' care at Roosevelt Hospital, both legs were swollen, and the patient complained of a good deal of pain in the deep muscles of the back. The superficial veins of the scrotum were markedly swollen, and there were huge varicosities covering the lower abdomen. The thrombotic condition in this case, Dr. James said, had apparently extended upward from the femorals into the iliacs, and occluded the inferior vena cava. In other respects the man was perfectly well, and was able to do his work. The case was of special interest when compared with the one which Dr. James showed at the previous meeting of the Practitioners' Society, a case of total occlusion of the superior cava resulting from pulmonary tuberculosis. It was a matter of great interest to notice that the individual veins which were enlarged were exactly the same in both cases; in other words, the same collateral circulation was developed in both patients through enlargement of the superficial epigastric and the internal mammary veins. In the first case, occlusion of the superior cava, the blood flow was all downward, while in the second case, occlusion of the inferior cava, the blood flow was all upward. In both cases the general visceral circulation was perfectly good. In the superior cava obstruction there was no edema of the lower extremities, while in this latter case the only troublesome feature which brought the patient to the hospital was very marked edema of both legs, with chronic persistent ulcers.

Melanotic Tumor of the Eye and Liver, with Symptoms of Acromegaly.—Dr. Lewis A. Conner showed this case. The patient was a man, 37 years old, who up to ten years ago had been unusually healthy and vigorous. He then developed symptoms suggestive of pulmonary tuberculosis, which lasted for seven years, and then ceased. Three years ago he began to have severe pains in left eye, and about the same time it was noticed that the left lobe of his liver was moderately enlarged. Since then there had been a slowly increasing exophthalmos of the left eye, and a steady growth in the size of the liver, which now was of enormous size, and almost completely filled the abdomen. The eye changes (which have been studied by Dr. C. W. Cutler) had been chiefly those of a retrobulbar growth, but there had been also a slightly elevated pigmented patch in the choroid suggestive of a beginning neoplasm, which had, however, shown little or no disposition to increase. During this time there had been a distinct increase in the size of his head, hands, and feet. This increase was altogether in the bony structure. The nose also had the characteristic appearance of acromegaly, and the lips were thick and prominent. The urine, upon the addition of some oxidizing agent, became black from the presence of melanin. An enlarged, hard lymph node removed from the neck showed the microscopic picture of typical endothelioma, but without pigmentation. Up to very recently the patient's general condition had remained good, although the disease had existed for three years, but at present he was losing weight rapidly and had frequent, profuse sweats, but no temperature. The association of the eye tumor, the enormous liver and the melanuria made it appear almost certain that the growth was a melanoma. This view was supported by the histological findings of the growth, since most of the so-called melanosarcomata were now believed to be of endothelial origin. The fact that no pigment was found in the gland metastasis did not negative such a view, as pigment was frequently lacking in such metastases. It was difficult to say whether the growth was primarily in the choroid, as was usual, or in the episcleral tissue behind the bulb, where normally pigmented cells were to be found. The condition of the eye suggested the latter as the more probable source of the tumor. (One such case had been reported by Achenbach.) As to the cause of the symptoms of acromegaly, one could only conjecture. The bitemporal hemianopsia so often seen in tumors of the pituitary gland was lacking in this case.

A Case of Extensive Myositis Ossificans and Osteochondroma.—Dr. Robert Abbe showed this case. The

nervous and disturbed during her pregnancy. The child was fed on modified milk (Holt's formula), and had suffered from frequent attacks of colic, with constipation, necessitating the use of repeated enemas. During her infancy it was noticed that bumps from striking her head on the crib always left hard ridges remaining for weeks, and that mosquito bites resulted in large swellings and blisters. As a baby, she had excellent muscular control of her head. She was late in learning to walk, about 20 months of age, and it was then noticed that she held her head forward and had an unusual number of falls and forehead bumps. It was also noticed about that time that she could not raise her head to look at the ceiling. When she was two years old, she had massage for the stiffened neck muscles, and a frame corset, with back pressure and a chin rest to hold the head erect. When she was four and a half years old, an orthopedist was consulted, who applied braces, and advised cod liver oil and hypophosphites. She developed a number of hard muscular swellings on the arms and neck, which came and went. In May, 1904, the movements of one arm became rapidly restricted; then the other was similarly affected. Her symptoms at this time were apparently more acute, and she suffered a good deal of discomfort. The muscular swelling, which had formerly been transient in character, now refused to disappear, and became hard and bony in consistence. When she was six years old the braces were discarded.. These hard swellings now involved the back, neck, and arms, and at infrequent intervals a small, new swelling appeared, but for the past two years the disease had shown but little activity. The child lived in the country; her surroundings were all that could be desired, and her general health was apparently excellent. About a year ago, Dr. Abbe said, he began the use of liquor ammonii acetatis and bicarbonate of sodium in the hope of inducing a solution of the excess of phosphate and lime deposits. More recently he had reversed his tactics, and given dilute mineral acids. At his suggestion, Dr. Russell H. Chittenden, who had taken a great deal of interest in the case, had conducted some interesting experiments in connection with it. He first tried withdrawal of the red meats and other foods rich in lime and phosphates, avoiding milk, and using cream, rice, sugar, fruit, and vegetables. After some weeks of this diet he made elaborate studies of the excretions, and found the nitrogen excretion low, with a large output of lime; fully as much as an adult man would excrete. The diet had apparently produced a noticeable elimination of calcium. He then tried a diet without carbohydrate food, using beefsteak, eggs, lettuce, fish, beef broth, spinach, etc. Under this, the output of nitrogen was very large, but at the same time there was a large increase in the output of calcium and phosphoric acid, and he called attention to the fact that the acidosis which resulted from a carbohydrate free diet carried off with it a fairly large amount of calcium. Dr. Abbe said he was inclined to regard this as a case of infectious myositis ossificans, originally starting in infancy in the deep cervical muscles, and after five years wearing itself out, after attacking successively at least twenty muscles, confined chiefly to the neck, back, and sides. The child had now apparently outgrown the active stage of the disease. Incidentally, the chondroosteal changes in muscle and cellular tissues were interesting. At this date it was probably now safe to operate if gain could be planned, without further advance in the disease.

Dr. Charles L. Dana said he recalled one case, in a man of 35 to 40, in whom exostoses, similar to those in the patient shown by Dr. Abbe, developed all over the body in early childhood and had remained unchanged. They were immovable and attached to the bones. He thought that some of those in the present case seemed like real exostoses.

Dr. Virgil P. Gibney said he had seen a number of cases similar to the one shown by Dr. Abbe, and he recalled one case in particular which he studied together with Dr. Janeway and the late Dr. Frank Hamilton. In that case, a typical one of myositis ossificans in a girl about ten years of age, the arms were practically useless until the ossified latissimus dorsi was resected. The scaleni were also involved. The case was reported at length in the *American Journal of the Medical Sciences*. Operation afforded decided relief, and did not cause any recurrence, as did removal of extensive exostoses in the case of osteoarthritis of the hip in a young woman under his care some eight or ten years ago. Brisement forcé aggravated the case, and growth of bone was most marked after every attempt to secure motion. Finally, an operation for complete removal was performed, and the joint was liberated. Within a few months thereafter great bony plates again formed, and the joint was again ankylosed, notwithstanding primary healing after so extensive an operation. Since then, in dealing with cases of osteoarthritis, he had learned to leave these bony growths alone, particularly when they were located about the hip joint. In cases of multiple exostoses, the tibia and upper end of the humerus and the clavicle were favorite sites for their development, especially in the region where the tendons were inserted. In the German army, cases had been reported which were attributed to the carrying of heavy muskets, and in some instances they were associated with a striking history of heredity. In the case presented by Dr. Abbe there was apparently a combination of multiple exostoses and mysositis ossificans.

Bronchoscopy.—Dr. Walter B. James reported the case of a boy, seven years old, who came under observation a week ago suffering from chronic bronchitis and asthma, which was intermittent in character. Upon subsequent examination, the physical signs of obstruction to the entrance of air into the left lung were made out, and upon questioning the boy's mother she stated that last Thanksgiving's Day he had bought a penny trumpet, and while playing upon the same he had accidentally inhaled the reed, and for several days after this occurrence the sound of the whistle in the chest could be distinctly heard. Upon receiving this information from the mother an *x*-ray was taken of the boy's chest, which plainly showed a foreign body, evidently metallic, lying in the median line, opposite the fourth dorsal vertebra, and pointing down to the left bronchus. Dr. Emil Mayer was thereupon asked to see the case in consultation, and he succeeded in removing the foreign body with the bronchoscope. The operation was completed in 13 minutes, without the slightest hemorrhage or any trauma. The foreign body was found lying at the bifurcation of the trachea, and after it had been caught by the clutch of the instrument it was found to be so large that it would not enter the bronchoscopic tube, and it was thereupon withdrawn together with the tube. The operation was done under chloroform, with the child's head thrown back, so as to straighten the trachea, and the straight bronchoscopic tube was then inserted between the vocal cords under the guidance of the light thrown into the tube. The boy, after five months of complete invalidism, was practically well 24 hours after the operation, and after a couple of days more went home cured, without either signs or symptoms of disease.

Melæna Neonatorum, with Report of a Case Cured by Transfusion.—Dr. Samuel W. Lambert reported this case. (See page 885.)

Philadelphia Neurological Society.

At a stated meeting, held April 24, Dr. Alfred Gordon demonstrated "A Case of Unilateral Descending Paralysis." The patient was a girl, about twenty-two years old, who, five years previously, had been seized with pain shooting down the right upper extremity, followed by gradually increasing weakness and wasting of muscles in the same member. Later, weakness and wasting developed in the right lower extremity also. The reflexes were increased

in both extremities on the right side and in the left lower extremity. There was, besides, difficulty in swallowing liquids, which when ingested returned through the nose. Further, the eyes exhibited nystagmic movements, principally in the lateral direction. There were no sensory changes and no disorder of coordination. The case was looked upon as one of anomalous multiple sclerosis. Dr. Francis X. Dercum demonstrated "A Case of Combined Brachial Palsy Associated with the Klumpke Symptom-Group." The patient was a woman, sixty-seven years old, who presented evidences of intrathoracic neoplasm, and who complained of intense pain in the right upper extremity, associated with weakness, and wasting, and marked reddish discoloration. There was also narrowing of the palpebral fissure and of the pupil, and an absence of sweating about the face on the same side. The case was believed to be one of secondary neoplasm of the spinal cord. Dr. J. H. W. Rhein reported "A Case of Exhibiting Agnosia Confined to the Left Hand." Tactile, painful, thermic sensibility, the sense of position and of location, were preserved, as well as the recognition of size, shape, dimension, and density, but there was loss of the power of determining the identity of the object by touch. There was no sign of paralysis, ataxia, apkasia, or spasticity. Dr. T. H. Weisenburg exhibited for W. J. McConnell a young man about twenty-seven years old, with a history of syphilis, who showed an ability to rotate either eye outward independently of the other eye, with the development of diplopia. Dr. M. D. Bloomfield exhibited a man, about thirty-five years old, who presented a somewhat irregular clonic convulsive movement of the right upper extremity, which had been present for a period of eight years, shortly after singing before a group of persons. The movement ceased during sleep, and returned in the morning as soon as the patient began to think of it. He was able, in spite of his disability, to play pool, to swim, to shoot, and to do other things requiring good coordination. The manifestation was looked upon as an hysterical one. Dr. Bloomfield exhibited also a man who had been successfully operated on for carcinoma of the stomach, recognized from a study of the so-called Head's lines and zones, although other methods of diagnosis had failed to establish the existence of the morbid condition. Dr. W. B. Cadwalader presented a communication, entitled, "The Pathology of Acute Anterior Poliomyelitis." From his studies, he reached the conclusion that poliomyelitis was merely a variety of myelitis in which especially the ganglion cells and the gray matter of the anterior horns were involved, although the white matter did not escape, and sometimes the posterior horns also were involved. Dr. Charles W. Burr reported "A Case of Prefrontal Tumor," and presented the specimen. The case was remarkable on account of the short duration, lasting in all eight weeks from the initial loss of consciousness, which ushered in the acute symptoms, although dull headache had been complained of for a short time previously. The patient was a woman, thirty-eight years old, found unconscious upon the street and taken to a hospital, where soon she recovered. In the course of five weeks acute bilateral choked disc developed, and death took place suddenly in an attack of loss of consciousness, without premonition. There were no motor, sensory, or mental symptoms during life. Autopsy disclosed a large tumor in the prefrontal region, displacing but not invading the brain structure. Dr. J. Hendrie Lloyd exhibited "A Tumor of the Parietal Region." The patient was an old Russian woman, presenting symptoms of left spastic hemiplegia. On account of the difficulty of communication, no history could be obtained. After death, an easily enucleable tumor was found situated in the fissure of Rolando, and exerting pressure on the ascending frontal and ascending parietal convolutions. Removal could readily have been effected during life. Dr. Tom A. Williams reported "A Case of Partial Crossed Hemiasynergia." Dr. M. D. Bloomfield presented a communication, entitled, "Epicritic and Protopathic Sensory Pathways." He recited several cases in which a diagnosis was reached from a careful study of Head's lines and zones; that is, areas of hyperesthesia on the surface of the skin that have been found to correspond with the distribution of nerves related to the intra-abdominal and intrathoracic viscera.

AN OINTMENT-APPLICATING SOUND FOR THE MALE URETHRA.

By VICTOR C. PEDERSEN, A.M., M.D.,

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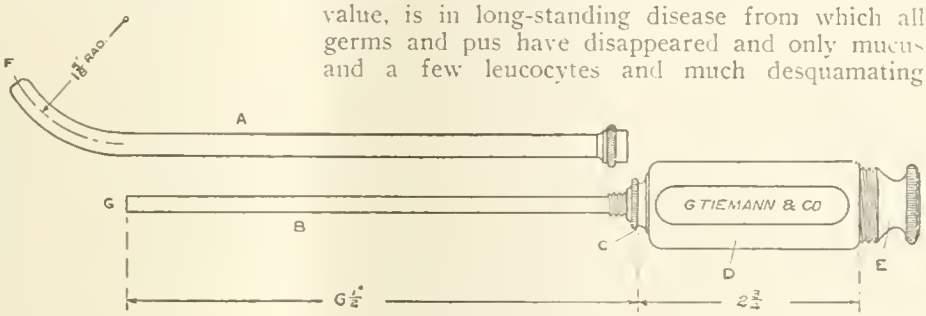
The use of ointments in the various passages of the body is not a highly successful procedure and yet there are cases occasionally met with where a salve is an excellent means of temporarily changing the treatment, which sometimes will result in great benefit. The only type of urethral case in the writer's observation in which salves are of value, is in long-standing disease from which all germs and pus have disappeared and only mucus and a few leucocytes and much desquamating epithelium make up the shreds. It will not succeed in all of these but it is worth the trial.



The Ointment-Applicating Sound.

The type of salve used is of next importance. It must be thin enough not to constitute a foreign body of resistant or irritating elements. As the foregoing condition is purely catarrhal, glycerin must be one important constituent and ichthyol seems to be another desideratum. For absorption, lanoline is a good base thinned down with alboline. The salves which the writer is employing are as follows: For purely catarrhal cases, ichthyol 1-5 part, glycerin 10 parts, liquid alboline 10 parts, lanoline 40 parts. Instead of the ichthyol, 2 parts of argyrol or 6 parts of argyrol may be substituted if astringency seems desirable. The ichthyol salve in various strengths seems to be the best of the three.

The first desideratum of the applicating ointment sound must be that the salve be deposited thinly and evenly in the urethra without any injury to the mucous membrane. For this reason the ointment-applicating sound which my late colleague, Dr. Walter D. Trenwith devised and was about to publish just before his death was faulty. It consisted in a sound with a small opening, so small that it was impossible to press the salve out without having the deep urethra bleed by the irregular motions of the tip of the sound in the effort. A

salve thin enough to correct this difficulty was practically a fluid and lost the characteristics of an ointment.

The writer has taken a standard type of sound size 20 F. (see A in the diagram) with a beak of standard curve but shortened by one inch. The edge of the tube is rolled in a little at the beak to make the instrument painless in passing. At the other end of the sound is a hub and female screw to permit fastening the sound to the rest of the instrument.

The next detail is the inner or delivery tube (see B of the diagram), consisting of a straight smaller tube passing through the hub to the base of the curve of the sound, thus permitting the salve to be delivered only into the curve of the sound itself. This is important because it permits more readily the cleansing of the sound and also changing of the salve with the smallest amount of waste. A hub is attached to the base of this inner tube bearing a male thread on each side of a knurled flange. On the sound side of the knurled flange the thread passes into the hub of the sound as just described; while at the other side of the flange the ointment carrier is attached. The length of the straight part of the shaft of the sound (A) and of the delivery tube (B) is 6½ inches. The hub of the delivery tube is indicated at (C) of the diagram. The ointment carrier (D) is made of hard rubber 2¾ inches long over all, hollowed out into a cavity 1 inch in diameter and containing, roughly speaking, 1½ ounces of salve.

Instead of a plunger worked with the thumb like a syringe, which was the type of ointment carrier devised by the late Dr. Trenwith, the writer has used the screw form of plunger borrowed from the Allingham pile pipe. The purpose in making the ointment carrier as large as it is has been to permit it to be grasped firmly in the whole hand of the operator, thus preventing the very irregular movement of other types of sound, which as previously stated, irritates the deep urethra and prevents the use of any but a very thin ointment. A few turns of the screw may be gently given, after the tip of the sound is in the deep urethra, thus pressing out the required application. In order to reach the deep urethra the shaft of the sound must be held vertical. The shortness of the beak then provides that its tip is in the forepart of the deep urethra; a longer beak, such as the standard, would usually result in depositing the salve within the bladder, which is not a desirable thing to have occur.

In order to free the beak of the sound from the form of salve used so as to change to another salve, the writer adopts the following steps: After withdrawing the sound he thoroughly washes and scrubs the beak and immerses it for a few minutes in a 5 per cent. carbolic acid solution; he then squeezes out a small quantity of the salve and with a sterile piece of gauze wipes it away, then by reversing the screw the small quantity of salve in the beak of the instrument between the tip of the sound and the tip of the delivery tube is sucked into the delivery tube, thus leaving the beak of the sound empty; it may then be boiled, if desired, and transferred to another ointment receptacle with its delivery tube.

The writer is indebted to Messrs. George Tiemann & Co. of this city for assistance in perfecting this rather serviceable apparatus, and offers it to the medical profession as an aid in the treatment of chronic urethral lesions of purely desquamative and catarrhal types.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 23, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	420	201
Diphtheria	397	37
Measles	1555	33
Scarlet Fever	1053	40
Smallpox	—	—
Varicella	144	—
Typhoid Fever	32	4
Whooping Cough	24	4
Cerebrospinal Meningitis	12	9
Malarial Fever	—	—
Totals	3637	328

Health Report.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending May 22, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alabama, Mobile	May 9–15	6	..
California, Los Angeles	April 25–May 2	3	..
San Diego and Vicinity	May 1–8	7	..
San Francisco	Apr. 25–May 2	5	..
District of Columbia, Washington	May 2–9	5	..
Illinois, Chicago	May 2–9	4	..
Danville	May 3–10	2	..
Jacksonville	May 2–9	1	..
Springfield	Apr. 30–May 7	3	..
Indiana, Fort Wayne	May 2–9	4	..
Indianapolis	May 3–10	8	..
La Fayette	May 5–11	2	..
Iowa, Albion	Jan. 1–31	10	..
Ottumwa	May 2–9	5	..
Kansas, Kansas City	May 2–9	5	..
Topeka	May 2–9	9	..
Kentucky, Covington	May 2–9	1	..
Louisiana, New Orleans	May 2–9	5, 3 cases imp't'd	
Michigan, Grand Rapids	May 2–9	1	..
Kalamazoo	May 2–9	2	..
Saginaw	May 2–9	4	..
Missouri, St. Joseph	Mar. 21–May 9	195	1
St. Louis	May 2–9	1	1
Nebraska, South Omaha	May 2–9	2	..
North Carolina, Charlotte	May 1–8	1	..
Ohio, Cincinnati	May 1–8	8	..
Toledo	Apr. 25–May 2	3	..
Tennessee, Nashville	May 2–9	1	..
Texas, Galveston	May 1–8	2	..
San Antonio	May 2–9	6	..
Washington, Spokane	Apr. 25–May 2	9	..
Tacoma	May 2–9	2	..
Wisconsin, La Crosse	Apr. 25–May 9	12	1

SMALLPOX—INSULAR.

Philippine Islands, Manila	Mar. 21–28	7	3

SMALLPOX—FOREIGN.

Austria, Trieste	Apr. 18–25	1	..
Belgium, Ghent	Apr. 18–25	1	1
Brazil, Rio de Janeiro	Mar. 30–Apr. 12	240	104
China, Amoy	Feb. 15–Apr. 4		Present
Hongkong	Mar. 14–28	51	42
Shanghai	Apr. 4–12	1	9
Egypt, Cairo	Apr. 8–22	8	7
France, Paris	Apr. 18–25	2	..
India, Bombay	Apr. 7–14	..	54
Calcutta	Mar. 28–Apr. 4	..	35
Rangoon	Mar. 30–Apr. 4	..	1
Italy, General	Apr. 16–30	63	..
Catania	Apr. 23–30	..	1
Japan, Kobe	Apr. 4–11	6	3
Osaka	Mar. 28–Apr. 4	145	126
Mexico, Aguascalientes	Apr. 26–May 3	..	2
Russia, Odessa	Apr. 23–30	1	1
St. Petersburg	Apr. 4–18	53	6
Spain, Denia	Apr. 11–25	15	4
Valencia	Apr. 12–26	46	2
Straits Settlements, Singapore	Mar. 21–28	..	1
Transvaal, Pretoria	Mar. 28–Apr. 4	..	1
Turkey in Asia, Bagdad	Mar. 28–Apr. 11	65	6
Constantinople	Apr. 12–26	..	7

YELLOW FEVER.

Barbados, Bridgetown and Vicinity	Apr. 14	1	1
Costa Rica, Punta Arenas	May 7	1	..
Cuba, Santiago	May 18	1	..

CHOLERA—INSULAR.

Philippine Is'ds, Las Pinas	Mar. 21–28	..	Present
Pangasinan Prov.	Mar. 21–28	..	"

CHOLERA.

Ceylon, Colombo	Mar. 18–Apr. 4	..	1
China, Hongkong	Nov. 24–28	6	4
India, Bombay	Apr. 7–14	..	1
Calcutta	Mar. 28–Apr. 4	..	210
Madras	Apr. 4–10	..	3
Rangoon	Mar. 28–Apr. 4	..	6

PLAGUE.

Australia, Brisbane	Feb. 29–Mar. 14	3	1
Kempsey	May 2–9	1	..

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Original Articles.

A NEW DUTY OF THE MEDICAL PROFESSION: THE EDUCATION OF THE PUBLIC IN SCIENTIFIC MEDICINE.*

BY HERBERT L. BURRELL, M.D.,

BOSTON, MASS.

THE welcome that is extended to us this year by this great metropolis is peculiarly grateful, for Chicago is the home station of this national association. This great city should serve as an inspiration to us all, for it personifies the zest of the American spirit—vigor, enterprise, and stability of purpose. This city, during the year, has lost one of its most gifted citizens, one whose name was honored in all countries, an ex-president of the association. All honor to the memory of Nicholas Senn, surgeon, writer, investigator, publicist, a man who did pioneer work in surgery and who was always ready to promote the interests of the medical profession.

The coming together of men of mutual aims must always be a subject of public interest. What is the meaning of this gathering of medical men from the length and breadth of this great country?

First: That individually they may be better able to care for the sick. Second: That they may collectively be better fitted to prevent disease. Third: That they may know men and their ways and by social intercourse may live fuller and broader lives. This association is a great power for good or for evil. May its acts be guided by motives that are directed toward the health and prosperity of the people.

There are many subjects of which I should be glad to speak. Some of them have been considered by the association in previous years. Medical education, medical legislation; the desirability and the question of the advisability of the medical profession taking an active interest in practical politics; the establishment of a national bureau of health; the abuse of medical charity, and the work of the Council on Pharmacy and Chemistry; all are subjects of vital interest. To-day I invite your attention to what I believe is a relatively new duty of the medical profession, that of judiciously educating the public in the present position of medical knowledge and in the advances that are being made in scientific medicine.

Until recently medicine has observed a silence as to its position and accomplishments that has made it unique among its sister sciences. A veil of mystery has surrounded it. Born, as medicine was, of fear, nurtured by superstition, it went through the centuries in twilight until it grasped the torch of science, which is beginning to illuminate its way. For long years medicine was only a handmaiden to theology. Faith, that inestimable gift to man, was the guiding star of medicine. Faith in "simples," in fetiches, in amulets, in poisons, in all the forces of Nature and in all the dread legion of phantasms that may be formulated by the mind, all these at times have held sway in medicine. Theories, hypotheses and "fads" ingenious and often containing a grain of truth have in turn dominated medical practice.

The profession has properly been conservative, because the truth in reference to health and disease has not been known. When the vital processes are looked at in the abstract, they are so marvelous and still so far from being entirely understood that it is little wonder they are surrounded by an air of mystery. The family practitioner of our grandfathers' days was a man who was greatly respected. He was discreet and silent. When he entered the sick-room he held his counsel. He appreciated the fact that he was in the presence of a human being afflicted with disease. Frequently he realized that he did not know either the natural processes of health or the natural history of the disease that he was facing; therefore, he was silent. The satirists have always pictured the practitioner of medicine as a venerable old gentleman who discreetly nodded his head in acquiescence or disapproval, who said vague things, and who encouraged his patient and the household to hope for the best and to prepare for the worst. I believe it is generally accepted that our profession has been deemed one that has been filled with charity and love of man, but it has not been conspicuous for its scientific methods.

During my lifetime I have seen, as have many of you, the development of scientific medicine. But medicine to-day, although a science, is still in part an art. Yet the sum of scientific knowledge in medicine is already very large, and as a science medicine has changed from the position in which it haltingly progressed until now it is advancing steadily along many lines.

The art of the practitioner during the past few years has not progressed so rapidly as the science of medicine. Rightly, the attention of the profession has been directed to ascertaining the causes of disease; hence the natural history of disease and its diagnosis have in large measure occupied the attention of the profession. The lack of training in scientific methods led men to reach conclusions from insufficient data; and when these men found that they were mistaken they were frequently swept to the other extreme—that of failing to accept anything of value unless it could be absolutely proved.

Meantime the art of the practitioner has languished. Proprietary medicines and nostrums have been too frequently used by practitioners, feeling as they have that "they may help and the patient wants them." Fortunately, experimental pharmacology at last has come to give us the truth, for by

*President's address at the Fifty-ninth Annual Session of the American Medical Association, at Chicago, June 2-5, 1908. From advance proofs, through the courtesy of the Editor of the *Journal of the American Medical Association.*

its findings we now know what really follows when a drug is given.

At present I believe that physicians are too conventional in their methods of treating disease. They have not paid sufficient attention to the alleviation of the suffering that accompanies some of the incurable maladies. Hydrotherapy, massage, electrotherapy, and particularly psychotherapy, as measures of relief, are permitted to rest in the hands of empirical practitioners, who but slightly understand the forces with which they are dealing. Human beings cling hard and fast to hope. They, fortunately, will rarely accept defeat. They constantly hope when in distress that aid will come by some intervention, physical, psychic or divine. This insistent demand for relief must be remembered by practitioners, but they should also recognize, as Louis did, that there is a natural course of disease.

Progress in science is always haltingly made. In medicine, which is but applied biology, the movement now is steadily forward; for through chemistry, biology, and physics has come some knowledge that enables us to comprehend more clearly many of the vital phenomena of life. To-day we are in possession of certain irrefutable facts. It is unnecessary for me to catalogue to you the advances that have been made in medicine during this last generation; suffice it to say that it has caused a revolution. The application by Lord Lister of Pasteur's work in biology has made a new era in surgery. Chemistry and biology have made sanitation a science. Physics has enabled us to comprehend some of the vital processes. These contemporary sciences have illuminated medicine, but have medicine and surgery in themselves properly advanced? I think not. The field for advance is still open in clinical medicine and surgery. The human being, particularly when sick, has not been scientifically observed as thoroughly as he should. Valuable scientific facts may be obtained by the clinician in the outpatient department and wards of a hospital, or, for that matter, wherever he meets disease. The reason that more of these observations have not been made in hospitals is due primarily, I believe, to the lack of adequate training of men in scientific methods, but perhaps more largely to the general belief that scientific work in medicine must be done in a laboratory. It will be granted, I think, that in science the closer one can observe a problem the better. Should not the wards of a hospital be the real laboratories of medicine? To-day there is in the wards of hospitals a wealth of facts that is not recorded even when recognized. When the opportunities that are really within our grasp are utilized, then there will be still greater progress in medicine.

The three great professions, theology, law, and medicine, have ever been the custodians of the spiritual, the material, and the physical welfare of man. Medicine has been until recently in the background. The principle of theology has always been and always will be a matter of faith. The law has been a series of rules of action based on precedent and intended to secure equity and justice between human beings. Medicine, however, from being an art that ministered to the physical distress of man, has come into a broader field of activity. Intelligent men and women now recognize that faith is dependent in large measure on the physical condition of the individual. Our criminal classes, it is now known, are frequently physical degenerates. Moral obliquities are often caused by physical conditions. The material welfare of man is no longer in the hands of the law alone; for great epidemics, which destroy scores of people and invalid thousands, and which often paralyze the commerce of a part of the world, may to-day be controlled by a knowledge of contagious diseases.

The leech which served in the Crusades was a camp follower, a servant retainer. To-day the medical man who is responsible for the health of troops in the field has as high a responsibility in gaining success as the commander-in-chief of the army. The balance of power between the nations of the earth is maintained, in part at least, by the fitness of troops for service. This statement I make as applicable to every civilized nation. Its truth has been demonstrated in every modern war; never more strikingly than in the Spanish-American War.

A singular and unprecedented apathy, to be charitable, prevented the chairman of the Committee on Rules of the House of Representatives of the United States Congress from permitting the United States Army Reorganization Bill to come before that body. And this notwithstanding the fact that the bill was favored by the President of the United States, the Secretary of War, and the United States Senate, while a careful canvass demonstrated the fact that the bill was favored by a majority in the House of Representatives. But within a few weeks the chairman of the House has seen the truth and has allowed the bill to be passed and it has now received the signature of the President. We are at last in a position to meet, in part at least, the exigencies of a modern war.

No man, woman, or child in the civilized world can be so situated, in labor, in travel, in attending schools or churches, in fact in existing, without being a debtor to the knowledge that has come from scientific medicine. This new phase of development in our profession adds greatly to its responsibilities. We are no longer a group of men and women who only soothe the brows of the afflicted and alleviate human suffering. Intelligent physicians or surgeons to-day know the natural history of some of the diseases with which they come in contact. Science has placed in their hands knowledge with which to control these diseases. They are public servants and their duty demands that they protect the individual against the ravages of disease as well as alleviate or cure. We, as the medical profession, are now in possession of truths that can help our fellow man. Is it not our duty to tell our fellow man? For we are told that "the gospel must first be published to all nations" (Mark 13:10).

Education has been, and I sincerely trust always will be, the cornerstone of our civilization in this country. No permanent advance will ever be made unless the people are educated to the truth. Laws are never effective unless the people want them to be enforced. I cannot recall any great or permanent advance that has been made by force alone; and even when force has apparently succeeded, it usually leaves an unjust and more or less complex, unstable condition. Our Civil War blotted out a great evil, but it left a race problem that has not been satisfactorily settled. The "flare-back" of force usually defeats itself. I have an abiding faith in the public. I believe in it. When made to think, it reaches a wise solution of a problem. Observe—the key to safe public opinion is to make the public think. Unthinking people are less to be depended on than animals. If it is true, that the medical profession now has accepted facts that bear on the welfare of the people, is it not our duty to make them known? Judicious publicity is, I believe, a new duty of the medical profession to the laity. How can this be accomplished? There has already been established

a Board of Public Instruction in this association. This board, as well as all committees, should be answerable to the Board of Trustees; it should be representative and eminently judicial in character, and should have as advisors the experts in the profession.

In what medical subjects should the public be educated? It will be better to teach thoroughly a few important subjects than to attempt to cover too large a field. Let us not be blind to the fact that our scope of usefulness as physicians in dealing with the large disease problems depends in great measure on the cooperation of the public. We must have intelligent cooperation to make our work as effective as may be. Tuberculosis is still the most pertinent subject on which information should be given. The public should be informed that at present an early, thorough operation is the most certain way of curing cancer. The work already accomplished by the public in cooperation with physicians in controlling tuberculosis, ophthalmia neonatorum, and scarlet fever comes to everyone's mind. The work that has been done in controlling yellow fever in Louisiana by the public and the medical profession is a striking example of educating the people as to the facts concerning disease. The various infectious diseases are obviously ones concerning which the public should be informed. The people should be educated as to the necessity of pure air, pure water, and pure food; they should know the hygienic value of bathing. They should know that hospitals are provided not alone for the care of the sick poor but that knowledge of disease may be advanced. Take a familiar example in our social life: When it is recognized and brought home to the public that contagious diseases in children are to a degree unnecessary, that by proper sanitation and medical school inspection they may be in large measure prevented, then people will demand that their little ones in public schools shall be protected against disease, which often leaves them invalided and crippled for life. A child among the better classes to-day, until it begins to go to school, is usually free from contagious diseases, but the moment it enters a school it is subjected to dangers from infection which it rarely escapes. To be consistent in our present method of life we might as well expose our children deliberately, as they did in country districts in former times, when a child was sent to a neighbor's to get the measles, as it was a convenient time for him to be sick. The physical and intellectual development of our children is in the public mind, but the possibility of preventing them, by adequate precautions, from having infectious diseases is not appreciated. The sanitation of churches, places of amusement, vehicles of transportation, so intimately concern the public that the essentials of their proper care should be widely known. When the public is so informed, it will demand a reasonable degree of security from infection. But, it may be said, all the truth is not known regarding these subjects; true, and, therefore, we must be very sure that we tell only the truth.

Commercial houses within a few years have found that it pays to care for their employees. It is true that in some instances a spirit of altruism has led to this action, but practical experience has shown that a higher and a better type of work comes from employees who are intelligently cared for. In one commercial house in Boston a physician gives his professional services to the employees as he might to a hospital clinic. If any salesman falls below in his sales he is directed to appear before this physician. A careful examination usually reveals some adequate physical cause that accounts for the individual's lack of energy. Anemia, indigestion, constipation, incipient tuberculosis are recognized and treated, and the salesman is frequently restored to his full earning capacity. Intelligent merchants recognize that the better care that they take of their employees the better service will be rendered in return. Loyalty is a force the value of which cannot be overestimated, and it is secured and preserved by employers who are really interested in their employees.

The czar-like dictation of labor unions which arbitrarily limits the amount of work that a man or woman is permitted to do is a force that seems necessary to meet the greed of capital, which in the past often cast aside its employees like wornout garments when they were no longer useful. I hope that labor unions in the future will demand not that the number of hours and the productiveness of the individual shall be limited, but that capital and labor shall protect the individual against disease, in order that he may have the highest degree of productiveness. Throughout the world there are cooperative business establishments in which the interests of the employees are protected in a measure, but this protection is usually financial. If the employer and employee could recognize that the preservation of the working capacity of the employee is of even greater importance than a 10 per cent. dividend on a few hundred dollars saved, a great mutual gain would be secured. Business men should see to it that their employees are informed as to the proper methods of life; protection against disease by employers is not alone a duty on their part, but a real financial investment, as recognized in the work of the Welfare Department of the National Civic Federation. The medical profession must recognize that cooperation with business men in these public duties is a new duty of citizenship.

Who among the public should first be educated? Those who are leaders in the community; those who are in positions of responsibility—national, state, city, and town authorities, trustees of hospitals and schools—they should first be informed as to the facts concerning disease. Experience has shown that the lay public takes a keen interest in everything concerning medicine and its progress. The success of nostrum vendors has demonstrated their skill in appealing to the sentiment of the public. The Board of Public Instruction should always appeal to the reason of the people. Great discretion should be used in selecting the subjects in which the public should be educated. Experience would teach such a board what not to do. "Don't" should be the motto for this board when in doubt as to educating the public.

What are the means by which we may reach the public? Newspaper articles on selected subjects, giving facts concerning a given disease, but not the treatment of disease, should be furnished the press. These articles should be signed and published under the authority of the Board of Public Instruction. That these articles should be judiciously edited must be apparent to all. No statement issued by the Board of Public Instruction should fail to be the absolute truth. Irreparable damage to the medical profession and to the public might be done by unwisely exploiting mooted subjects. It would be unfortunate if this new duty of educating the public in medical matters were taken up indiscriminately by the members of the medical profession. It may well be appreciated that this new duty may be con-

sidered a legitimate means of advertising the individual. But self-seeking for the medical profession, or for any individual member of it, would be quickly recognized by the public. Discredit, then, would be brought on the profession and on the individual.

Another means of reaching the public might be by magazine articles. The facts concerning certain diseases might well be given to skilled lay-writers, who should be paid for their services. A lay-writer has the art of presenting a subject to the public in an attractive manner. For example, let the subject of animal experimentation be investigated by one of the magazine writers of this country. Open wide the sources of information to such a writer. Then let a series of articles be published in order that the public may know the truth as to the inestimable benefits that have come from animal experimentation, not to men alone but to animals as well. Reprints of such articles, pamphlets and circulars of information would be a powerful means of educating the public. Let circulars of information regarding the subject of animal experimentation and of vaccination be placed in the hands of every legislator in this country; in fact, in the hands of every citizen who is misinformed as to the truth. In the event of a great epidemic of yellow fever or cholera, let a pamphlet containing the facts concerning the spread of the disease be sent to every householder in the district. Every physician would be then obliged to know the facts. This leads me to call your attention to one of the obvious effects on the medical profession of educating the public. It is to be regretted, but it is true, that there are ignorant practitioners in our profession. If the public is informed as to the facts concerning an individual disease, a physician will be forced to inform himself as to the recent advances in that disease.

To my mind, one of the most important movements in the association is the establishment of county graduate schools in the various States. I can conceive of no better stimulus to this work than the adoption by the county schools of a plan by which one of its members shall inform the public, once a year, as to the facts concerning some selected disease.

The work of the Council on Medical Education is progressing. Dilapidated medical schools are disappearing. Why? Publicity. When the public recognizes that in order to become a well-educated physician certain requirements are absolutely essential, then, and not till then, shall we have true reform in medical education. I commend to your consideration the work of the Council on Medical Education. It is dealing with the tap root of the tree of the medical profession. Its reforms must not be too radical. There are still isolated areas in this great country that cannot support the best educated physician. But the American Medical Association at least can stand firmly for safe, sane, and sound practitioners. To my mind, one of the most important functions of the Council is that it has established a monitorship over medical schools. Let the Council give to the profession, and to the public if necessary, the facts concerning the various medical schools of this country; publicity will do the rest.

Free lectures to the public on selected medical subjects constitute one of the most useful methods of spreading information. These lectures should be given by men who are authorities in their subjects; and the experiment as it has been tried in various parts of the country, particularly in Chicago and at Harvard, has been a success. At Harvard during this last winter the lectures have been so popular that at times a hundred or more people have been turned away, being unable to gain admission. A wide range of subjects has been covered in these lectures. Many factors influenced the attendance: First, the subject selected; second, the individual who gave the lecture; and third, the condition of the weather. Sunday afternoon lectures were better attended than Saturday evening lectures. Inclement weather markedly diminished the attendance. The most conspicuous factor that influenced the attendance at the lectures was the cooperation of the press. For example, when a lecture was given on a subject of great public interest, then if the press devoted from a half column to three columns to noticing it, the stimulus to the attendance at succeeding lectures was marked. Personally I have had nothing to do with these lectures, but I believe that they can be made effective almost in proportion to the cooperation of the press.

The medical profession, and many of the public, are afraid of the press. Whether this position on the part of the public is justified or not need not be discussed. I have never had occasion to appeal to the press for assistance and cooperation in any public measure without receiving hearty, but at times, to my mind, indiscreet assistance. The position of the press, as I understand it, is that it is the judge as to what constitutes news. Newspapers will publish what they think the public wants to know, but not what we think the public ought to know. They assume, quite properly, the right of decision. The greatest power that we can have to diffuse information is the public press. Let us be frank with it, and I believe that it almost invariably will be honest with us. *Collier's Weekly* and the *Ladies' Home Journal* have been wonderful forces in diffusing the truth.

There yet remains, ladies and gentlemen, a means of educating the public which I believe will be the most potent of all. This rests in the hands of the family physician—the man who has the care of the household, who watches the growth of the children, who sees the father and mother bend under the strain of life, react and again assume their work, the counsellor of the family—he it is who can carry into the homes of this country the judicious truth concerning disease. Well-educated people have recognized that the wave of specialism which threatened to obliterate the family practitioner was dangerous for the welfare of the whole. The trouble is that we all consider ourselves, when ill, as peculiar examples of some disease, when, as a matter of fact, all we need is the counsel and advice of a sound-minded family practitioner who has known us and our families for many years. This does not in the least deny the great advantage of having the benefit of special knowledge in reference to a special subject.

There is a distinct reaction, I believe, against the obliteration of the family practitioner. The well-educated family practitioner now has a new duty. He it is who should be the instructor of the family. This is particularly true in relation to the subjects which in medicine cannot with propriety be taught the public in masses; these subjects may be taught most appropriately to the parents and, if need be, to the children by the physical counselor of the family.

A great duty rests on the practitioner of medicine to-day. He must not shirk it; he must rise to his new burden, accept it and bear it. The reward to the medical profession for taking this new burden of judicious publicity in medicine will be a broader

life for the practitioner, a greater consideration for his fellow man, better citizenship and the recognition by the world that the medical profession is a great public benefactor.

22 Newbury Street.

THE CANCER PROBLEM.*

By GEORGE W. CRILE, M.D.,

CLEVELAND, O.

A just presentation of the status of surgery in any subject is as difficult as the honor of presenting it here is high, for the forward movement in research and investigation in the whole field of medicine is world-wide and aggressive, and singularly effective. Events follow each other so swiftly that the profession itself requires an almost daily readjustment. Is there within the past generation in any other department of human endeavor a record of so many basic discoveries as in medicine? Who can read the triumphs of preventive medicine, of biochemistry, of physiology, of pathology, without pride?

Surgery has all but conquered the infections and benign tumors of the pelvic organs, of the kidney, of the appendix, and of the gall-bladder: it has mastered the complications of gastric ulcer, it has cured hernia, removed goiters, and corrected deformities. All these are, or may be, serious operations, and yet in the hands of the present-day masters the average immediate mortality is not more than 1 per cent. What were, or what would have been, the results of such operations a generation ago? Many of these operations were then unknown, while those known were performed with possibly twenty times the present mortality.

Surgery points with pride to its success in combating infections, benign tumors, obstructions, and deformities, but what can be said as to the progress in the treatment of certain malignant tumors, of cancer—a word used here to include all malignant new growths? It has been stated, and I believe truly, that the greatest outstanding obligation of medical science to mankind is the discovery of the cause of cancer, or at least of a cure for it. There is at present a universal movement in this direction. Governments and individuals have provided funds for laboratories and hospitals. Many of the greatest minds of to-day are engaged in an effort to solve this cancer mystery. The biologist, the chemist, the pathologist, the clinician, and the statistician are enlisted. All honor to the men who have the courage to risk a life's work in what may prove to be vain endeavor; but what a victory for him who first reaches the goal—the delivery of mankind from its most dreaded disease!

Although the cause of cancer still remains unknown, many of its phenomena have been carefully studied. Cancer occurs in every climate and among all mankind, savage and civilized; in wild and in domestic animals, the carniverous and the herbivous; in birds, fishes, and reptiles; and even in the lowly oyster. Throughout Nature the histologic picture of cancer of any definite type is the same.

The frequent assertion that cancer is on the increase, as shown by certain mortality tables, may be partly accounted for by the greater number of correct diagnoses, by the general increase in longevity, and by the decrease in infant mortality. Through the natural evolution of medicine one should expect a further fall in the death rate from infectious diseases, and hence a relative rise in the number of cancer and senile deaths. On the contrary, an increasing number of cases of cancer are cured surgically each year. This balancing of conditions will tend further to alter the percentage of cancer incidence. Bashford and Murray have shown that absolute statistics of cancer prevalence is not at this time available. If the rate of cancer prevalence estimated for the British Isles be adopted as accurate for this country, it may be estimated that there are in the United States at this moment approximately 80,000 cases of cancer, and possibly a million cases among the entire population of the world. According to statistics, one woman in eight who reaches her thirty-fifth year dies of cancer. The post-mortem statistics of hospitals show that cancer is found in one in twelve autopsies.

Cancer not only destroys countless lives, but it destroys them by a method of merciless torture. To die from an accident or from an acute infection is a matter of days or weeks; to die from cancer is a matter of months or years, and this is a period not alone of suffering, but of suffering without hope—a horrible species of cellular cannibalism.

The biological characteristic of the cancer cell is its power of limitless division. A single strain, for instance, the Jensen mouse tumor, has been transplanted thousands of times during a period much longer than the natural life of a mouse. In that period a large quantity of tumor tissue is grown, apparently capable of endless cellular division, and showing no evidence of decreasing activity. It seems probable that cancer cells may multiply indefinitely and may, possibly, like the ameba, prove to be immortal.

But few spontaneous cancers have been successfully transplanted from one individual to another of the same species, and no cancer has as yet been transplanted from one species to an individual of another species. Few, if any, cases of cancer transplantation have occurred between human beings. A surgeon's immunity from cancer infection during operations is apparently complete. Gaylord and Clowes have shown that in the transplanted cancer of the mouse an immunity may be established in the recipient. This immunity is produced by the growth of the transplanted tumor, and is made obvious by its complete regression and the impossibility of again successfully planting such a tumor in the same animal. Natural immunity to cancer has been found in some animals. Ewing and Beebe have observed similar immunity in a strain of transplantable sarcoma of dogs.

Although the primary cause of cancer is not known, many of the predisposing causes and precancer states are known and can be recognized. In sarcoma of bone there is a history of trauma, usually severe, in not less than one in three cases. The growth of carcinoma rarely follows a single traumatism, but in the visible fields it is frequently preceded by chronic irritations, by scars and ulcers, by hyperplasias, by chronic inflammation, and by preexisting benign growths. Examples are smoker's cancer of the lip, mouth, and tongue; cancer resulting from friction of clothing; from the picking of warts and moles; from the irritation of nails in the mouths of lathers; from the irritation of a broken tooth or tooth plate; from the soot irritation of the chimney sweep; from fissures and cuts of the lip; from senile warts or scales of the face; and from irritation of foreign bodies, such as calculi in the gall-bladder, the kidney, and the urinary bladder.

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There is, in fact, scarcely an instance of a complete account of a case of visible cancer that does not give a clear precancer history—a history of chronic irritation, ulcer, scar, hyperplasia, innocent tumor, or a combination of these factors.

Cancer notably follows fixed laws. Is the inception and growth of cancer of the face, lip, or tongue different from the inception and growth of cancer of the stomach? Were the stomach as exposed to view as is the lip and tongue, is it not probable that just as well defined precancer stages would be observed? Or, were the lip and tongue hidden, as is the stomach, what should we know of the inception phenomena of cancer of the lip or tongue?

Among the benign growths predisposing to cancer, let us note fibromata, papillomata, adenomata, and cysts; such as papillomata of the larynx and bladder, adenomata of the uterus, breast, and intestine; cysts of the ovary and breast; and the hypertrophy of the thyroid.

Among the benign tumors of the uterus, one in thirty becomes sarcomatous; and in one in fifty cases the uterus becomes carcinomatous. Most innocent tumors of the parotid gland ultimately become sarcomata. Many irritated moles freely metatasize as deadly melanomata. Warren, Cathcart, and others have pointed out the frequency of the transformation of benign and malignant tumors. Indeed, as Bland-Sutton has well said: "The more carefully the histology of tumors is investigated, the more obvious does it become that the borderland between innocent and malignant species becomes less easily definable."

We may conclude, then, that chronic irritations, ulcers, and benign tumors are potential cancers, and should be considered in that light. The precancer stage is the prophylactic stage.

While the treatment of precancer states and benign tumors is effective, easy, and safe, the treatment of developed cancer is to-day perhaps the most difficult problem of surgery. Has there been progress? Has the limit of operative measures been reached? Inasmuch as excision is still the only reliable means of cure, what has excision accomplished?

Twenty-one years ago Butlin collected statistics of 364 operations for cancer of the larynx, esophagus, kidney, thyroid, and pylorus. Two-thirds of the patients died of the operation, and of the 126 survivors only one was known to be alive and free from the disease three years later. Butlin characterizes this result as ghastly. Halsted quotes the elder Gross—and Gross was the first surgeon of his day—as stating that he had never cured a case of cancer of the breast. Halsted, however, developed this field by applying a perfected technique to a correct pathological conception, and his work serves as a general model for cancer operations.

In the Johns Hopkins clinic 47 per cent. of all cases of breast cancer operated on have remained well for three years or more. Considering only the cases that seemed at the time of operation to be clinically favorable, seventy-five out of every hundred were cured. A group of cases still more impressive is that consisting of those in which a clinical diagnosis of cancer could not be made prior to operation. Of these, 96 per cent. remained well for three years or more. The operative mortality in the representative clinics to-day is less than 1 per cent.

In cancer of the head and neck there has been a similar evolution, resulting in an improvement so extraordinary that to-day the mortality rate of the major operations in this field is no greater than that of tracheotomy or herniotomy a generation ago.

Little or no improvement is seen in the results in cancer of the esophagus or of the thyroid. Neither has there been any progress noted in the purely surgical treatment of round-cell sarcomata, especially of the bones and lymphatic glands.

The surgical possibilities in some of the well-developed cancer fields may be best displayed by arbitrarily dividing the cases into three clinical groups; those favorable to operation, those unfavorable, and those suitable for palliative operation.

In the favorable group are included all cases that prior to operation gave no evidence of the involvement of any other tissue than that originally attacked; for example, in cancer of the breast, those cases in which no glands are palpable and the growth has not sensibly involved the skin, the muscles, or other structures.

In the unfavorable group are included the cases presenting demonstrable extension beyond the tissue of primary lesion. Among these there are relatively few cures.

In the group of cases suitable for palliative operations are included those on which operations, such as gastroenterostomy, colostomy, and visceral anastomosis for extensive visceral cancer are performed without hope of cure, but to relieve symptoms.

When operated on according to the highest standards of the present day, the favorable group of cancer cases of the skin, lip, tongue, breast, larynx, and certain viscera show a three-year cure in approximately eighty out of every hundred cases. When the disease, even in the favorable group, is so situated, for example, in the tonsil or esophagus, that the surgeon is hampered in the application of the principles governing operations for malignant disease, the probability of cure is greatly reduced.

From the aggregate results of operative treatment, then, it may be concluded that great progress has been made. Why? Because certain fundamental principles have governed the technique. These principles are block excision of the entire cancer field, including the area of lymphatic distribution and drainage, and extreme care in handling the cancer tissue to prevent the spread of cancer cells beyond the operative field. The knife must never touch cancer tissue. Rough surgery constantly defeats itself. Pathological thoroughness and gentleness, added to a perfected surgical technique, have been rewarded by so many cures that first the profession and then the public gained confidence in the surgical treatment of cancer. Hence, patients applied earlier and better results followed, thereby increasing public confidence—a species of beneficent circle constantly leading to still earlier, hence more effective, operations. It is axiomatic to state that the earlier the operation the more certain is the cure. The chance of failure, as Andrews has emphasized, rises in geometric ratio with the lapse of time from the onset of the disease.

Has the limit of operative measures been reached? An answer to this question demands that the obstacles in the way of better results first be known. Many, perhaps the majority, of cancer patients are seen too late. Why? When the growth is in a visible field the patient may not suspect the changes in a wart, a mole, an ulcer, or a scar; or suspecting, even knowing the truth, he may not believe in the efficacy of an early operation. Education is here needed. The family physician may delay because he wishes to be sure of the diagnosis; he may wish to try local treatment, or a course of

specific treatment, whereby, he argues, he is giving the patient a chance; but, as Butlin has remarked, the physician has thus too often robbed the patient of his only chance and has allowed the cancer to gain a mortal grip. Again, some physicians question the diagnosis until there appears glandular enlargement, general emaciation, and cachexia. I have often thought that, pending a more general enlightenment, it would be a great boon to mankind if the words "glandular enlargement and cachexia" as denoting symptoms of cancer were stricken from every textbook of medicine. These are terminal symptoms, and indicate that the surgical opportunity is forever lost. Were the result not so tragic, such professional simple-mindedness would be ludicrous. Finally, some physicians make a diagnosis, but yield to their natural inertia and drift with the disease. Such men need an awakened conscience. While the early and hence curable stage is easily recognized in the external field, what possibility is there by our present inadequate means of diagnosis of recognizing internal cancer in its curable stage? It is in these cases of internal cancer that advanced disease only is recognized, and in these that surgery appears at its worst. All clinicians acknowledge the inadequacy of present methods of diagnosis of concealed cancer. Ewald has well said: "Exploratory incision in suspected cases is all well enough, but one cannot expect the whole community of possible suspects to submit to being opened for inspection in order that the occasional case may receive early operation."

By analogy and from actual experience we believe that operations for incipient cancer of the stomach and intestines yield as good results as operations at a like stage for external cancer. Is there in internal cancers a warning precancer stage? Boas, Ewald, Hauser, Rosenheim, Lebert, and many others recognize the fact that simple ulcer may become transformed into cancer, and they estimate the frequency of such transformation as 5 per cent. or more. Of cancers of the stomach, Mayo, Moynihan, Rodman, and others find in over 50 per cent. a history of previous ulcer. Ewald has recently declared that such cancerous transformation is far more frequent than has hitherto been assumed.

The study of the living pathology at the operating table is daily convincing surgeons that gastric cancer, like cancer of the skin, tongue, the mouth, and the lip, has frequently a precancer stage, and that stage is usually ulcer. Ulcer, then, may have a sinister meaning. As Park has emphasized, cancer itself has no symptomatology. Kelling has interestingly opened the problem for a biological test for cancer. Basing my inferences on the work by Beebe, Clowes, and others, on the chemistry of cancer, and on the general work on hemolysis by many men in recent years, I was able to interpret the hemolysis in one of my early cases of direct transfusion of blood in a hopeless cancer case. Wile and Beebe have found hemolysins in transplantable sarcoma of dogs. My clinical case suggested the investigation of the hemolytic property of cancer blood as a possible aid to the diagnosis of cancer.

I am indebted to Dr. Beebe and Dr. Macleod for many suggestions. An assistant trained in this work has tested for me all available cancer material during the past eight months. The technique is exacting, requiring close attention, and unless precisely executed will not justify practical interpretation.

The reaction is the following: The blood serum of a cancer patient may hemolyze normal corpuscles, but normal blood serum usually does not hemolyze the red corpuscles of a cancer patient. In some patients—thus far only those with inoperable cancer—there was reverse hemolysis. The cancer corpuscles were hemolyzed by normal serum. In some cases there was no reaction. If this reaction is to be of diagnostic value, then it must occur in cancer cases only or in diseases not readily confused with cancer.

In one hundred and twenty-five normal individuals tested there was hemolysis in no instance. Among 80 patients with cancer, 82 per cent. showed hemolysis, while those with benign tumors showed no reaction. In the cases of tuberculosis those showing hemolysis showed a much greater autolysis than hemolysis, thus giving a characteristic reaction. In chronic suppurations and acute infections no hemolysis occurred.

Hemolytic tests of the extracts of cancers and benign tumors were also made. We were able to corroborate Beebe's observations that the extract from cancer tissue caused active hemolysis, while the extract from benign tumors showed no hemolysis. This suggests the origin of hemolysins in the blood of cancer cases. No hemolysis, then, has been observed in normal individuals, none in the victims of benign tumors, and none in those of pyogenic infections. Hemolysis occurred in 82 per cent. of cancer cases and in a considerable percentage of tuberculous cases, which, however, can be differentiated by the autolytic reaction.

Of the 20 per cent. of cancer cases that did not show hemolysis, all but one were either inoperable or very advanced. There was but one negative reaction in the early cases. In cases of suspected cancer giving negative tests the chances have been twenty to one that the cases were either in a late stage or nonmalignant. Cured cases showed no hemolysis.

In a myxoma of the breast of long duration, which had recently enlarged, the clinical diagnosis was "cancer transformation." Hemolysis was negative. The case proved benign.

A bone tumor gradually enlarging during six months was clinically diagnosed as sarcoma; hemolysis was negative; osteomyelitis was demonstrated. A similar result was observed in a case of tumor of the clavicle. A solitary tumor in a large breast of a woman of 46 was clinically diagnosed carcinoma; hemolysis was negative. The tumor proved to be a small cyst surrounded by hyperplasia.

A case of secondary anemia with a history of indigestion without symptoms of cancer showed hemolytis; two months later a tumor of the epigastrium became palpable and a fragment in the vomitus showed carcinoma.

A case of luetic stricture of the sigmoid under treatment for ten years showed hemolysis. The patient was operated on and an early stage of "cancer transformation" was found.

In a uterine fibroid without suspicion of malignancy a routine hemolysis test was made. Hemolysis occurred and at operation sarcomatous transformation in the center of the tumor was disclosed.

Although in its present state of development the hemolytic test for malignancy is not specific, the reaction may be a valuable aid in diagnosis, and has more than once been the only positive evidence. The entire subject is a promising field for investigation. The limit of resources in making an early diagnosis, hence, an early operation, even in internal cancer, has, therefore, by no means been reached. It has frequently been stated that the limit of operative possibilities has been attained. Have the minimum of operative mortality and the maximum of

safe incision been reached? The principal operative risk may be expressed as the sum total of shock, hemorrhage, and infection. Even if it is assumed that operators cannot be more gentle, more precise, and more dextrous, thereby still further minimizing shock and hemorrhage, newer methods of avoiding and of treating these complications are at hand.

In cases in which the blood of a cancer patient has not been so altered as to render the mixing of normal blood with it unsafe, hemorrhage and shock may be successfully controlled by the direct transfusion of blood. Cancer patients rendered poor surgical risks by hemorrhage may, by the means of direct transfusion of blood, become good risks and safely undergo operation. In like manner, a dangerous degree of shock following operation may be relieved almost with certainty by transfusion. The direct transfusion of blood, when properly employed, has proved almost a specific treatment for both shock and hemorrhage. Neither shock nor hemorrhage can cause death except by anemia. There cannot be a fatal anemia if a sufficient amount of blood is in the circulation. The only exceptions to this statement are cases of certain organic lesions. Cancer patients reduced by hemorrhage, or otherwise, may be operated on with safety by uniting the vascular systems of the donor and the patient just prior to the administration of anesthesia. Enough blood is transferred from the donor to the patient to give sufficient stability to the latter's circulation and to warrant etherization. An assistant is detailed to take charge of the transfusion, regulating the flow at the discretion of the surgeon. If the patient's blood pressure falls during the operation, or if his pulse quickens, sufficient blood is transferred to regain a stable circulation. At the completion of the operation the patient's circulation is usually greatly improved over its condition at the beginning.

In every case of cancer it is necessary to make preliminary hemolytic tests. If the patient's serum hemolyzes the proposed donor's corpuscles but little harm will be done. The serum of the donor's blood will in itself answer the purpose of filling the patient's relaxed vessels. Should there be a reverse hemolysis, that is, should the donor's serum hemolyze the patient's corpuscles, then a transfusion is strictly contraindicated, but the cases of reverse hemolysis thus far observed have been inoperable.

The following is illustrative: A case of papilloma of the bladder which had degenerated into carcinoma had been reduced by long-continued and progressive hemorrhage to the following condition: Hemoglobin 25, red count 1,900,000, blood pressure 110, pulse rate 132. The patient was clearly unable to withstand a resection of a large portion of the bladder, together with excision of a large tumor, but an operation was performed as above outlined, with the patient's son as donor. About one-fourth of the bladder was excised and an extensive plastic operation on the ureter was made. At the end of the operation the patient's shrunken, anemic face was full and pink, and his circulation was markedly better than before the operation. He made a splendid recovery. Other cases have been equally successful.

In the prevention and control of infections, especially in operations on the head and neck, much more may be accomplished. The mediastinum may be protected by developing a preliminary granulation barrier, which is done by making a preliminary dissection into the deep planes of the neck and packing with iodoform gauze five days prior to the operation; blood inhalation may be prevented and anesthesia simplified by nasopharyngeal tubage and packing. Better protection of patients from chilling, the employment of skilled anesthetists, and other similar means are constantly decreasing the number of infections and pneumonias. In my last 72 major operations in this field there was but one fatality.

The *x*-ray and radium have a curative effect on certain superficial cancers. In doubtful cases the skin flaps after operation may be retracted and the *x*-rays applied directly. In this manner the deep field, and therefore the cancer cells, may become superficial, and hence amenable to the *x*-ray influence. A number of cases of sarcoma have been cured with Coley's toxins. According to Coley, the postoperative use of mixed toxins is an aid.

Truly, the attainment of the limits of surgical possibilities is still far removed; the operative sphere may be still further extended, and surgical risks may be further diminished. Although surgery has accomplished much and holds out bright hope of accomplishing more, is there not evidence that other methods also may cure cancer? The work of Gaylord and Clowes, Beebe and Ewing, Ehrlich, Loeb, and others, demonstrating a not infrequent immunity against cancer, was utilized by Beebe and myself in an attempt to cure transplantable sarcoma in dogs by maximum bleeding of the "tumor dog" and heavy overtransfusion from an immune dog. By this method we have cured of sarcoma nine out of eleven dogs, some of which were cachectic and had metastases. The cured animals in turn became immune and were successfully employed for curing and immunizing other dogs. These animals since have been repeatedly inoculated with sarcoma, but have remained not only well but immune for more than a year.

Arguing from this work and from the fact that among the lower animals certain ones are naturally immune, we have transfused normal blood into six human subjects having sarcoma, their tumors having been removed previous to transfusion. Sixteen months have now elapsed since the first case was so treated. Although the cases were of the round-cell and spindle-cell types, presenting an exceedingly bad prognosis if excision alone were done, and although they are at this time apparently free from the disease and show no hemolysis, they will be available, as arguments on which to form a final judgment, only after three or more years. Should these patients be cured and become immune, it is likely that they may be available for curing others, so that eventually a group of immunes may be established. The whole matter of immunizing against sarcoma is at this time wholly experimental, and my statements are presented with that understanding.

SUMMARY AND CONCLUSION.

Cancer is widely distributed in Nature; is slightly, if at all, communicable; is not yet proved to be increasing or hereditary; and is rarely transplantable. Its biological characteristic is the power of endless division of its cells. The natural prognosis is death. Frequently there are well-defined predisposing causes and precancer states. The precancer stage is the preventable or curable stage. It is vastly better to prevent a cancer than to cure it. No specific therapeutic measure exists; the knife is still the most reliable means of treatment. In its beginning cancer is always local and is curable by complete excision. The chances of cure diminish in inverse geometric ratio to the lapse of time since its inception. There is evidence that a reliable blood test for cancer may be established; and there is a

possibility of utilizing for cure the immunity principle through transfusion of blood.

If there is in many cases a recognizable and curable precancer stage, if the disease in its incipiency is local and curable by excision, if the magnitude of the necessary operation increases in a direct geometric ratio and the chance for cure diminishes in a reverse geometric ratio with the lapse of time since inception, what is the duty of the profession, especially in its organized function and in its altruistic aim, toward the hundreds of thousands of fellow creatures who now, without suspicion of the dreadful truth, are in the precancer or early curable stage of cancer? What is the duty of the profession toward hundreds of thousands who will be stricken next year and each year to follow? This duty is to undertake a campaign of cancer education. The public is entitled to receive from the profession all the enlightenment required for self-preservation. It may be difficult to persuade a man to change his political tenet or his religious creed. Sentiment here may bind him closely. There is no tie of sentiment between a man and his cancer. Enlightenment ought to be easy and effective.

Finally, a careful consideration of the progress made in cancer research and in treatment should banish despair, give new hope, and urge all to put forth still greater endeavor to conquer in the end.

COMMENTS UPON AN UNUSUAL CASE REQUIRING CESAREAN SECTION.*

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Cesarean section is an operation frequently resorted to to-day. Considering our present aseptic methods and modern technique, our textbooks tell us that our case records should show no mortality as a result of the operation. This, unfortunately, is not true, although, except for instances in which the operation is performed to obtain a living child from a dying mother, it should be. There are six prerequisites absolutely essential to the ultimate success of cesarean section; and by success, I mean a living mother and child. Firstly, and most important, a surgeon who possesses at least as much common sense and good judgment as manual dexterity and operative skill; secondly, a sufficient number of well-trained assistants who understand what is required of them, and do it accurately and unhesitatingly; thirdly, an expert anesthetist; fourthly, a perfectly aseptic technique; fifthly, the best possibly attainable condition of the mother; and sixthly, a viable child, *in utero*, in the ninth month of its development, before the onset of labor. "The time, the place, and the girl," are indeed important factors. The following case presents some features of unusual interest.

L. St. C., age eighteen, single, a member of a troupe of "midgets," was admitted by me, as House Surgeon, to the Gynecological service of Dr. J. J. Mooney, in the Jersey City Hospital, March 15.

Family History.—Negative. Father and mother were large-boned, well-nourished, and well-developed individuals. Patient does not know whether they are living or not. She has two sisters and a brother, all living, also of normal size and development. No tuberculosis, syphilis, malignancy, rheumatism, or deformities in the family.

*Read before the Tri-Professional Medical Society, New York City, March 17, 1908.

The woman had rickets when six months old. Otherwise her general health has always been excellent. Menstruation occurred at the age of thirteen, and has always been regular as to time of occurrence, duration, and amount; she never had any dysmenorrhea. Last menstruation on the 26th of the preceding May. Breast changes, morning nausea, etc., appeared during the first three months following. Patient now presents all the symptoms of pregnancy. Date of labor calculated to be April 2.

Physical Examination.—The patient is well nourished, and apparently in excellent general health; somewhat excited by the examination. Height three feet eight inches. Has no perceptible enlargement of the thyroid gland, and no pressure symptoms. Abdomen measures three feet six inches in circumference. No cardiac murmurs. Lungs clear. The diaphyses of the long bones are underdeveloped, while the epiphyses seem almost normal in size. There is no kyphosis or other deformity of the spinal column. The fundus uteri extends almost to the ensiform cartilage. Fetal heart sounds are audible just below and to the left of the umbilicus. The vaginal orifice and cervix appear to be normal.

Fig. 1.—Before operation.

Pelvic Measurements.—Interspinous, 17cm. (7 inches); intercristal, 20.5 cm. (8½ inches); external anteroposterior, 14.5 cm. (5½ inches); right external oblique, 17 cm. (6¾ inches); left external oblique, 17 cm. (6½ inches); internal conjugate, 3 cm. (1¼ inches); internal anteroposterior, 4 cm. (1½ inches).

Operation.—March 31, by Drs. Mooney and Dannreuther. Anesthesia by Dr. M. E. Flaherty, of the House Staff. All aseptic and antiseptic precautions observed. Incision through the abdominal wall in the linea alba, extending from 1½ inches below the ensiform cartilage to the symphysis pubis. Second incision through the uterus, *in situ*, in the middle third of the median line. Time, 13 sec-

onds. No attempt was made to control the bleeding from the abdominal wound, which was inconsiderable. The child was quickly seized, the cord being clamped and cut, and was taken to another room by Dr. C. A. Plume, Assistant House Surgeon. Artificial respiration was unnecessary, as

Fig. 2.—Before operation.

the child cried lustily immediately after extraction. The child delivered, a nurse began pouring a continuous stream of normal saline solution, at a temperature of 120° F., directly upon the uterus. This promoted rhythmical contractions, facilitating the removal of the secundines, and controlling hemorrhage. Three layers of continuous catgut sutures were introduced into the uterine wound: two into the musculature, and one into the peritoneum. One operator completed the first suture while the other began the second, etc. This procedure is a valuable time saver. No attempt was made to sponge out the abdomen, the saline solution being purposely allowed to remain. The abdominal wound was closed by a continuous through-and-through chromic catgut suture, reinforced by silkworm-gut interrupted skin sutures. Time, from the first incision to the late suture, 13 minutes.

The anesthetic used was chloroform, followed by ether, which the patient took well. The pulse did not rise above 88, and was of good quality throughout.

Post-operative History.—The baby was well nourished and developed in all respects. Weight, seven and one-half pounds. Mother rallied well after operation. Recovery was uneventful, the abdominal wound healing by first intention. Sutures were removed on the tenth day. The cervical canal being well open, dilatation for drainage was unnecessary. Lochia normal. The mother secreted but a minimum quantity of milk, so the baby had to be fed artificially. Both were discharged from the hospital in excellent condition four weeks after the operation.

Unfortunately, we do not always see the woman requiring cesarean section early enough to operate under the most favorable circumstances. But I am fully convinced that most of the cases comprising the admittedly small mortality that some obstetricians' case records show, are due to errors in judgment on their part. In an instance where the indication for this operation is absolute, as it is with an internal conjugate diameter of 7 cm., or less, or where there is equivalent disproportion between the fetal head and pelvic space, and the patient is seen early enough to allow of satisfactory arrangements for operation being made, before the onset of labor, death of the mother as a result is inexcusable. The chances for the child should be as good as, or better than, in spontaneous births. It is not subjected to the slightest traumatism, such as version, forceps application, etc., nor any of the possible accidents, as in a delivery *per vias naturales*. In lesser degrees of obstruction, whether due to dystocia, tumors, or other pathological conditions, the indication for cesarean section is relative. That is, it may be selected in preference to symphyseotomy, pubiotomy, difficult version, difficult forceps applications, induced premature labor, and embryotomy. Whitridge Williams believes that it would be better to advance the absolute indication to 7.5 cm. in simple flat pelves, and to 9 cm. in generally contracted pelves. Personally, provided we have a living child, I should prefer cesarean section to any of the above procedures. In symphyseotomy and pubiotomy, there is special susceptibility to infection, and the remote results are uncertain and unsatisfactory. The other manipulations endanger the life of the child, with the exception of embryotomy, which means its death. In the case here reported, the indication for cesarean section was absolute, the mother in good condition, and the operation performed three days previous to the cal-

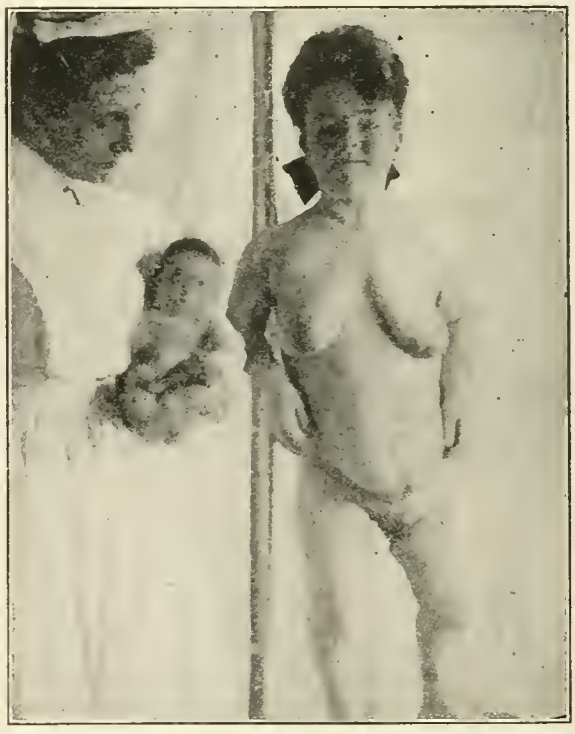

Fig. 3.—Twenty-one days after operation

culated date of labor. The practice of waiting for the inception of labor pains cannot be too strongly condemned. True, the uterus is awakened to active rhythmic contractions, the cervix is more patulous, and will perhaps permit the delivery of the placenta by the natural route. But the uterus re-

tracts equally as well in operation as in labor, especially if stimulated by a hot irrigation, and the drainage is sufficient, or can be made so. I can see no advantage in allowing the placenta to remain. Besides, after labor has begun, we are running the risk of the mother becoming exhausted. Operation a few days before labor permits better preparation, the patient is not in any danger of becoming exhausted, and it is certainly to our advantage to operate before rupture of the membranes, as there is less traumatism and extraction is easier. I should ascribe the majority of maternal deaths to imperfect pelvimetry, ignorance of the necessity for operation, infection carried by dirty fingers or instrumentation, attempts at other methods of delivery, and other varieties of obstetrical tinkering.

This patient must have presented a very rare and exaggerated type of rachitis in infancy. There are many things peculiar about the resulting deformities. What an enormous amount of reabsorption must have occurred in the diaphyses of the long bones. And why should the flat bones of the pelvis be subjected to such extreme distortion, while those of the cranium are not abnormal in any respect? We also would expect to find some deformity in the bony walls of the chest, especially those known as funnel-breast and pigeon-breast, or a kyphosis of the spinal column. In Fig. 2 it will be noticed that there is a slight apparent lumbar lordosis, but this was compensatory for the abdominal enlargement rather than for a kyphosis higher up, and was not evident after operation. Such an individual affords a layman amusement, but the true physician feels only pity and compassion for her misfortune. Incidentally, I might mention that this was the bravest and best patient that I have ever had.

I believe in performing cesarean section as rapidly as possible, without endangering life. But I do not believe in foolhardy operating for the sake of saving time or establishing a record. Have the instruments laid out in the order in which they are to be used, and have them handled by a competent nurse. Always make two incisions: one through the abdominal wall, and one through the uterus. Uterine incisions other than the median longitudinal, such as the Cohenstein, Kehrer, Fritsch, etc., in my estimation do not possess the supposed advantages claimed by their originators. In most cases it may be taken for granted that there is no loop of intestine between the uterus and parietal peritoneum. Nevertheless, I have seen one of the best gynecological surgeons in New York completely sever the intestine trying to save a few seconds by making but one incision. The slight hemorrhage from the abdominal wound requires no controlling. Pay particular attention to the peritoneum, by *leaving it alone*. For this reason, I believe it is better to allow the uterus to remain *in situ* than to deliver it outside the abdomen, which also predisposes to hernia and adhesions. The incision being so large, there is plenty of space to work entirely within the abdomen. Most operators adjust a loop of a constrictor around the cervix to control the uterine hemorrhage. This wastes time, and is unnecessary if a hot irrigation is used, as described above. Should the hemorrhage be profuse in spite of this measure, manual compression will easily control it. The constrictor also may cause fetal asphyxiation, and has a tendency to produce partial uterine paralysis. The irrigation serves two purposes, besides promoting retraction: It washes out most of the liquor amnii, and being absorbed by the peritoneum, acts as a stimulant. It should be poured in a continuous stream, directly upon the fundus, from the time the child is extracted until the uterus is closed by sutures. Have two clamps and a pair of scissors ready for the umbilical cord. The child and secundines should be delivered as rapidly as possible, and the baby taken in charge by a physician, prepared to administer artificial respiration. The method of closure of the uterine and abdominal wounds should be that which seems best in the judgment of the operator. Unless particularly indicated, buried sutures are unnecessary.

The post-operative treatment should be that following any other laparotomy.

The child in the case here reported being illegitimate, and the mother healthy and capable of bearing more children, there was no reason for doing the Porro operation. I see no reason why a second successful cesarean section should not be performed on this patient in a like manner. A concomitant hysterectomy or extirpation of the ovaries and tubes should not be done unless warranted by circumstances.

2030 Broadway.

A REPORT OF THREE CASES OPERATED UPON FOR LARGE ABDOMINAL TUMORS.*

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EX-A. A. SURGEON, U. S. A., EX-VICE PRESIDENT OF TRI STATE MEDICAL ASSOCIATION OF ALABAMA, GEORGIA, AND TENNESSEE.

Case I.—Nora, colored, was operated upon on November 16, 1906, for a large ovarian cyst. She is twenty-nine years old, and had all the diseases of childhood. She gave birth to a full-term child when she was fifteen years old. She had no illness of importance until five years ago, when she noticed a swelling in the lower part of the abdomen, on the left side, which increased in size very rapidly. On the morning of October 15, 1906, she rode eleven miles in a buggy, from her home to Rome, and I saw her for the first time in the afternoon of the same day. She was then able to be up and walk around, but with great difficulty. She had the typical facies ovariana and was extremely emaciated. Her face and body were covered with psoriasis; the skin at this time was covered with the scales characteristic of this disease, and the skin of the abdomen was especially thick with these scales. The peritoneal cavity was enormously distended, and presented a more or less spherical appearance. Consequently the ribs were spreading out to a marked degree, owing to the pressure from the tumor. The breathing was difficult and fast. She was unable to lie down in any comfort, on account of dyspnea. For several years she suffered greatly, especially at her menstruation. Her pulse varied from 120 to 130. The temperature, lungs, and heart were normal. The urine was free from sugar and albumin. There was no unusual difficulty in emptying the bladder or moving the bowels. There was a considerable amount of edema in the lower limbs and vulva.

The night before operation one-half ounce of Epsom salts was given. Several hours previous to operation the nurse scrubbed the abdomen with tincture of green soap and hot water. While the anesthetic was being given the abdomen was

*Read at a meeting of the Seventh Congressional District (Georgia) Medical Society, March 11, 1908.

scrubbed again in the same way, and afterwards disinfected with bichloride of mercury solution.

An incision six inches long was made between the symphysis pubis and the umbilicus. The cyst was evacuated, after which the adhesions to the abdominal wall and viscera were separated: some

Fig. 1.—Ovarian cyst. Case I

of these adhesions were dense and extensive. After freeing the sack, it was delivered through the incision in the abdominal wall. The pedicle was tied with fine silk, and severed external to the ligatures. The wound was closed with interrupted silkworm-gut sutures. Shortly after coming out from under the anesthetic, she sat up on the side of the bed, while the nurse was out of the room. She said she felt faint while sitting up, and lay down again.

There was no difficulty experienced in taking the ether, and she was under the anesthetic about one hour and twenty minutes. The day after the operation the maximum temperature was 101° F. After this there was practically no rise of temperature. The pulse varied for several days from 120 to 130. She slept seven hours the night after operation, without an opiate. No medicine was given afterwards except magnesium sulphate. The cyst wall, with its contents, weighed eighty-five pounds. The woman, after operation, probably did not weigh more than eighty or eighty-five pounds. On February 24, 1908, I saw her and weighed her. At this time she weighed 153 pounds, and said she was perfectly well.

Case II.—Jennie, colored, was operated upon in November, 1906, for a large fibrocystic tumor of the uterus, which weighed about sixty pounds. She is forty-four years old, and had all the diseases of childhood, and no other illness of importance. She gave birth to a full-term child when she was sixteen years old. Her menstruation had always been regular, and began to be painful about sixteen years ago, and continued so until she was operated upon. About sixteen years ago she noticed a lump in her right side, and for nine months the tumor mass grew very fast, reaching its height of growth in this time. After this period of time she was in bed eight months. During the eight months most of her pain was in the upper part of the abdomen. For the next fourteen years after this the abdominal distention seemed to get slightly less. I first saw her in November, 1906. At this time she was very much emaciated and weak. The abdomen was enormously distended. The tumor was flattened in front, in contrast to the spherical appearance of the ovarian cyst. On palpation there was more resistance to pressure than in cases of ovarian cyst. A vaginal examination did not materially aid in the diagnosis. There was no edema of the vulva or of the lower limbs. The heart and lungs were normal. An examination of the urine showed an absence of albumin and sugar.

An incision eight inches long was made, beginning about two inches above the symphysis pubis, and extending upward in the median line. After getting into the peritoneal cavity, a long curved trocar was inserted with difficulty. The wall of the tumor was very resisting, being about one and a half inches thick, and fibrous. After several attempts, the trocar was inserted, and then several gallons of foul smelling pus evacuated. At first it was thought that the trocar had entered some part of the digestive tract, and that the odor was due to gases from this source, but this was not the case. After evacuation it was discovered that the entire surface of the tumor was more or less attached by dense adhesions to the belly wall and viscera. This made it very dangerous to separate the adhesions by blunt dissection. These adhesions in some instances were ligated with catgut, then severed. Parts of the omentum were tied, then cut off and taken away with the tumor. After finding so many adhesions,

Fig. 2.—Fibrosystic Tumor of the Uterus. Case II.

and seeing that the tumor wall was composed of dense fibroid tissue, and that the liquid content was disintegrating fibroid tissue, it was decided best to do a hysterectomy. Consequently the ovarian arteries, broad ligaments, and uterine arteries were

ligated with fine silk. Then a ligature was placed around the lower part of the cervix, and the tumor mass taken away. The incision was sewed up with interrupted silkworm-gut sutures, and a drainage tube left in the lower angle of the wound. The wound was dressed with sterilized gauze and absorbent cotton. The drainage tube was removed the next day, but there had been no drainage through the tube.

She had a rise of temperature from 100° to 102° F., for several days, and suffered enough pain to require the use of morphine. There was no suppuration about the incision. About the third day after the operation, it was discovered that there was a hard, round lump, about the size of a cocoanut, in the pelvic cavity. This mass was very tender and painful. It remained for two months, and then gradually disappeared. The supposition is that this was a large blood clot which came from an oozing blood-vessel or vessels.

About six weeks after operation the patient began to cook. She has gained, since the operation, about thirty pounds. On February 24, 1908, she weighed 148 pounds, and is now perfectly well.

These two negro women were staying with relatives at the time of operation. These relatives had their usual house work and washing to do, consequently could not look after the patients very much, after they were operated upon. These negro houses were as dirty and filthy as any negro hut could be. In both of the above cases a trained nurse was present, to prepare for and assist in the operation, but after this they had very inefficient nursing.

Case III.—Mrs. ——, operated upon June 15, 1906, for ovarian cyst which weighed thirty pounds. She is forty-four years old and the mother of seven children. The youngest is fourteen years old. For several years previous to operation the abdomen began to be distended more and more. The distention produced no pain or discomfort. There was considerable loss of flesh. Menstruation has always been regular and painless. The operation was performed in the usual way. There were no adhesions and it took only about twenty minutes to complete the operation.

This patient had a comfortable home, clean surroundings, and a trained nurse; consequently, an uneventful recovery could be expected. She was in bed two weeks. Four weeks after operation she weighed ninety pounds. She weighs now 127 pounds and is in perfect health.

Cases No. I and No. II had very favorable surroundings for septic peritonitis. Case No. 1 was very favorable for infection, on account of the scales of psoriasis. From the success in these instances we conclude that such cases are not to be abandoned in the absence of hospital facilities.

The photograph in Figure 1 (this being of the patient—Case I) illustrates that ovarian cysts are roughly spherical, while Figure 2 shows that fibrocystic tumors are more or less flattened in outline. In cases of ovarian cysts, the sack is thin and yields to the pressure of the fluid, while the walls of fibrocystic tumors are less yielding and flattened. These two photographs illustrate an important point in diagnosis.

Consumption of Tobacco in France.—The total sum expended in France for tobacco in 1907 was nearly $100,000,000. This is 12.66 francs, or about $2.53, a head of population. Of this the treasury gains 92 per cent. The sale of cigarettes has risen from $200,000 in 1872 to $14,400,000 in 1907.

THE ART OF SURGICAL KNOT TYING.

By CHARLES H. DUNCAN, M.D.,
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Anything that hastens an operation and at the same time adds to its technique grace and precision, is worthy of serious consideration.

A new system of knot tying is here presented.

Fig. 1.—Reef knot.

It is of German origin and has never been used in this country as a system, though one of the single knots has been used to some extent. This system is being taught at the New York Polyclinic in Dr.

Fig. 2.—Granny knot.

John A. Bodine's Operative Course on the cadaver by his assistant, Dr. Robert E. Brennan, who introduced it in America, and when the writer, who is associated with him in the polyclinic, observed its

Fig. 3.—Surgeon's knot.

beauty, facility, and simplicity, and its superiority over the methods now advocated in textbooks, it was decided to illustrate and give it to the profession as a complete system of surgical knot tying.

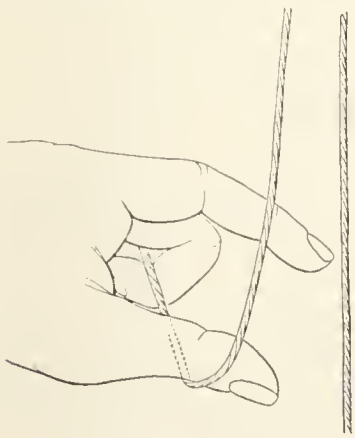

Fig. 4.—Knot No. 1, first movement.

It comprises two different single knots, each of which may be tied with either hand, the square, sailor's or reef knot (Fig. 1), and the double surgeon's knot (Fig. 3).

All single knots are tied with one hand, one end of the ligature being held passive while the other end is turned round it in the form of a loop.

Knot No. 1 (Figs. 4-8), a single knot, may be

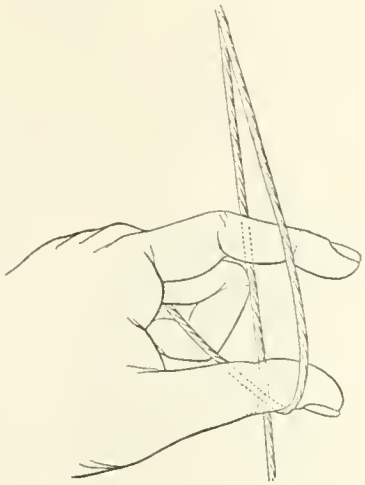

Fig. 5.—Knot No. 1; second movement.

used whenever such is necessary. It may be tied with either hand. Thus it adapts itself to the emergency of one short end of the ligature, since it may be tied with the long end, by manipulation of the

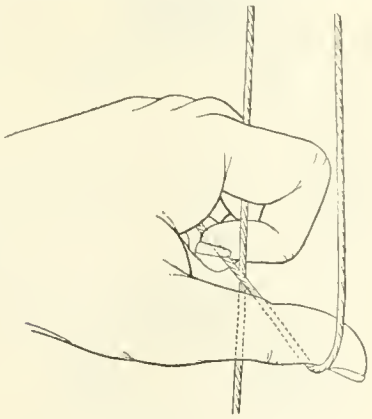

Fig. 6.—Knot No. 1; third movement.

fingers, the long end making one complete turn around the short end, forming a loop. It is recommended that it be tied with each hand with equal dexterity, for reasons that will be apparent later.

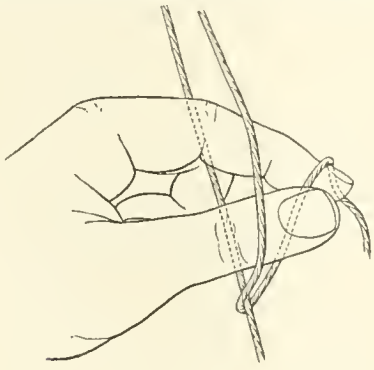

Fig. 7.—Knot No. 1; fourth movement.

If No. 1 knot is tied with the left hand, we will for the sake of referring to it, call it L. 1; if it is tied with the right hand, R. 1.

In L. 1 the manipulating end of the ligature travels around the stationary end, in a direction opposite to the hands of the clock (see Fig. 8). In R. 1 the manipulating end travels in the direction of the hands of the clock, for a right handed knot is the reverse of a left-handed knot. Since the traveling end in R. 1 travels in the opposite direction to the traveling end of L. 1, it follows that

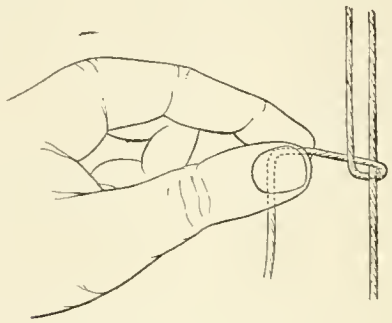

Fig. 8.—Knot No 1; final movement.

if L. 1 be followed by R. 1, it makes a square (sailor's or reef) knot, as may be easily seen by picking the knots apart.

Knot No. 4 (Figs. 9-12) is so called because the

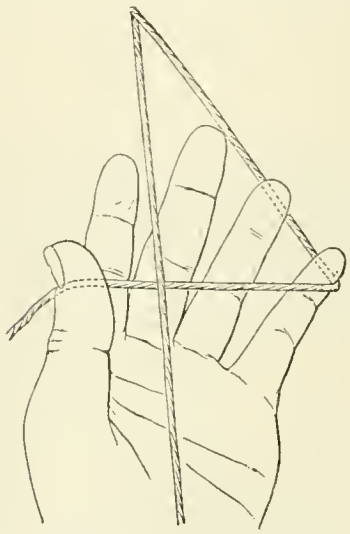

Fig. 9.—Knot No. 4; first movement.

shape the ligature assumes on the fingers before tying is that of a figure four. With the ligature spread out on the fingers as in Fig. 9, it is evident the manipulating end in L. 4 travels in the direction

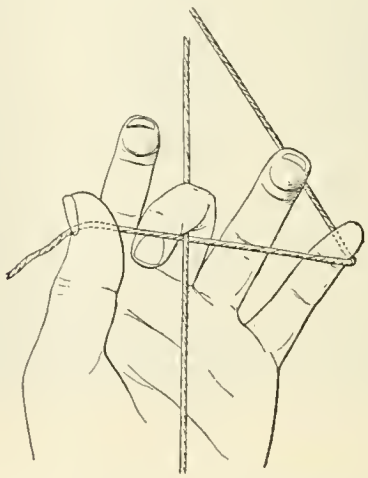

Fig. 10.—Knot No. 4; second movement.

of the hands of the clock, then L. 4 could follow L. 1 in making a square knot. This is tying a square knot with the left hand. The same thing may be done with the right hand, and it is just as

easy and simple to tie it with one hand as the other.

Now if knot No. 4 be tied with the right hand

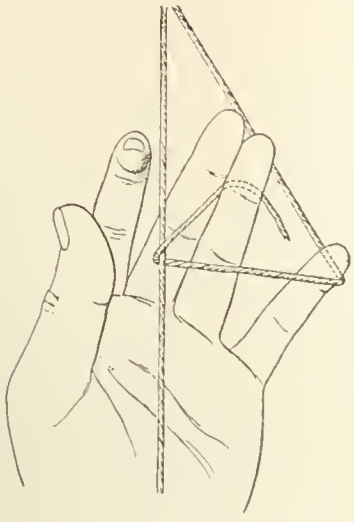

Fig. 11.—Knot No. 4, third movement.

(called R. 4), we see the manipulating end travels in a direction opposite to the hands of the clock, or in the same direction as the manipulating end in

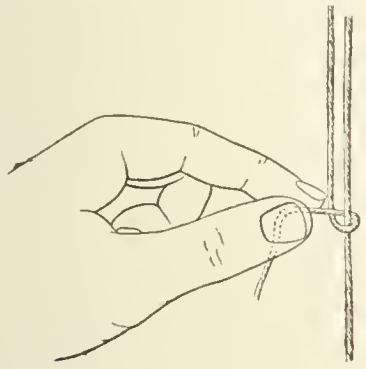

Fig. 12.—Knot No. 4; final movement.

L. 1 travels, and if it followed L. 1, would tie a granny knot; this is just what we do not wish to do.

To recapitulate for the sake of clearness:

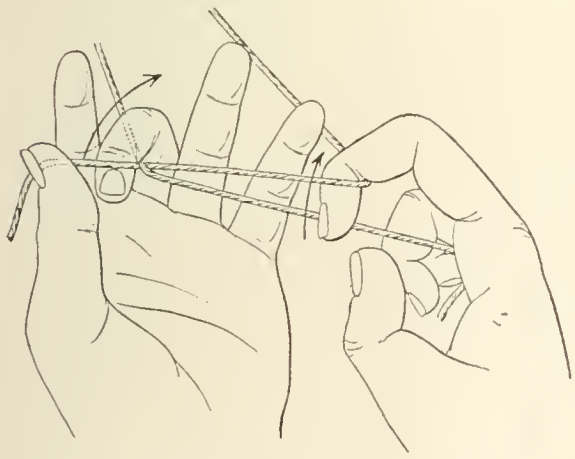

Fig. 13.—The Double or Surgeon's Knot; first movement.

L. 1 followed by R. 1 = a square knot
L. 1 followed by L. 4 = a square knot tied with the left hand
R. 1 followed by L. 1 = a square knot
R. 1 followed by R. 4 = a square knot tied with the right hand

For all practical purposes these four knots are all that are desired or needed, but if for the sake of investigation or experiment we wish to follow this system to the limit of possibilities of reef-knot tying, we will discover that there are four more square knots that can be tied equally as easy as the four given above, the only difference being that we start with No. 4 knot instead of No. 1.

L. 4 (clock-wise) followed by R. 4 (anti-clock-wise) = a square knot.
L. 4 (clock-wise) followed by L. 1 (anti-clock-wise) = a square knot tied with the left hand.
R. 4 (anti-clock-wise) followed by L. 4 (clock-wise) = a square knot.

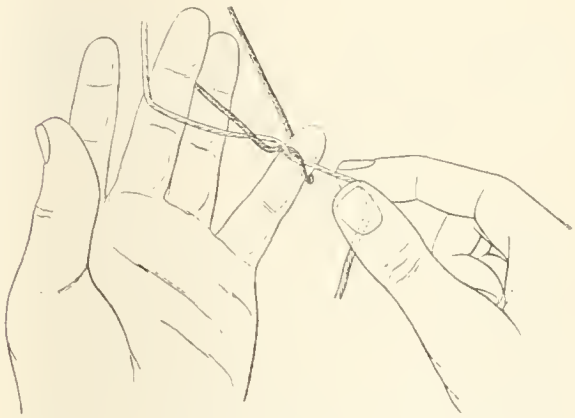

Fig. 14.—The Double or Surgeon's Knot; second movement.

R. 4 (anti-clock-wise) followed by R. 1 (clock-wise = a square knot tied with the right hand

The general rule for square, or reef-knot tying, may be stated as follows:

Never tie two knots whose traveling ends travel in the same direction, or conversely,

Always follow a knot by a knot whose traveling end travels in the opposite direction to the knot first tied.

For general surgical work it is recommended that L. 1 be used followed by R. 1 on all occasions where a square knot is desired, but with one short end of the ligature, follow L. 1 by L. 4. The reason these knots are recommended in this order is apparent when we come to the double or surgeon's knot.

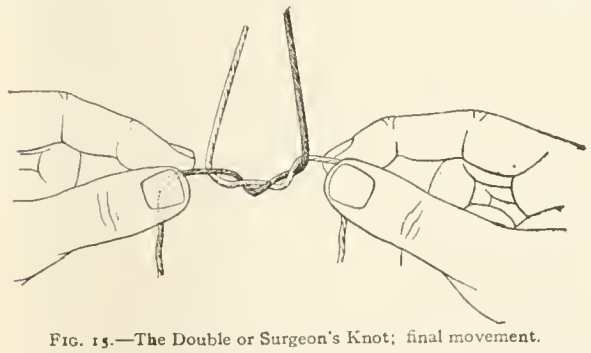

Fig. 15.—The Double or Surgeon's Knot; final movement.

This double or surgeon's knot is a combination of L. 4 and R. 1 (see Figs. 13-15). L. 4 is tied here exactly as the single L. 4 knot is tied, and the index finger of the right hand is manipulated in getting the double knot in a manner similar to the manipulation of tying the R. 1 knot. They are both tied at the same time giving the double surgeon's knot.

After the technique of knot tying is once acquired, the only thing needed to get up speed and dexterity is practice. Much can be accomplished in this direction with large gloves and fine thread. One student tied twenty-four L. 1 knots in thirty

seconds, and another twelve surgeon's knots in the same time.

By carefully studying the illustrations but little difficulty will be experienced in mastering the simple technique of this system of tying knots.

There is one error that most students seem prone to make and about which it is well to warn the beginner, and that is in regard to knot No. 1. Be sure to cross the thumb and forefinger (Fig. 5) over the passive end before attempting to bring down the revolving end of the ligature, and as soon as it is possible grasp the ligature with the thumb and forefinger and pull it through the loop (Fig. 7).

233 Lexington Avenue.

URTICARIA FOLLOWING THE SECOND ADMINISTRATION OF DIPHTHERIA ANTITOXIN.*

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The old adage, "there is no rose without a thorn," is well exemplified by the administration of diphtheria antitoxin. It is not my object here to subtract from the value of, or your confidence in, one of the greatest therapeutic triumphs of the century just passed, but to throw some possible light upon a phenomenon following its administration, which at times becomes very annoying, if not of a serious nature—and with the further hope that extended investigation may eliminate this most distressing condition.

In my paper this evening I have not attempted to deviate from a purely clinical aspect of the phenomenon, leaving to the toxicologist or the bacteriochemist an explanation from the chemico-physiological point of view. My observations extending over the past few years have been with the products of three of our leading pharmaceutical houses, and mainly with the antidiphtheritic serum, and not the "globulins" now becoming more widely used. Our experience with the latter is as yet too limited to speak in comparison with the original "nonconcentrated" product.

The term urticaria, as used by the dermatologist, covers too broad a field. The nomenclature of the dermatologist elaborates upon the lesion, which in reality, is at most undoubtedly only a symptom and not upon the various forms of the disease. Thus, the original deviation of the word is misleading in so far as the following cases are concerned. It has seemed to me that the purely local effect of the nettle or the stings of insects should not be classed with the constitutional condition, with its gastrointestinal, renal, pulmonary, and other lesions. The condition is an angioneurosis—a constitutional and not a local disease, in which the vasomotor system is accountable for most of the lesions.

The disease so far as the following cases are concerned should be separated and placed in a different category than urticaria or hives—at least, in the restricted sense of the latter term. The angioneurotic phase of the phenomenon has long been considered, but the edema as well as gastrointestinal symptoms without autointoxication or direct irritation has not been sufficiently dwelt upon, but as I have already said, it is my purpose here to present only a clinical report.

The following records on seven cases are selected to show the etiology, conditions surrounding, and symptoms of the disease which, for lack of a better term, we would class as urticaria.

Case I. Miss A., age twenty-four, Canadian, trained nurse. Family history negative. Patient a well nourished individual, inclined to the blonde type, has always enjoyed good health, aside from a few of the infectious diseases of childhood, and four attacks of tonsillitis during the past few years. During the winter of 1905 she entered the diphtheria ward, and was given 1,000 units of antitoxin on two different occasions six weeks apart. The first caused no reaction—a slight irritation formed around the point of the second injection.

On January 24, 1907, the patient developed a sore throat. The following day a membrane appeared on the tonsils and some spots on the peritonsillar structures. A culture of the throat was taken and the patient isolated and given 3,000 units of antitoxin in the gluteal region at 6 P.M. The culture was later reported negative as regards the presence of the Klebs-Loeffler bacillus. Within twenty minutes following the administration of the serum a profuse urticaria appeared over the entire body. The edema of the periorbital tissue completely closed the eyes. The patient was greatly prostrated, respiration sighing, absence of radial pulse, complained of feeling faint and chilly, also of fullness in the throat. The bowels moved freely at 8:45 P.M., the patient complaining of cramps in the bowels and soreness in the stomach. At 9 P.M. the radial pulse became perceptible, but was thready and intermittent; 10:30 P.M., pulse low in tension and irregular; 11 P.M., pulse somewhat improved, respiration still sighing, patient very restless; 12 midnight, bowels again moved freely; 3:30 to 5 A.M. the patient slept, but was restless during sleep, urinated ounces xxv at 5:30. At 7 A.M. the pulse was 88; the patient coughing a great deal from bronchial irritation, at 6 o'clock was able to retain small amount of nourishment. Temperature went from normal to 100° F. shortly after the injection of the antitoxin, but otherwise did not go above 99. The urine contained albumin and hyaline and granular casts for several days. After a few days in bed the patient gradually recovered.

Case II. Miss G., aged twenty-three, brunette, Canadian, trained nurse. Father, mother, and seven children, all living and healthy except father, who has diabetes. Patient had scarlet fever, measles, and diphtheria during childhood.

When the patient entered the diphtheria ward she was given 1,000 units as an immunizing dose. Seven weeks later a small membrane developed on the throat, and 3,000 units of antitoxin were administered. Within five minutes following this injection a profuse urticaria covered the whole body. The tongue became very swollen, abdomen very sore, and the patient complained of extreme nausea. This condition continued for three days, when it gradually subsided. On the fourth day an inflammatory arthritis developed in all the joints of the body, including the fingers and the inferior maxilla. This painful rheumatic condition lasted three days, and then gradually subsided. During this time the patient became exceedingly cyanosed at times, and has ever since had a more or less irregular heart-beat with occasional palpitations. The urinary findings in this case were negative.

Case III. Miss H., aged twenty-three, Canadian, blonde. The patient, a well-nourished individual, had most of the diseases of childhood, but never had diphtheria. Family history negative; brother had diphtheria two years previous, at which time the present patient was given 500 units of antitoxin

*Read at the meeting of Resident House Physicians, Harper Hospital, February 11, 1908; and at a meeting of the Michigan Academy of Science, Ann Arbor, April 2, 1908.

as an immunizing dose. Upon entering the diphtheria ward she received 3,000 units of serum. This is a much larger dose than is usually given for immunizing purposes, but was given with the usual feeling that it was at least harmless, there being no 1,000-unit tubes on hand at the time. This proved to be one of the most distressing cases which I have seen in the practice of medicine.

Three days following the injection an urticaria developed insidiously, starting on the face and later covering the whole body. The eyes were swollen and shut, the tear ducts were closed and could not drain. The mouth, tongue, throat, and bronchi were also the seat of lesions. The patient had a cough and could not speak above a whisper. The rash, which completely covered the body, would respond to no treatment. Morphine, gr. ¼, and hyocine hydrobromate, gr. 1/100, were given and repeated in one hour, but failed to produce sleep or give much relief from the intense itching.

The urinary symptoms were negative. The condition subsided completely on the fourth day for about twelve hours, only to recur for two more days, when it again completely subsided. The case was truly disheartening, and consulting dermatologists failed to offer any suggestions for its relief, other than those that were tried.

Case IV. Miss R., age twenty-three, American, nurse, blonde. Family history negative. Patient had scarlet fever when a child, and has had considerable throat trouble all her life, tonsillitis every year for several years, but no diphtheria. Three years ago in February upon entering the diphtheria ward she was given 500 units. Last November she developed a sore throat with membrane, and was given 3,000 units of serum, and 4,000 more units were administered on the second day of the disease. Culture of throat later proved negative. On the following day profuse urticaria appeared, first on the legs, and gradually spread over the body. This was continuous for three days and three nights, failing to respond to all treatment. Patient complained of terrible backache, the feet were swollen and edematous. Pulse at times very rapid and again very slow. Patient was cyanosed considerably at times. Urinary findings negative.

Case V. Miss B., Canadian, nurse. Family history, negative. Except for diseases of childhood she has always been healthy. Never had diphtheria, well nourished, and inclined to blonde type. Patient had 2,000 units as an immunizing dose three years previous, with no reaction. On January 24, 1908, the patient again entered diphtheria ward, and was given 1,000 units of the "globulins." On the evening of the 30th, about a week later, a rash appeared, beginning around the eyes, soon extending over the entire body. Patient had a feeling of approaching death. This all lasted about fifteen minutes, when the symptoms completely disappeared. Four hours later they returned in a less aggravated form, lasting about one hour. Following this, pronounced rheumatic pains in the muscles, described as "growing pains," persisted for a few days.

Case VI. Miss D., aged twenty-two, blonde, American. Had measles during childhood, typhoid fever two years ago, congestion of one lung three years ago, and tonsillitis last May. During the latter illness she received 3,000 units of antitoxin. In November she received 1,000 units of serum, owing to a supposed exposure to diphtheria. A short time afterwards a slight urticaria appeared on the lower limbs. This continued until January 17, when the symptoms became more aggravated, necessitating the patient going to bed with rash over her whole body, especially the chest and abdomen, vomiting, and general abdominal tenderness and tympanites. Frequent examinations of the blood-pressure during the next few days showed that it varied from 98 to 110 mm. Daily examinations of the urine failed to reveal any casts; on January 20, however, there was a partial suppression, the patient passing only four ounces in twenty-four hours. The pulse during the following week varied from 80 to 112, and the temperature from 97° to 101° F. The pulse and temperature became normal after January 19; constipation has been a marked symptom. An examination of the blood showed the following: Polymorphonuclears, 71.75 per cent.; large lymphocytes, 7.75 per cent.; small lymphocytes, 20.25 per cent.; eosinophiles, 0.25 per cent.

The patient (April 2, 1908) is still under observation, and while the digestive disturbances and skin lesions are not so pronounced, the patient is still suffering from slight daily outbreaks of the eruption and abdominal tenderness, incapacitating her from duty.

Case VII. Dr. O., aged twenty-five, American, house physician, blond. During the previous year patient received two immunizing doses of 1,000 units in the gluteal muscles. Each time a slight rash developed about three days later around the point of injection, spreading over an area of about three inches in diameter. The area was simply a diffuse, elevated blotch with a definite outline, some parts of which were raised a little more than others, but contained no fluid. The conditions were more pronounced by irritation. This lasted a few days each time and then disappeared. The patient had never suffered from diphtheria, but had frequent attacks of tonsillitis. It was during one of these latter attacks, a supposed diphtheritic infection, that 3,000 units of serum was given on the second day of the disease. The injection was made in the abdominal muscles of the left inguinal region. Three days later a macular rash appeared in this region, first around the point of injection, and rapidly spreading over the abdomen and chest. This, together with the angina, was diagnosed as scarlet fever, and the patient was transferred from the general hospital to the scarlet fever ward. The rash itched and burned and became more intense on irritation. Two days later the sore throat had entirely disappeared, and the rash subsided to a small area around the point of injection.

The patient then got up and felt perfectly well for four days, being detained for the desquamation. Suddenly at the end of this time patient again took sick with nausea, vomiting, sore throat, rapid pulse, and appearance of a scarlatina rash within twenty-four hours. There was a marked conjunctivitis, with excessive lacrymal secretion suggestive of measles. A day following the scarlatina rash the symptoms of the serum rash again appeared in an extremely aggravating form. In the course of three days the rashes gradually disappeared, but last of all from around the area where the antitoxin was administered. Desquamation was complete, and except for a nephritis which persisted for a couple of months, the patient has not been troubled since.

It will be noted that in the above cases the conditions surrounding were all virtually the same, *i.e.* the injection of antitoxin for immunizing purposes, and the second injection for a supposed Klebs-Loeffler infection, which later proved to be only a tonsillitis with membrane or exudate; or simply as a second immunizing dose.

The majority of serum rashes coming under observation have been of an urticarial character,

though the rash is sometimes scarlatinoid in character, giving suspicions of a possible scarlatinal infection. In fact, in the latter case the differential diagnosis becomes an important issue, especially in the larger municipal contagious hospitals.

We have not had facilities for recording the percentage of rashes in our patients, since they are discharged as cured in several instances before the time of appearance. But 20 per cent. would be a conservative estimate of all those receiving the antitoxin. The rashes occurring in post-diphtheritic cases have all been of a very mild type and free from the alarming symptoms as noted in some of the above cases, except in one instance. Miss C, aged nineteen, developed diphtheria (positive bacterial examination); she was given 6,000 units on the second day of the disease, and 4,000 more units on the third day. The patient did nicely, and the symptoms gradually subsided; the membrane on the throat disappeared. The physician, who was leaving the city two days later, telephoned to give the patient 3,000 more units as a further precaution. In about six hours following the last injection the body became covered with an erythematous rash without any constitutional symptoms except for a slight rise of temperature. An exceedingly painful arthralgia developed in a few days, and paralysis of some of the muscles of the throat in about a week (the latter, of course, bears no relation to the serum). In a recent talk with the patient, over a year from the attack of diphtheria, she still complained of a severe, almost constant arthralgia affecting most of the larger joints. I simply mention this case in passing as one of possible overtreatment. At least the indications were not such as would warrant the last injection, though it is impossible to lay the blame upon the extra 3,000 units.

The problem we are dealing with here is with the second dose of the serum given some time after the first. The prevalence of blonds in the above series may be a coincidence, but we are inclined to the opinion of their extrasusceptibility. It has been claimed that the deleterious effects of antitoxin are due to the foreign animal serum and not to the antibodies contained therein. From a clinical point of view this is immaterial. The term serum as used above must be taken in its collective sense. The cases of sudden death, recently reported, appear to conform to the above Cases I. and II.

In my opinion, at least some of the deaths are due to the angioneurotic edema, and not to *status lymphaticus*, paralysis of the respiratory center, diseases of the thymus gland, etc. The histories here do not conform to those in the fatal cases. It is quite probable, however, that the blood was rendered much the same in those cases by some previous agent, thus making the individual susceptible to the antitoxin.

Conclusions.—(1) The *second* immunizing dose of antitoxin should be given with caution, especially to individuals of the blond type, regardless of how long previous the first was administered. Should an individual who has at some previous time received antitoxin become exposed to diphtheria, it is better, in my opinion, if facilities are such that the exposed person can be kept under observation, to delay the administration until symptoms of diphtheria appear. Diphtheria taken early and properly treated would be accompanied by as little danger and far less suffering than were some of the cases cited above. Further, in cases of direct exposure to diphtheria, the possibility of contracting the disease is comparatively small.

(2) In persons in whom an immunizing dose of antitoxin has been given, and who later contract diphtheria, an attempt should be made to regulate the dosage in comparison with the severity of the infection, and not to push the serum too far, and thus overneutralize the toxin, possibly producing this distressing condition.

A positive clinical diagnosis of diphtheria is often utterly impossible, regardless of the amount of experience possessed by the clinician, and consequently all suspicious cases should be treated as diphtheria, and as diphtheria by antitoxin, until proved otherwise, since the possibility of trouble caused by the antitoxin is not to be compared with that of the danger from diphtheria.

THE CONVALESCENT PERIOD, AND ITS SUCCESSFUL MANAGEMENT.

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In the early convalescent period from any disease where the case has almost terminated fatally when death seemes imminent from heart failure, and when free stimulation from drugs had been made, and the patient gains resistance very slowly, and the muscles are lax and flabby and unable to perform their duty in aiding the heart to send out the normal diastolic wave, nothing in the materia medica will act so promptly as judicious and properly applied hydrotherapy.

The muscles must aid and support the heart or else the heart must positively fail. If in the convalescence there are any head symptoms of delirium, active or low muttering, affusions are most effective, no matter what the temperature, pulse, or respirations may be. This may be done by placing the patient in a tub with water at 100°, enough to cover the hips in a sitting posture, and the operator standing on a chair pours several basins of water at 70° or lower over his head and shoulders. Nothing will arouse the dormant functions so quickly; respiration is deepened, cardiac action gains in force, and each heart beat is deeper, fuller, and firmer. The sudden impingement of a considerable volume of water with decided force intensifies the mechanical and thermic effects, and draws from the central nervous system reflex stimulus to cardiac action, assimilation, and respiration, which are of decided and unmistakable value. The rapid pulse is not due to a disordered heart, but to a disturbed vasomotor system, and although the pulse may be small and thread-like at the beginning, it will be found to have gained in force by each one of these affusions, and will continue to gain more force after each one.

Cold applied to the peripheral nerve terminals of the skin is refreshing because the stimulus is conveyed to the central nervous system by means of the shock, and thence reflected by means of the nerve centers governing them to the functions of respiration, circulation, digestion, tissue-building, and excretion upon whose functionating capacity the organs depend. Therefore, in the convalescent period the affusions are most applicable because of their flexibility of temperature, duration, and pressure. For instance, in old persons we would begin with affusions at a high temperature between 88° and 92°, and in all weakly persons the same, and brief, commencing with a single basin, and as the pulse increases in force and diminishes in frequency, increasing to two or three basins, as the case may be. The patients get so attached to them

that they look for the approaching time to take the next one.

The trunk compress at night is also a very useful method of stimulation. It consists of three thicknesses of butcher's linen, to go completely around the body from the armpits to the navel or a little below it, wet with water at 70°, and one thickness of white flannel over it pinned in front with four safety pins, tight above and tight below, causing total exclusion of air from without the flannel covering. The wet linen becomes heated by the patient's own temperature, a vapor forms under the wet compress in an effort to equalize the temperature between the body and the compress, and together with the movements of the chest in respiration, thus keeping up a certain amount of friction upon the capillaries and dilating them; the right heart is relieved, not by *vis a tergo*, but by a *vis a fronte* formed by broadening the blood stream in the capillaries, whose enhanced tonicity propels the blood onward. This is hydrotherapy in a nutshell. Arterial tension is increased. The right heart being relieved of its fullness, on account of there being more room in the arteries, is able to contract further, and each contraction is fuller and firmer. The most important effect of cold is the aid and support it furnishes the central nervous system, which bears the whole brunt of the fight. To show how cold will stimulate the function of assimilation, it is a well-known fact that patients convalescing from pneumonia, typhoid fever, or other infectious diseases, after the water treatment acquire immediately a ravenous appetite, in contradistinction to those convalescing after the expectant plan. In the latter the functions may take months or even years to resume their normal condition, if they ever do.

Still another good mode of applying water when the patient is in bed and too weak to be handled roughly is what is called the "ablution." The patient's feet and legs to the knees are wrapped up snugly in a thick blanket, and the patient is rapidly washed down with water at 70° to 80°, chest, and back, and arms to elbows, and thighs to the knees with the flat of the hand or a piece of gauze, going over the parts several times and squeezing water freely and rubbing with hand or gauze; he is then rapidly or partly dried, given a cup of warm liquid food or milk, and left to sleep, which he generally does for a couple of hours. In order that the effect upon the heart be continuous it is necessary to repeat the application every three hours in desperate cases. In many cases, as in fever and other depressed conditions, when the pulse is rapid and small a rapid ablution at 70° would be of better service on account of its brevity and minimum of disturbance to the patient, when a prolonged Brand bath would be harmful.

The reactive capacity of the patient must be studied to establish his ability to withstand the proper gradation of cold. This may be obtained by passing the back of the nail of the forefinger of the right hand across the abdomen or chest and increasing the pressure on the second stroke made parallel to the first. According to the deep reddening of the skin and the celerity of the blood in following the nail, after a little practice the reactive capacity of the patient may be readily judged. In the eruptive fevers, such as scarlatina, brief affusions at 70° every hour are most useful—no full baths, no friction, on account of the tender skin and eruption. It is dangerous to give stimulants or any other drugs in the convalescent period unless the circulation and blood-pressure are thoroughly established. They only make the enfeebled heart work away in these desperate conditions like the locomotive which has lost its resistance by slippery tracks. The thing to do is to put sand on the track and restore the resistance. The cold bath with friction, or the ablution with the hand, or the affusion with a good impact of water, or any other hydriatic procedure, according to the patient's reactive capacity, properly given, by the enhancement of the contraction and subsequent dilatation of the capillary vessels, and the filling of them, restores the normal tone and resistance to the heart, and thus reinstates lost blood-pressure. Shock, by cold to the peripheral nerve terminals and reflex stimulus to the cutaneous vessels, is the only object in view, and not the heart.

Success or failure depends upon the exact execution of any hydriatic procedure, and familiarity with technical detail is just as essential for the judicious and effective application of any form of water as is the technique of a surgical procedure to the surgeon. The heart's action can be stimulated and awakened more promptly by cold applied to the peripheral nerve terminals of the skin than by any other means, because the shock of the cold (and the colder the water the more pronounced is the reaction) is always conveyed to the central nervous system and thence reflected to the three chief blood-pressures, (*a*) the pressure behind the column—the heart; (*b*) the pressure on the sides of the column—the muscular coats of the arteries and the elastic fibers of the arterioles, and (*c*) the pressure in front of the column—the normal elasticity of the capillaries. In this manner is blood-pressure maintained.

As an illustration of the power of cold for good I may mention how red and warm the hands get in making snowballs and packing the snow hard with the hands. The warmth and ruddy hue of the hands demonstrates the fullness and dilatation of the capillary vessels with arterial blood, consequently the heart is relieved of its fullness and invigorated. In the convalescent period all these methods of management are useful if carried out as technically correct as possible. They increase oxygenation and promote hematosis more rapidly than any other means, and no matter how small and thread-like the pulse may be, it has always gained a little in force and diminished a little in frequency after each application.

621 West One Hundred and Seventy-ninth Street.

Uterine Infection in the Course of Pregnancy and the Puerperal State.—F. Menod studies infection from the beginning of pregnancy to the end of delivery. It may result from a fault of technique, or may extend secondarily to the uterus. First the author considers criminal abortion. Curettage is often not advisable as a remedy. We should first determine the extent of infection, and should be guided by the general and local conditions. When the membranes are not ruptured and there is little flow, conservative measures should be adopted and the pregnancy may continue. Curettage would create a source of entrance for infection by producing a wound. The epoch of interference is generally at the time of pregnancy when hemorrhage would be greatest and most difficult to control. The temperature curve will be an important guide. When the membranes have ruptured curettage is more necessary, but is better done after the symptoms of infection have passed. In noncriminal abortion the cause is generally inflammation of the adnexa. The indication is to aid nature and not be too quick to operate. Puerperal infection may result from faulty technique or infection from without, as the adnexa. Any vaginal source of infection must be sought, retention of placental remains looked for, and the condition of the uterus examined. Quinine, ergotine, and cafeine are useful. Large intrauterine douches are valuable after being sure that the uterus is empty.—*Journal de Médecine et de Chirurgie.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE CANCER PROBLEM.

CANCER is recognized as the second great scourge of civilized man after tuberculosis, if indeed it is not the chief and worst of the ills of human flesh. Its terrible prevalence is shown by the facts that every eighth woman who has passed the age of thirty-five years is doomed to perish from this disease, and that malignant growths are found in one of every twelve hospital autopsies. Tuberculosis, there is every reason to hope, is on the road to extinction, though the way is still long before that goal will be reached; its cause is known—at least in a general way, although the exact mode of invasion is not yet absolutely determined, its prevention is almost within reach, and it is, if taken in time, curable. But cancer remains a mystery in its causation, and its prevention and definite cure are as yet obtainable only by mutilation, and even then in only a small proportion of cases. This is not because the study of the disease is neglected, for there is no physical ill that is the subject of more earnest study by skilled investigators all over the world than this, but none that has as yet rewarded its students less. That the day will come, however, when cancer shall be conquered no one can doubt who believes in the final success of human endeavor, and that this day is even now dawning is the hope aroused by the inspiriting address delivered by Dr. Crile of Cleveland before the American Medical Association at the annual session in Chicago this week.

Until the cause or causes of malignant growths, both sarcoma and carcinoma, shall have been discovered the treatment must remain surgical, which, even though occasionally successful, is painfully uncertain and only accidentally curative, since it only removes the local manifestation of the disease, and does not alter the constitutional defect, upon which the possibility of such growth depends. It is like the accidental deflection of a bullet by the button of a soldier's coat or the watch or wallet in his pocket; the lucky chance saves him from death by that particular bullet, but offers only a superstitious hope of immunity from a second missile. The fact of natural or acquired immunity, of which Dr. Crile speaks, disproves the theory of the local origin of cancer and strengthens the almost universal belief of the laity, shared by a large proportion of the profession, that operation, while necessary, indeed offering the only hope of life, is but a makeshift and a confession of therapeutic impotence. But the discovery of immunity does infinitely more than disprove a theory; it opens up the possibility of eventual success in the treatment of cancer, the mere thought of which is pulse-quickening. Cancer immunity in mice has long been recognized, but the experimental cure of sarcoma in dogs by transfusion of the blood of immune dogs, as obtained in nine out of eleven cases by Crile and Beebe, is a practical therapeutic application of wonderful promise. The trials of the method on man are too recent to warrant any certain deductions, yet the fact of freedom from recurrence for sixteen months in one case with exceedingly bad prognosis is significant, at least.

The diagnostic application of hemolysis, to which Crile refers, is another very important and interesting fact. The entire article, indeed, is worthy of the most careful study, and must be regarded as one of the most valuable contributions to the literature of cancer that has yet appeared. It can but inspire other workers to fresh efforts, and the possibility it suggests of the eventual treatment of malignant disease without mutilation and with a reasonable hope of actual cure is full of comfort for the future. It has at least cast a faint ray of light into a region which has hitherto been one of almost abysmal gloom.

THE SPECIFICITY OF VON PIRQUET'S CUTANEOUS TUBERCULIN REACTION.

ON the assumption that the body is sensitized by the first injection of a toxin, reacting more quickly to a second injection (the principle of "allergie"), v. Pirquet laid great stress on the diagnostic value of the skin reaction to tuberculin. He claimed that the body which had once been in combat with the tubercle bacillus, and therefore contained a tubercle toxin, responded with a typical skin papule on being vaccinated with tuberculin. For practical purposes, however, he restricted this test to children, admitting that it was of little value in adults, as ninety per cent. of them gave a positive reaction. Most investigators agree with v. Pirquet in that it is of diagnostic value in children. To test its specificity further, R. Entz (*Wiener klinische Wochenschrift*, March 19, 1908) tried the effect of various other toxins in adults, using diphtheria, typhoid, paratyphoid, and pyocyaneus toxins. In 110 adults he obtained seventy-five per cent. positive reactions with tuberculin, both in those who were tuberculous and in those who revealed no tuberculosis clinically. The tuberculous and nontuberculous patients also reacted alike to the other toxins, giving a positive reaction in fifty per cent. The reaction caused by the tuberculin lasted a little longer, but the resulting papule could not be differentiated microscopically from the one caused by the other toxins. Entz also vaccinated 126 children, from a few months to fourteen years old, with tuberculin, diphtheria, typhoid, paratyphoid, cholera, and symptomatic anthrax toxin. Sixty-eight per cent. of those clinically tuberculous, and forty-five per cent. of the others, gave a positive reaction with tuberculin. The other toxins, however, gave as many positive reactions as the tuberculin, and the papules again all looked alike. Seventy-five per cent. of the children who had diphtheria, or who had received an immunizing dose of diphtheria antitoxin, showed a positive reaction, as did

also thirty-one per cent. of those who never had diphtheria or an antitoxin injection. Those who reacted positively to the cholera and symptomatic anthrax toxins had certainly never been infected with the cholera or symptomatic anthrax bacillus, so that the positive reactions with these and the other toxins cannot be explained on the principle of "allergie," on which v. Pirquet explains the positive reaction after vaccination with tuberculin. From these findings Entz argues that the tuberculin reaction is similar to the others, and is probably nothing else than an expression of an individual local sensitiveness to the toxin.

Schläpfer (*Beiträge zur Klinik der Tuberkulose*, Vol. IX., No. 2) vaccinated patients in two places with tuberculin. In one place the skin was normal, in the other he had caused a hyperemia with a mustard plaster applied for twenty minutes. He found that in those patients in whom the hyperemia lasted twenty-four to forty-eight hours, the tuberculin caused no reaction over the hyperemic area though it caused one on the normal skin of the same patient. When the hyperemia lasted only six to ten hours, the mustard plaster having been left on the same length of time, a mild reaction was found in both places, which goes to show that the activity of the skin plays a rôle in the outcome of the vaccination. Entz's observations and the influence of hyperemia on the reaction, bring up the question whether a positive reaction after vaccination with tuberculin is possibly nothing else than a local process, in no way related to the immunizing processes in the body, and one that cannot be called specific in the sense that v. Pirquet claims. At any rate, some doubt is thrown on the diagnostic value of this test, even in children.

DIRECT TRANSFUSION AS A THERAPEUTIC MEASURE.

In 1666 Jean Denis first attempted blood transfusion in a human being. In the following years it was tried everywhere, usually by the indirect method, though at times by the direct from vessel to vessel by means of a cannula. Some successes were reported, but after numerous fatalities the procedure was dropped, in fact forbidden by the French government. In the beginning of the nineteenth century it was again taken up. Investigators proved that nondefibrinated blood was dangerous, causing multiple thrombosis, that the blood of one species injected into an animal of another species caused hemolysis, and that blood might functionate normally if transfused into an animal of the same species. Finally, in 1883, it was agreed that only direct transfusion from artery to vein was permissible. On account of the uncertain and cumbersome methods of anastomosis, however, transfusion was not practised.

With the recent development of practical means of blood-vessel anastomosis, direct arteriovenous transfusion again came within the realm of possibility. In 1898 Crile proved experimentally and to some extent clinically that transfusion is the best treatment for illuminating gas poisoning and for every degree of hemorrhage. Recently R. Ottenberg (*Annals of Surgery*, April, 1908) tried it in two cases of secondary anemia with good immediate results. The transfusion lasted thirty-five minutes, during which time the condition of the patient improved visibly. The pallid lips became red, breathing became easier, the mental condition changed from semi-stupor to almost exhilaration. The percentage of hemoglobin rose from fifteen to thirty-five, the red cells from 600,000 to 1,096,000 per cubic millimeter. He used the ring method of anastomosis and describes it in detail. Because of its simplicity he prefers it to Carrel's suture method for temporary anastomosis in direct transfusion. While it is now universally admitted that the blood of one healthy animal is physiologically interchangeable with that of another healthy animal of the same species, Ottenberg reminds us that there are cases on record of fatal hemolysis after transfusion in cases of pernicious anemia. This indicates that in some diseased conditions mixture of blood, even of the same species, is dangerous. In one of his patients he first determined whether hemolysis might occur; his method, however, was cumbersome.

It may be said that in certain cases direct transfusion from artery to vein is a safe and valuable therapeutic measure. However, not until we possess a simple clinical test to determine beforehand whether hemolysis is likely to occur and not until we have a better knowledge of the diseases which contraindicate transfusion, can it be generally recommended.

THE OPERATIVE TREATMENT OF PULMONARY EMPHYSEMA.

Some years ago A. Freund advanced a theory with respect to emphysema of the lungs. He claimed it was due to pathological changes in the costal cartilages which caused the chest to become barrel shaped, giving it the appearance as if it were in a permanent inspiratory position. He held that this position of the bony thorax caused a constant abnormal tugging on the lungs which in turn brought about the emphysema. Most observers consider the barrel-shaped chest as secondary to the emphysema, though some admit that there are children who have a congenital barrel-shaped chest and who develop emphysema early in life, there being a congenital disproportion between the size of the thorax and the lungs. Whether the barrel-shaped chest is primary or secondary, it is dependent, Freund says, on changes in the costal cartilages. The latter gradually become calcified, are pushed forward, and thus give the characteristic rotundity to the thorax, the disease usually beginning in the second or third costal cartilage. On a cadaver with a barrel-shaped chest the latter sinks back into the expiratory position after several costal cartilages have been cut. This observation led Freund to suggest cutting the costal cartilages in patients with emphysema, as in this way the rigid dilated thorax becomes mobilized and the dilated lung is permitted to retract. Recently three cases were reported as relieved by this rather heroic treatment. In the *Semaine Médicale*, No. 45, 1907, F. Lejars again draws attention to this method of treatment. He advises resecting two centimeters of the costal cartilages, taking care not to injure the insertion of the triangularis sterni. He does a subperichondral resection of five or six cartilages on each side. While this treatment mobilizes the thorax it would seem to do but little good in

those cases in which the barrel-shaped chest is secondary to the emphysema, yet it might be of value in cases in which one was certain that the abnormal bony thorax existed a long time before subjective symptoms of emphysema set in.

Starch in the Diet of Infants.

A few years ago the leading pediatrists taught that the addition of starchy food to the diet of infants is contraindicated, this teaching being supported by the alleged absence of the diastatic ferment of the pancreas in young infants. Later researches have disproved the latter assumption and physicians have turned to starchy foods in many difficult feeding problems. Dr. Hans Rietschel (*Deutsche medizinische Wochenschrift,* May 7, 1908) considers that the use of starch is especially indicated in those remarkable cases in which a milk diet is followed by malnutrition with the clinical picture of acidosis. Fat seems to be the badly borne element, and the carbohydrates, both sugar and starches, ought therefore be liberally used for fairly long periods of time. In the acute digestive disturbances, on the other hand, starchy food is to be used simply as a temporary diet, while the digestive tract of the child is regaining its normal tolerance toward proteids and fats. Exclusive starchy food has its evil consequences that range from slight malnutrition to marantic conditions, accompanied by tetany. While, therefore, the use of starchy food under the direction of a physician may be of great value in selected cases, ignorant adherence to a starchy diet, because of the apparent initial success with it in many cases, is to be strongly deprecated.

Operations for Hernia in Infancy.

The general opinion of surgeons is not favorable to early operative interference in cases of hernia of infants. On *à priori* grounds it is usually thought that such serious procedures are not borne as well in the tender age of the first year or two, as at a later period. Writing in the *Münchener medizinishe Wochenschrift* of May 12, 1908, Grossmann combats this opinion and gives instructive statistics of his cases. During a three years' service as surgeon to a children's hospital he performed one hundred and eleven operations for hernia, ninety of which were inguinal and twenty-one umbilical. Twenty-eight of the children were under one year of age, indeed ten of them were younger than three months. Most of the cases had been unsuccessfully treated before the operation by manual reposition, massage, trusses, etc. The results of the operations are quite remarkable: mortality was zero, in no case was there even any local wound disturbance, and all the patients were cured. Dr. Grossmann's results bid fair to change our attitude toward the advisability of operating in cases of hernia in infants. Such interference, with correct technique, appears to be relatively without danger, and, of course, offers much better chance of cure than conservative treatment.

Focal Symptoms in Diffuse Brain Affections.

Focal symptoms are usually looked upon by the surgeons as indications of local disease of the brain; their character and site guide him in choosing the spot for opening the skull in order to reach the portion of the brain involved in the disease. It is, however, to be remembered that focal symptoms may appear in diffuse disease where operation is not indicated. Saenger (*Münchener medizinische Wochenschrift,* May 12, 1908) reports several cases in which a mistaken diagnosis of local disease was thus made. An especially frequent cause for such focal signs seems to have been tuberculous meningitis. Other cases were those of diffuse sarcomatosis, diffuse leptomeningitis, chronic hydrocephalus, and arteriosclerosis of the cerebral vessels. The surgeon must therefore be on his guard against too hasty an assumption that in the presence of focal symptoms local disease of the brain alone exists. In many cases, of course, an exploratory operation is advisable, even when the diagnosis is very doubtful; lumbar puncture, however, ought to be frequently performed, for it may reveal the existence of a general infection of the brain or the meninges and thus contraindicate operative interference.

News of the Week.

Hospital of the Rockefeller Institute.—In the following letter to the Board of Governors of the Rockefeller Institute Mr. John D. Rockefeller, Jr., announces the addition of a hospital to the other departments of the institute: "Understanding that in the judgment of your board a hospital building is desirable in order to facilitate the work of research for which the institute was founded, my father will provide for the purchase of land and the erection and equipment of a suitable hospital building, whatever amount may be necessary, up to a total of $500,000, payments to be made as the work progresses. My father thus enlarges the scope and possibilities of the institute in grateful recognition of the services of Dr. Simon Flexner, as director, rendered in those orderly and progressive scientific investigations, which, sanctioned and encouraged by your board and aided by learned associates and assistants, led him at length to the discovery of a cure for epidemic cerebrospinal meningitis."

Endowment of the Massachusetts College of Pharmacy.—At the commencement exercises of this institution, held on May 14, it was announced that the college had acquired an endowment fund amounting to $150,000 by the terms of the will of Warren D. Potter. Mr. Potter, who was a wholesale druggist, died a number of years ago, and by the provisions of his will a residue of his estate reverted to the college two years after the death of his wife.

A Donation to the King Edward Hospital Fund.—Lord Mountstephen has given 5,000 shares of the Great Northern Railroad to the King Edward Hospital Fund in London. At the present quotations this gift is valued at about $600,000. Lord Mountstephen had already given securities to the value of $2,000,000 to the same fund.

Pensions to the Widows of Medical Investigators.—Congress has granted a pension of $1,500 a year to the widow of Dr. Jesse W. Lazear, who died of yellow fever experimentally induced, and the same amount to the widow of Major James Carroll, who died of heart disease, resulting from an attack of yellow fever also experimentally induced. It will be remembered that both of these men were members of the Army Commission, under the late Major Reed, which studied yellow fever in Cuba and confirmed Finlay's theory that the disease is spread through the agency of mosquitos.

"Zeitschrift fuer Laryngologie, Rhinologie und ihre Grenzgebiete."—This is the title of a new nose and throat journal edited by Dr. Felix Blumen-

thal of Wiesbaden and published by Curt Kabitzsch of Würzburg. The departments consist of original articles, abstracts, bibliography, book reviews, society reports, etc. The initial number contains some ten original contributions, and if these are examples of what are to follow the new publication will attain an enviable reputation. We would make special mention of "A Case of Congenital Laryngeal Air-sac in a Child of Sixteen Days," by Kan; "Congenital Membranous Formation in the Larynx," by Hansburg; and "Amputation of the Epiglottis in Tuberculosis of the Larynx," by Möller. The journal is well printed, and of an attractive appearance.

Pneumonia in Chicago.—The City Health Department is gaining in its fight against pneumonia in Chicago. During the first four months of 1908 the number of deaths was 712 less than in the same period of 1907, and of this saving 413 was in pneumonia. Much the largest factor in this decrease of deaths from pneumonia has been better ventilation, especially in homes.

The Control of Tuberculosis in Cattle.—New York State has adopted the Bang system of dealing with tuberculosis in the dairy herds. According to this plan, animals which react to the tuberculin test, but show no physical signs, are placed in herds separate from the healthy animals and used for breeding purposes only. As soon, however, as they develop physical signs they are slaughtered. The stables previously occupied by the diseased animals are thoroughly disinfected before they can be used for cattle again. The healthy calves from the herd of cows reacting to tuberculin, but showing no physical signs, are used to replenish the healthy herd.

Progress of the Prohibition Sentiment.—North Carolina is the latest State to vote in favor of forbidding the sale of liquor. At the election recently held a majority of the counties went dry. The list of prohibition States now includes Maine, Kansas, North Dakota, Georgia, Alabama, Mississippi, North Carolina, and Oklahoma.

Fraudulent Patent Medicine Testimonials.—A young woman of this city has recovered a verdict for $6,000 against a patent medicine company for publishing a picture of her without her consent and a testimonial which she never wrote or signed. The plaintiff testified that she was told a lady admired her appearance so much that she wanted her to have a photograph taken. The lady said she would pay the photographer for the dozen pictures on condition that she might keep one for herself. As for the testimonial of cure of uterine trouble by means of the medicine, that was written and signed by another person, without the plaintiff's knowledge or consent. The publication of the picture and testimonial in the newspapers brought so much ridicule upon the young woman that she was forced to give up her employment.

Dental Clinics for School Children.—A movement is on foot for the establishment of a number of free dental clinics for the benefit of the children of the public schools in this city. The plan originated with the supporters of Greenwich House, the Jones Street settlement organization, though it has been already carried out to a greater or lesser extent in London, Boston, and other cities at home and abroad.

A Scourge of Scorpions.—It is reported from San Cristobal de la Barranca, Mexico, that scorpions have appeared recently in great numbers in the town, and that many persons have been bitten by them, fourteen young children so bitten having died.

Suicide in Russia.—During the past three months 255 suicides have been reported in St. Petersburg, eighteen having occurred in one day the latter part of May. The cause alleged for most of the cases was despondency, due in some to destitution.

Cholera in the Philippines.—During the last four weeks cholera has appeared in the provinces of Pangasinan and Capiz. In the former four cities are infected, and in Capiz there have been 231 cases since the first of the year.

Green Cross Ambulances.—Owing to the protest of the Red Cross Society against the use of its emblem, the ambulances of Bellevue and allied hospitals will hereafter carry a green cross.

A Milk Fed Horse.—A French horse, called Azote, has been entered for the Derby. The horse has no particular pedigree to boast of, but enjoys the distinction of never having tasted oats or corn, having been raised entirely on a dried milk food, of which he eats seventeen pounds a day, with an occasional small allowance of hay. It is claimed by the owner of the animal that a horse so fed is stronger and in better condition every way than one brought up on the ordinary vegetarian diet.

Dr. Baruch at Winternitz's Clinic.—At the closing session of Winternitz's post-graduate course in hydrotherapy at Vienna, Dr. Simon Baruch of this city was introduced to the students by Winternitz, who spoke of him as a former pupil and one who had brought honor upon the Vienna clinic by his propaganda of hydrotherapy in America. Baruch delivered a brief address, giving the history of the spread of this therapeutic measure in the United States.

Dr. John H. McCollum has been appointed to the professorship of infectious diseases at the Harvard Medical School. He was for many years city physician of Boston and superintendent of the department of contagious diseases of the Boston City Hospital.

Dr. Peter E. Hughes of Brooklyn Borough has been appointed medical examiner of the Comptroller's Department of New York, to succeed Dr. C. J. Pflug.

Dr. DeSantos Saxe of New York has been appointed instructor in genitourinary diseases in the New York Post-Graduate Medical School and Hospital. The appointment was made on the basis of a competition, each competing candidate presenting an original thesis.

An International Association for Cancer Research was formed in Berlin May 22. The objects are to promote the care of patients suffering from the disease, to collect and publish statistics, to establish an international center of information on this subject, to publish an international journal, and to organize international congresses.

The American Hospital Association.—The tenth annual conference of this association will be held at Toronto on September 22, 23, 24, and 25, 1908. The program of the convention will cover the varied interests of hospitals, large and small; and besides the papers, which will be presented by members of the association and by the several subdivisions of the Committee on Hospital Progress, there will be addresses and papers by guests who have been invited to participate in the conference.

Missouri State Medical Society.—The annual session of this society was held at Springfield May

20, 21, and 22. The following officers were elected: *President,* Dr. A. R. Kieffer of St. Louis; *Secretary,* Dr. A. W. McAllister, Jr., of Kansas City; *Treasurer,* Dr. J. F. Welsh of Salisbury; *Orator on Medicine,* Dr. R. L. Goodler of Hannibal; *Orator on Surgery,* Dr. F. J. Lutz of St. Louis. Jefferson City was chosen as the place of meeting in May, 1909.

The New Hampshire State Medical Society held its one hundred and seventeenth annual meeting at Concord the third week in May. The following officers were elected: *President,* John M. Gile, Hanover; *Vice-President,* Frank Blaisdell, Goffstown; *Councillors,* Belknap county, A. H. Harriman, Laconia; Grafton county, M. S. Woodman, West Lebanon; *Trustee for three years,* W. T. Smith, Hanover; *Delegate to Dartmouth Medical College* for two years, A. C. Heffenger, Portsmouth; *Anniversary Chairman,* H. N. Kingsford, Hanover; *Necrologist,* E. E. Graves, Penacook.

The Council of the New Brunswick Physicians and Surgeons, which met at Fredericton the third week in May, elected the following officers: *President,* Dr. Murray McLaren; *Registrar,* Dr. Stewart Skinner; *Treasurer,* Dr. Thos. Walker; *Examiners,* Drs. Skinner, Atherton, Inches, T. D. Walker, Geo. A. B. Wills, J. W. Daniel.

The Montana State Medical Association.—The annual meeting of this society was held in Butte during the second week in May. The election of officers resulted in the following choice: *President,* Dr. I. D. Freund of Butte; *First Vice-President,* Dr. A. Hershey of Helena; *Second Vice-President,* Dr. C. W. Jump of Bozeman; *Third Vice-President,* Dr. E. F. Dodds of Missoula; *Secretary,* Dr. Grace Cahoon of Butte; *Treasurer,* Dr. C. T. Pigot of Butte; *Delegate to the American Medical Association,* Dr. Donald Campbell of Butte. The next annual session will be held at Missoula in May, 1909.

The Nebraska State Medical Association.—At the annual meeting of this society, held in Lincoln during the third week in May, the following officers were elected: *President,* Dr. L. M. Shaw of Osceola; *First Vice-President,* Dr. F. E. Coulter of Omaha; *Second Vice-President,* Dr. C. P. Fall of Beatrice; *Delegate to the American Medical Association,* Dr. Harold Gifford of Omaha; *Alternate,* Dr. A. R. Mitchell of Lincoln; *Councillors,* Dr. J. P. Gilligan of O'Neill, Dr. W. J. Birkofer of Gothenburg, Dr. N. T. Johnson of Upland, Dr. D. T. Guigley of North Platte, and Dr. H. H. Bellwood of Alliance.

Iowa State Medical Society.—At the annual meeting of this society, held during the third week in May, the following officers were elected: *President,* E. F. Wahren of Fort Madison; *Vice-President,* Dr. F. G. Murphy of Mason City; *Secretary,* Dr. V. L. Treynor of Council Bluffs; *Treasurer,* Dr. W. B. Small of Waterloo.

The Iowa State Society of Medical Women held its eleventh annual meeting at Des Moines on May 19. The following officers were elected: *President,* Dr. Agnes Eichelberger of Sioux City; *First Vice-President,* Dr. Lily Kinnier of Dubuque; *Second Vice-President,* Dr. Lena L. Means of Des Moines; *Treasurer,* Dr. Frisbie of Des Moines; *Secretary,* Dr. Georgia Stewart.

The North Dakota State Medical Society met in annual session at Grand Forks on May 15 and 16. The following officers were elected: *President,* M. A. Beaudeaux, Fargo; *First Vice-President,* Dr. J. A. Countryman of Grafton; *Second Vice-President,* Dr. John D. Taylor, Grand Forks; *Third Vice-President,* Dr. R. A. Beck of Lakota; *Secretary,* Dr. Rowe, Casselton; *Treasurer,* Dr. John Taylor, Minot; *Councillors,* Dr. H. M. Wheeler, Grand Forks; Dr. F. R. Smyth, Bismarck; Dr. George Carpenter, Fargo.

The Utah State Medical Association.—The fourteenth annual meeting of this society was held at Salt Lake City during the second week in May. The election of officers resulted as follows: *President,* Dr. E. C. Rich of Ogden; *First Vice-President,* Dr. L. W. Snow of Salt Lake City; *Second Vice-President,* Dr. W. W. Woodring of Mount Pleasant; *Third Vice-President,* Dr. G. W. States of Franklin, Ida.; *Secretary,* Dr. W. Browne Ewing; *Treasurer,* Dr. J. W. Harrison; *Delegate to the American Medical Association,* Dr. Baldwin; *Alternate,* Dr. F. W. Taylor of Ogden. The next meeting will be held in Ogden some time during the early part of October, 1909.

The Arkansas State Medical Society held its annual meeting at Little Rock on May 15 and 16. The officers elected for the ensuing year were as follows: *President,* Dr. J. P. Clegg, Siloam Springs; *First Vice-President,* Dr. E. K. Williams, Arkadelphia; *Second Vice-President,* Dr. J. L. Hall, Pocahontas; *Third Vice-President,* Dr. D. D. Luck, Pine Bluff; *Secretary,* Dr. Morgan Smith, Little Rock; *Treasurer,* Dr. J. W. Scales, Pine Bluff; *Councillors,* Second District, Dr. H. O. Walker, Newport; Fourth District, Dr. William Breathitt, Pine Bluff; Sixth District, Dr. J. H. Weaver, Hope; Eighth District, Dr. C. P. Meriwether, Little Rock; Tenth District, Dr. F. B. Young, Springdale; *Delegates to the American Medical Association,* Dr. C. C. Stephenson, Little Rock; *Alternates,* Dr. G. A. Warren, Black Rock; Dr. B. Hackett, Fort Smith. The next meeting will be held at Pine Bluff in May, 1909.

The Louisiana State Medical Society met in annual session at Alexandria on May 12, 13, and 14. The following officers were elected to serve for the ensuing year: *President,* Dr. E. Denegre Martin, New Orleans; *First Vice-President,* Dr. J. B. Hargrove, Natchitoches; *Second Vice-President,* Dr. C. J. Gremillion, Alexandria; *Third Vice-President,* Dr. John Callan, New Orleans; *Secretary,* Dr. E. M. Hummell, New Orleans; *Treasurer,* Dr. C. C. Bass, New Orleans. *Councillors:* First Congressional District, Dr. P. E. Archinard, New Orleans; Second, Dr. E. J. Graner, New Orleans; Third, Dr. Allan Eustis, Abbeville; Fourth, Dr. J. L. Scales, Alden Bridge; Fifth, Dr. E. Dunbar Newell, St. Joseph; Sixth, Dr. C. N. Sitman, Greensburg; Seventh, Dr. R. O. Simmons, Alexandria.

Obituary Notes.—Dr. Colin G. Strong died May 7 at Los Angeles, aged 81 years. He was born in Edinburgh, his father being U. S. Consul there. He served during the Civil War as surgeon of an Iowa regiment of volunteers. For a number of years he had lived in San Francisco.

Dr. G. F. Webber of Fairfield, Me., died on May 11 at the age of 55 years. He was born in Litchfield and was graduated from the Boudoin Medical School in 1879. He practised first at Lisbon Falls, Me., then at Waltham, Mass., and finally at Fairfield, Me.

Dr. A. E. Field died at his home in Barre, Vt., on May 9, at the age of 88 years. He was a graduate of Dartmouth College in 1846.

Dr. Louis L. Hintz died at Marion, Ark., on May 9, at the age of 40 years. He was born in New Orleans and was a graduate of the Memphis Hospital Medical College in 1890. He practised in Memphis a number of years before going to Marion.

Dr. Ernest W. Bennett of Worcester, Mass., died on May 19, at the age of 41 years. He was a graduate of the Medical Department of the University of Vermont in the class of 1897.

Dr. M. S. Corey of Fredonia, N. Y., died May 26, at the age of 81 years. He was born in Islip, L. I., and studied medicine at the University of Buffalo. He retired from practice sixteen years ago.

Dr. R. H. Faunce of Sandwich, Mass., died of apoplexy on May 25, at the age of 49 years. He was a graduate of Harvard Medical School in the class of 1882. He was medical examiner for the Cape Cod District. He was a victim of overwork, as it was said of him that only once during the past twenty-three years had he been away from his office overnight.

Dr. R. B. Struthers of Sudbury, Ont., died suddenly May 14, at the age of 50 years. He was a graduate in medicine of McGill University in 1888.

Dr. Oliver J. Beach of Granby, Conn., died May 15 of tuberculosis, at the age of 35 years. He was a graduate of Jefferson Medical College, Philadelphia, in the class of 1900.

Dr. Charles Carrington of Farmington, Conn., died on May 20, at the age of 69 years. He was a graduate of the College of Physicians and Surgeons, New York City, in the class of 1860.

Correspondence.

GRAPHIC EXPRESSION OF THE PHYSICAL STATE.

To the Editor of The Medical Record:

Sir:—I write to ask if it is possible to express numerically the physical condition of a child under one year of age. My reason in doing so is to determine the feasibility of a chart on which the physical progress of babies brought to milk depots which the New York Milk Committee intends to open June 15 may be graphically expressed. This chart, like a weight chart, would be divided horizontally into weeks and days but would run vertically from zero or death to 100 or perfect health. A baby brought to the depot in a dangerous condition would be placed close to the bottom of the chart, near death. If it improved ever so slightly the line would rise and the mother, taking courage, would renew her efforts in its behalf. On the other hand a sudden drop of the line from good, fair, or perfect would alarm the mother who would thus see, if the fault was one of improper care or feeding, how important was her duty to her child.

I can see no reason why conditions capable of comparison cannot be more accurately expressed by numbers than by words. This fact is recognized when, instead of saying "a pulse is high," "a temperature low," "a man is heavy," or "an arm is long," we express these degrees in figures, thus conveying to hundredths and even thousandths the precise idea in our minds. "Perfect," "splendid," "good," "fair," "poor," "bad," "dangerous," "hopeless," as applied to health are all terms of comparison just as are "high," "low," "heavy," "long" as compared to pulse, temperature, weight, and length. Yet who is able to say absolutely what is meant by "fair health" or "good health," by "bad health" or "very poor health?" The answers to these questions necessarily are lengthy and involved; and they rarely suggest the same thing to different individuals.

I should be greatly interested in knowing whether an infant's score card could not be devised which, by a careful and scientific analysis, arranged in such detail as to minimize the possibility of wrong judgment, would give mothers some definite idea of the position occupied by their babies on the scale ranging from death to perfect health.

Wilbur C. Phillips,
Secretary N. Y. Milk Com. of the New York Association for Improving the Condition of the Poor.

EARLY USE OF TUBERCULIN BY THE NON-FEBRILE METHOD.

To the Editor of the Medical Record:

Sir:—Nearly seventeen years ago I returned from Berlin impressed with the definite value of tuberculin as a curative agent, at the same time satisfied that some error must exist in the method of administration to account for its destructive results in many instances.

Experiments were begun at Alicia Hospital, St. Augustine, January 27, 1891, a few weeks after the announcement of Koch's discovery, and these were reported in the Medical Record on October 17 of the same year. The following conclusions were announced: (1) The dose of tuberculin is a widely varying quantity, to be determined, with its rate of increase for each case, only by direct experiment. (2) The only therapeutic dose is such a quantity as arouses no reactive temperature, every reactive fever being the expression of an overdose, that is, a poisonous dose. (3) Tuberculin, when successful by fever reactive method, is so despite, not by virtue of, reactions. (4) Tuberculin by non-reactive method acts as a powerful upbuilding alterative to the tuberculous subject. (5) Patients in all stages of tuberculosis may be treated by nonreactive method without danger.

Under the title "Radical Change in the Application of Koch's Lymph Attended by Marked Success, Fever Reactions Prevented," I detailed the effects of tuberculin, freed from the results of purposely induced fevers. These experiments may have been the first conducted with a definite plan to employ such dosage as, though rising, would avoid fever reactions. Successful treatment at that time was inaugurated on the only lines which have finally found favor among expert workers, whose conclusions, converging from the paths of bacteriology and clinical study, are now universally accepted. The employment of tuberculin in some of its forms, under safe dosage, guarded by clinical evidence, as originally practised by myself, has in recent years been advocated by Trudeau; guarded by observation of the opsonic index, it has proved of value in the hands of Wright and his pupils.

I quote from the above mentioned article: "Observation of numerous cases in Berlin, and especially a study of those in the wards of Leyden at the Charité, to which free access was granted me at all hours, led me to conclude, first, that when treated with tuberculin some cases, though in proportion few, made a definite and continued improvement in general physical conditions, in character of cough, and amount of expectoration; second, that weak men and nearly all women progressed unfavorably. Those cases which ultimately gained lost weight during the first week or two weeks of treatment. Such cases were usually men of great native vigor. Of women, who are especially susceptible to tuberculin-induced fevers, among fifty cases but one was improving in the wards of Senator, nearly the whole number were rapidly fading away, their reactive fevers tending to become continuous as treatment progressed. At Friedrichshain the one hundred charts examined showed that no women with pulmonary forms were improving. Similar results were obtained in the wards of Gerhardt and von Bergmann, and at Moabit Hospital the successful cases shown were men. Among all these cases earlier stages of the disease were numerically well represented, but the induced fevers were exhausting and ruinous to all alike. Of the disturbing or dangerous effects upon the local lesion, I spoke in my Berlin communication to the Medical Record of January 3. Although small doses have been mentioned by various writers, they have been employed with the full purpose of obtaining fever reactions, and have been increased until these were achieved. American observers who have been unsuccessful and have discontinued the treatment have invariably stated that characteristic reactions were obtained. The entire absence of uniformity in results with incipient cases in the hands of all operators, and the uncertainty manifested by all as to the class among incipient cases in which success might be expected, suggested a possible error, not in the constitution of the remedy, but in its method of administration, which hitherto has not been adapted to obtain the fullest therapeutic effects with the least expenditure of energy. To produce every second day the ultra-physiological action of tuberculin, as exhibited in fever reactions, disturbs the general equilibrium and disarranges nervous, digestive, and secretory functions, upon whose very quietude and uninterrupted activity substantial improvement is of necessity based. To employ any medicinal agent on a plan so irrational as that on which Koch's lymph has been used would condemn our most powerful and valuable drugs, and, as in the case of tuberculin, soon discourage both patient and physician. Since the proportion of improved cases in foreign and American hospitals was too small, the risk of the venture under the usual methods too great, I determined at the commencement of experiments at Alicia Hospital, St. Augustine, on January 27, to adopt a plan, not as I am aware until the present time suggested by any observer; namely, to maintain the doses of tuberculin

uniformly below the fever reaction line, proposing to employ such increasing dosage as may be borne by each individual without fever, its pain, mental depression, loss of appetite, and wasting of flesh; thus, perhaps, to escape renewed congestions in the diseased lung areas, and especially to retain general conditions for the patient as favorable, at least, as previous to treatment. Results of this plan are shown in the following notes of all cases treated at Alicia Hospital, taken from the records of this institution. Incipient and advanced cases have been treated. I have endeavored in every instance, although gradually increasing the dose, to retain normal temperature. Women and delicate men in any stage are especially susceptible to the tuberculin fevers, hence the dose has been adapted to their condition. Individuals in apparently the same stage and physical state vary greatly in their resistance to induced fevers. The decided influence which this remedy has exerted in my hands under the gentle, steady pressure of nonreactive doses, has been analogous to that of the iodides—an alterative of well-established power."

FOREIGN BODY IN THE URETHRA.

To the Editor of the Medical Record:

Sir:—Apropos of a recent article in your journal of impaction of a catheter in urethra, I beg to report another case in which a piece of rubber catheter was retained in the urethra, having broken off about two inches from meatus. The catheter, on account of large size, was thoroughly wedged in the canal and could not be manipulated one way or the other. The tip was in the perineum, but could not be moved by pressure in rectum; after a while I succeeded in grasping the end in the anterior urethra, but the catheter was thoroughly rotten and the end broke off in the bite of the forceps. While debating what would be the next move to accomplish its removal I asked the patient if he had urinated since its impaction. He answered in the negative. I then asked him to see if it was possible. After a few minutes' trial, to the relief of myself and patient the catheter was forcibly ejected from the urethra with the stream of urine. The patient, who was about fifty years of age, said he had passed the catheter on account of enlarged prostate and had frequently done the same before. Including half an inch broken off by the forceps, the original length of the piece of catheter was about 5½ inches.

Ernest McNeill, M.D.
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OUR LONDON LETTER.

(From Our Special Correspondent.)

ROYAL SOCIETY'S CONVERSAZIONE—CANCER RESEARCH—INFLUENCE OF PREGNANCY ON DISEASES—SURGICAL VIEW OF ADVANCES IN SYPHILIS—CURIOUS MYOMATOUS UTERUS—DEFENCE OF RESEARCH—OBITUARY.

London, May 15, 1908.

The Annual Conversazione of the Royal Society was held on Wednesday evening. The exhibits were as numerous and interesting as usual, illustrating the results of the year's scientific researches. Not a few appeal mostly to the pure scientist, though others have an interest for the educated public. First from a medical point of view must be reckoned the collection of the Imperial Cancer Research Fund. A series of drawings, microphotographs, and specimens illustrated the experimental study of cancer in animals which has been specially pursued by the fund during the year, and affords evidence that the course of the disease in animals is parallel to that in man. The identity in character of cancer in the skin was shown by specimens from man, bird, frog, and fish. There were fifty-two items devoted to showing in the mouse the lesions characterizing cancer in man. There were records of excisions of cancerous tumors in mice showing that there may be no recurrence for the remainder of the life of the animals. But other records were also given showing that this event is exceptional and recurrence the general rule. But research seems now to have proved that spontaneous disappearance of cancer in animals may take place. Evidence of this was exhibited as to both primary and secondary growths. Charts of a series of experiments illustrated the development of secondary growths and the possibility of preventing that development, raising the hope that we may soon be able to secure patients against the recurrence. Some of the data obtained from hospitals at home and abroad have been set out in tabular form. Photographs of savages suffering from cancer showed the disease in races remote from the influences of civilization.

Another striking exhibit was a display of 100 different types of the plumage of grouse, the object being to establish types of these birds in order to discover whether one is more liable to "grouse disease" than another. Other exhibits afforded abundant material for comment, did space permit.

The influence of pregnancy on various diseases and of these diseases on pregnancy constituted the subject of the Goulstonian Lectures this year, which were delivered by Dr. Herbert French. As a question which has been much discussed, I take the influence of appendicitis on pregnancy and vice versa as an illustration of the lecturer's views. He considers it would be an excellent subject for collective investigation, as that would take in the milder as well as the more severe cases, whereas at present the most striking ones are reported while the milder ones remain in the background. Consequently the severity of appendicitis during pregnancy may be exaggerated. Nevertheless, those who have seen most of the complication regard it as increasing the danger. It may occur at any period of the pregnancy and may be of all degrees of severity, from transient appendicular colic to acute fulminating attacks, rapidly fatal. In mild, early attacks complete subsidence may occur, but owing to increased blood supply and the congestion of the parts due to pressure of the enlarging uterus an unusually rapid course is general, which, if the pregnancy is advanced, will be likely to go on to suppuration. The danger to the mother does not cease with the opening of the abscess, for even after drainage septic salpingitis or endometritis may come on with liability to extension. When pus forms in the later months a miscarriage is almost certain, whether any operation be performed or not, and even when pus is not proved to have formed a similar result is common. This is not surprising, considering that the uterus is almost sure to be in contact with the inflamed tissues and may even form part of the wall of an abscess. It would therefore appear that operation should be accelerated rather than postponed in these cases. There are, of course, mild cases in which it may be better to wait. But those in the next degree of severity, where in the absence of pregnancy waiting might be advised, should be operated on. The prospect of the child is so poor that the interest of the mother only should be considered and spontaneous miscarriage or premature labor is so likely to take place and with it the rending open of the previously localized inflammation and spread to the general peritoneal cavity that it is dangerous to delay. Further, it is to the last degree undesirable that obstetric measures for terminating the pregnancy should be resorted to for fear of breaking down adhesions that are helping to localize the appendicitis. At the same time it may be said that in case of appendicitis of any severity in a pregnant woman the best chance of saving both mother and child is in early operation.

The Medical Society of London, which, as you know, declined to join in the amalgamation and so become a section in the Royal Society of Medicine, continues its career much as previously. There are a few of the Fellows who rather regret the decision and are ready to reconsider it, but, considering all the circumstances, it is doubtful if the majority are prepared for any change. As the oldest society and one that was a general favorite, its prestige is great. That it still commands excellent papers is obvious enough, and there seems room for its work as well as that of one or two others that continue an independent course.

On Monday, Mr. D'Arcy Power gave us a paper on "Recent Advances in the Surgical Knowledge and Treatment of Syphilis." He pointed out that advances in physics, such as the discovery of the Roentgen rays, had proved of great value in the diagnosis and treatment of bone and joint cases. Then histology has enabled us to classify cases of white swelling as tuberculosis or gummatous. The modern view seems to be that in some cases a gummatous synovotis is really a tuberculous inflammation infecting the joint in a subject of inherited syphilis. It is now necessary to recognize intermediate cases due to microbic infection of tissues which have been modified by the spirochæta pallida, whether acquired or inherited. Pneumococcus and staphylococcus also invade such tissues, and influenza may set up arthritis which has a gummatous character in these patients. The *x*-rays help us distinguish osteitis and arthritis due to syphilis from analogous lesions produced by tubercle or rheumatism. The rays have also taught us that syphilitic inflammation of bones may begin much later than had been supposed.

The advances in treatment have been, firstly, a firm belief in the power of mercury, when properly administered, to cure the disease, not merely disguise symptoms. Secondly, a clear understanding of the use of iodides. The tissues cannot rid themselves of large masses of syphilitic products, and it is best, therefore, to remove them by surgery and not expect them to be absorbed. Iodides may then be given with good results, but should always be followed by a mercurial course.

At the Irish Academy last month Sir W. Smyly showed a myomatous uterus, the interest of it being entirely technical. On examining the patient he could not reach the cervix owing to the extraperitoneal development of the tumor on the right side of the uterus. On operating he took the end of the tumor to be the cervix; there was a depression in it which he took for the os. When he cut into the capsule there came a good deal of blood, which surprised him. When he got it open enough he found he was in the capsule of the tumor and had not opened the vagina at all. He completed the operation—Doyen's—in the usual way. The tumor was in the long axis of the uterus, and there was little wonder he mistook it. Sir A. V. Macan said he was present at the operation and corroborated the difficulty of locating the cervix. Prof. Alfred Smith approved the procedure. With these eminent leaders thus deceived by the unusual conditions, less experienced men may be glad not to have had such a case.

The foundation of the Research Defense Society has produced a panic among the antivivisectionists. That may be a favorable augury. On Tuesday a demonstration was got up against the new society. Sir George Kekewich, M.P., took the chair, and his speech will scarcely add to his reputation. He declared that "vivisection was a horrible and degrading cult, a pseudo-science which the doctors reveled in because they had got inured to that kind of cruelty." Sir George poses as an educationist, and set this example of free speech. I commend to his study the seven abominations enumerated in the sixth chapter of Proverbs.

Dr. C. J. Cullingworth, Consulting Obstetric Physician, St. Thomas' Hospital, died on the 11th inst. in his 67th year. A Leeds student, he qualified in 1865-6. In 1878 he became a member of the London College of Physicians and was elected a Fellow in 1887. Meantime he had taken M.D., Durham, 1881, and in 1893 that university conferred on him the honorary D.C.L. He had been Professor of Obstetrics and Gynecology at Manchester, Physician to St. Mary's Hospital there, and Examiner in the University. He came to London about twenty years ago as Obstetric Physician to St. Thomas' Hospital. Here he was soon recognized as a consultant to be trusted, and his death will be regretted both here and in Manchester. He contributed careful papers to the Hospital Reports as well as other journals. He also contributed to Allbutt & Playfair's "System of Gynecology."

The death occurred on Thursday, the 7th inst., of J. A. Balmanno Squire, at the age of 71. He was for many years Surgeon to the British Hospital for Skin Diseases and had lectured on the specialty at St. Mary's Hospital and written much upon it. He was a university college student and took the London M.B. with the gold medal in 1862. He wrote the article on "Diseases of the Skin" in Reynold's "System of Medicine" and contributed extensively to the journals and societies. You will, no doubt, remember his "Atlas of Colored Photographs" of Skin diseases. His "Manual of Diseases of the Skin" was also a successful work.

Dr. Gramshaw, of York, died on the 7th inst., aged 54. The day before he was found unconscious in his room from the effects of morphia, which he seems to have injected himself. He became partially conscious, but afterwards collapsed, apparently from pulmonary complication. He qualified in 1878, took M. D. Stand. 1896, and F.R.C.S., Eng., in 1903. He first qualified in Pennsylvania and came to England afterwards and took British diplomas.

OUR PARIS LETTER.

(From Our Special Correspondent.)

CALCULI OF THE URETER—URETERAL ANASTOMOSIS—RADIOGRAPHY OF THE STOMACH—THE TREATMENT OF NEVI.

PARIS, May 1, 1908.

An interesting discussion on the subject of ureteral calculi was held at a recent meeting of the Société de Chirurgie. Rochard began by pointing out the errors that might arise from the use of radiography in such cases. He had caused a radiograph to be made in the case of a woman of sixty-seven, suffering from an arthritis of the hip. The picture showed obliquity of the pelvis and a deformity of the large trochanter, but there was also to be seen a linear shadow at the brim of the pelvis on the left side, which was ascribed to a calculus in the ureter. Vaginal examination and abdominal palpation were negative, while catheterization of the ureter performed by Luys demonstrated that this structure was entirely free from any obstruction throughout its entire length. The shadow on the radiographic plate, therefore, could not be due to a stone and was probably caused by the atheromatous condition of the iliac artery. A radiograph of the arms showed that the brachial artery was plainly visible, thus proving that the supposition was true.

Following this paper Georges Luys reported several observations, showing that, while the radiograph sometimes appears to show ureteral stones which do not exist, on the other hand, actual calculi may not appear on the negative. A man of thirty-nine years, who for about nine years had suffered from attacks of renal colic, sometimes on the right, sometimes on the left side, was subjected to catheterization of the left ureter after a particularly severe seizure of pain on this side, lasting several hours. In performing the operation Luys was able to distinguish very clearly a grating contact of the ureteral bougie which indicated the presence of a stone in this tube. The patient was then sent to a radiographer, who reported that there was no evidence of the presence of any stone in the ureter. Four days later, after an exceedingly painful attack, the patient passed two stones, as large as beans. The patient was seen several days later and the left ureter was again catheterized, but with negative result. The stones were then examined with the fluoroscope and were distinctly seen. The failure to perceive them on the photographic plate was therefore not due to their chemical composition.

Lucien Picqué then reported a case in which a patient had been radiographed after a series of attacks of renal colic. The negatives showed the presence of concretions apparently, in the ureter. Laparotomy was done twice, first on the right side, then on the left, but no stones were found.

Prof. Pozzi then described an interesting operation on a woman having a ureteral calculus which was removed by extraperitoneal laparotomy. For more than six years the patient had suffered from pain in the right iliac fossa, radiating to the lumbar region of the same side and coming on in acute spasms. By vaginal examination and by means of the Roentgen rays the diagnosis of a stone in the right ureter was made. Pozzi then invited Luys to examine the patient. With his direct vision cystoscope the latter catheterized the right ureter and found that the ureteral bougie was stopped 2 cm. from the mouth of the ureter. Progressive dilatation of the ureter was practised with instruments of increasing sizes and in this way it was possible to obtain distinct contact with the stone. Then two laminaria tents were introduced and kept in position for twenty-four hours each. The attempt was then made to remove the stone by means of delicate forceps, but this was unsuccessful, and as it was evident that the stone was impacted, a bloody operation was decided on. This Pozzi effected by a lateral extraperitoneal laparotomy. The ureter was exposed and incised over the stone, but the removal of the concretion was difficult owing to the fact that it was very adherent to the interior of the ureter. A month later the patient left her bed completely cured. Luys then made an examination by means of his urinary separator in order to determine the functional efficiency of the right kidney. It was seen that the amount of urine secreted by the right kidney was now double that of the left side. Whereas, before the operation only one-half c.c. was passed in from thirty-five to forty-five minutes, the amount was now 17 c.c. The secretion from the kidney of the left side remained the same as before. The kidney on the side operated on was therefore stimulated to increased activity as the result of the operation.

At the same session of the society, Prof. Pozzi also presented an interesting case, showing the excellent functional result of a ureteral anastomosis done twenty-one months before. The patient was a woman who was subjected to complete abdominal hysterectomy for a very adherent pyosalpinx. In the course of the operation the right ureter was cut, but was at once repaired by end-to-end anastomosis. The patient recovered completely, and the good result of the operation was proved by separation of the urine performed by Luys twenty-one months later.

Leven and Barrett before the Société Médicale des Hôpitaux read a paper in which they showed that Roentgen ray examination of the stomach often enabled the diagnosis of carcinoma to be made when there was no other evidence of the condition, or to eliminate this possibility when its presence was suspected. This assertion has been proved both by autopsies and surgical operations. They described the case of a patient who gained three kilograms in weight in three weeks and had no stomach symptoms, but in whom radioscopic examination suggested the diagnosis of carcinoma, which was verified at an autopsy two months later.

Masotti has described the treatment of nevi by means of radium. He commenced by trying on himself the apparatus which he subsequently used on his patients, and ascertained that in applying radium for therapeutic purposes it is necessary to take into consideration the pressure exerted by the apparatus used, the initial activity of the radium, its weight, the manner in which it is diluted, the date of its manufacture, the thickness of the screens, the temperature, and the moisture of the air. He then showed plaster casts showing the condition of the lesions before the treatment. It was seen that this had produced a remarkable improvement, the pigmentation of the skin being greatly reduced, while the scars were perfectly satisfactory from the cosmetic standpoint. Masotti also described a new plan of treatment for various pigmentations of the skin, such as chloasma, by means of scarification and the application of peroxide of hydrogen. At intervals of five days the lesion is scarified by means of shallow and very numerous incisions, and is then washed with peroxide of hydrogen. The next day an erythema appears, which several days later is followed by moderate desquamation. Three or four treatments usually cause complete disappearance of the spot. The result is due to a double action. The scarification incites a prompt renewal of the epidermis, while the peroxide of hydrogen is enabled to come into direct contact with the tissues and so decolorizes the pigment directly.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

SERUM DIAGNOSIS OF SYPHILIS—MEDICAL STUDY IN GERMANY —INFLUENZA IN BERLIN—QUACKERY IN GERMANY.

BERLIN, April 25, 1908.

AN interesting debate on the serum diagnosis of syphilis has been held by the Medical Society. Although there is danger that the reader may be wearied by the frequent discussion of the subject, what was said on this occasion deserves mention because a number of eminent observers took part. The theory and practice of serum diagnosis of syphilis was discussed by Fleischmann. He had found that the active substance obtained from syphilitic livers was soluble in alcohol and that the chief agent in the reaction was combined with lecithin. Alcoholic extracts of such livers could be used for the fixation experiments as well as the salt solution extracts ordinarily employed. If a lecithin emulsion was used instead of the liver extract, fixation would be obtained, but it was much weaker. Cholesterin and vaselin also caused fixation of the complement with luetic serum to a rather greater extent than lecithin. Nonluetic human sera do not react with these lipoid substances, but rabbit serum does. Nine hundred control cases have been described in the literature, and only six gave a positive reaction. Of 160 cases examined 73 per cent. were positive. Concerning the details of the examination a few practical points might be mentioned. If the reaction is positive, specific treatment should be begun. Absence of the reaction does not indicate a cure. Of eighteen tabetics, of whom sixteen had a history of syphilis, only thirteen showed fixation of the complement. The most pronounced reaction is to be found in cases in which no specific treatment has been employed. The method is especially useful in cases with a doubtful history, and if the reaction is positive syphilis is surely present. On the other hand, if it is negative the disease cannot be excluded with certainty.

Blaschko followed with a paper on the same subject. He had set out to determine whether a positive reaction indicated that the patient was or had been diseased. In order to ascertain what became of the syphilitics, a search was made through the records of the large life insurance companies. It was found that one-third of the syphilitics die of the consequences of the disease. The mortality records show that the proportion of syphilitics to non-syphilitics in cases of disease of the spinal cord is as 667:100, in paralysis 500:100, in psychoses 145:100, in apoplexy 228:100, in renal diseases 164:100, in circulatory disorders 200:100. The result of the reaction indicates nothing concerning the severity of the infection, for a positive test may be obtained in mild cases and a negative result in severe ones.

Citron spoke of the significance of modern syphilis investigations. As the result of his experience he advised beginning specific treatment in the first stage if the reaction was positive. Furthermore, later on, whenever the reaction was positive, a new course of treatment should be begun.

In the discussion Sachs and Altmann, from Ehrlich's Institute in Frankfort, stated that of all the methods, those originally described by Wassermann had remained the most satisfactory. This observer continued of the opinion that reliable results were to be obtained only by means of the method of fixation of the complement, for it alone had never given positive results when syphilis was not present. Neisser of Breslau described the results obtained by Bruck on a large number of monkeys in Java. The lower monkeys normally possessed antibodies against syphilis, which are absent in the higher apes. On infection these appear before the development of the primary lesion. The demonstration of the antigen is very difficult, but may be facilitated by heating the organs to 55°. The quantity of antigen does not correspond to the course of the disease, and it could be demonstrated in animals that were infected without result. His attempts to devise a cutaneous or conjunctival reaction in man had been unsuccessful. Karewsky described surgical cases, particularly those of bone syphilis, in which the method of fixation of the complement had been found very useful from the diagnostic standpoint. Proskauer had found the procedure serviceable after death in certain cases in order to clear up the diagnosis. Ledermann assumed that the reaction would be positive for only about five years in cases which had been well treated. It was going too far to base consent for marriage on the result of the reaction. Mühsam had shown that in cases that had been treated with mercury the reaction could be less frequently obtained than when potassium iodide was used.

For a while it seemed as if, thanks to the dissemination of knowledge concerning the incomes of medical men, the number of medical students in Germany had begun to decrease. The latest figures show, however, that the increase in the number of students and of physicians is constant. In the summer session of 1907, there were 7,574 medical students in Germany, while in the year 1906 there were only 6,570. The number of physicians during the same period has increased from 30,931 to 31,416. In Berlin there are for every ten thousand inhabitants 11.7 physicians; in the other large cities there are 9.5; in cities with a population between ten and fifty thousand, 7, and in communities of less than ten thousand inhabitants, 2.9. The largest proportion is in Wiesbaden, where there are 25.4 physicians per ten thousand inhabitants. Munich comes next with 15.9, Frankfort with 12.1, Stuttgart with 10.4, Cologne 9.6, and Hamburg 7.7. The number of specialists is very large in the more important cities. In Dresden it is 44.6 per cent.; in Frankfort 43.2 per cent., and in Munich 38.7 per cent. of the total number of medical men.

During January and February, the physicians of Berlin were busily employed, for influenza with its sequelæ was unusually widespread during this period. How little the incomes of Berlin physicians fluctuate, however, is shown by the recently published figures of the Aerztekammer. According to these in the year 1907 20.4 per cent. of the physicians still had an income of less than 3,000 marks, and 41.4 per cent. of less than 5,000 marks.

Quackery is widespread throughout the entire world, but there are districts in Germany, particularly in Saxony, which are hard to equal in their number of illegal practitioners. The increase in this pest took its origin when general freedom of occupation was made legal in Germany. Since that time every one who felt himself inclined was permitted to practise the healing art, while the physician was allowed to do this only after the authorities had investigated his qualifications. For years the German physicians have attempted to induce the government to restrict this freedom of the right to treat disease. Recently a preliminary plan of legislation has been made public by the government, which does not meet the wishes of the medical profession, but includes a number of restrictions capable of abolishing the most serious abuses. According to this,

every one who intends to engage in the treatment of disease must register with the authorities. He is compelled to maintain an accurate system of bookkeeping, and treatment by letter is forbidden. This occupation is prohibited to all of those who have been convicted of any offense, as well as to those who are likely to prove dangerous to the life or health of their patients. Venereal diseases cannot be treated at all, and preparations for their cure or for the prevention of conception must not be advertised. Other remedies which might lead to damage to the health or involve deception of the users may be prohibited on the advice of a commission founded for this purpose, and the composition of all remedies must in all cases be exactly indicated. In the year 1903 the number of nonregistered practitioners in Germany was estimated as 10,000. From 1888 to 1901 1,724,000 books having a value of fourteen and a half millions of marks, written by persons of this type, were sold. A single quack has disposed of more than a million copies of his book. Over 50,000 periodicals are circulated. One quack for a time had over 800 patients daily who paid three marks per consultation.

THE GERMAN SURGICAL CONGRESS.

(From Our Special Correspondent.)

(*Concluded from page 912.*)

HERNIA—SURGICAL ANATOMY OF THE GALL-DUCTS—PATHOLOGY OF GALLSTONES — PROSTATECTOMY — FETAL PERITONITIS — RENAL CALCULI—SUTURE IN URETHRAL TEARS—PROGNOSIS OF DISLOCATION—BLOODY REDUCTION OF OLD DISLOCATION OF THE ELBOW—COXA VALGA—EXPERIMENTAL JOINT-MICE—AMBULATORY TREATMENT OF FRACTURES OF THE UPPER EXTREMITY.

VIENNA, May 9, 1908

THE fourth day of the meeting of the German Surgical Association was opened with a paper by Schlosser of Innsbruck on "Chronic Inflammatory Tumors After Operations for Hernia." It has been noticed that after operations for hernia, with primary healing of the operation wound, a painless swelling unaccompanied with fever appeared in some cases in the right lower abdominal region. Operations in such cases showed the presence of connective tissue with occasional suppurative foci. As in all cases observed up to the present time silk was used in the primary operation, these "tumors" could be explained by the inflammatory processes going on in the tissues and having for their aim the discharge of the offending foreign body. Treatment of this condition should consist of antiphlogistic measures, and the evacuation of pus in the cases where it makes its appearance.

Brenner of Linz presented his "Method of Operation in Umbilical Hernia with the Use of Double Flaps." His procedure consists in freeing the inner portion of the aponeurosis of the recti muscles so that on each side of the umbilical ring a crescentic flap of aponeurotic tissue is present. The free edge of each of these flaps is then pulled over to the other side and is sewn on to the edge of the rectus muscle of that side. In this manner the hernial opening is closed by a double fold of connective tissue.

Ruge of Berlin spoke of "The Surgical Anatomy of the Gall-ducts." In the anatomical examination of the gall-ducts the author of the paper has discovered abnormalities in the course of the cystic and the hepatic ducts, which were very important from the standpoint of practical surgery. Of the forty-three cases examined only in fourteen was there found the acute angled junction of the cystic and hepatic duct which is usually described as typical. In nine cases the cystic duct was found to be firmly united to the hepatic duct for a considerable portion of its course. If in such a case the attempt is made to pass a sound through the hepatic duct by way of the cystic duct, the latter must be opened for the whole length of its course before the mouth of the hepatic duct is discovered. In sixteen cases the cystic duct ran as a sling about the hepatic duct and only then opened into the latter. In such a case pulling upon the cystic duct obliterated the lumen of the hepatic duct, thus simulating a stenosis of the latter.

Exner and Hejrovsky of Vienna spoke on "The Pathology of Gallstones." They added salts of the bile acids to the bouillon cultures and then inoculated the cultures with various bacteria. It appeared that the typhoid and the colon bacilli decomposed these salts. Such decomposition would lead to the precipitation of cholesterin, which is held in solution by the presence of the salts. Partial precipitation of the salts could lead to the precipitation of some cholesterin, likewise, thus giving rise to the formation of gallstones.

Wilms of Basel read a paper on "The Technique of Prostatectomy" and recommended a useful modification of the usual technique. The skin is incised close to the ascending ramus of the pubic bone. The loose fatty tissue is pushed out of the way and the prostate appears immediately in sight. It is then shelled out by dull dissection, this procedure taking no more time than the removal of the prostate by the suprapubic route. In addition to the rapidity of the operation it possesses the further advantage that the rectum does not come into the operative field. In the discussion that followed this paper Ehrhardt of Königsberg spoke on the operative treatment of carcinoma of the prostate. He said that up to the present time it has been assumed that a very rapid appearance of metastases takes place in the carcinoma of the prostate, and this assumption made the surgeons quite unwilling to operate in most cases of this disease. The speaker believes that operations in such cases should be more frequently performed. His operative technique consists of making very large T-shaped incision through the skin of the perineum reaching up to the scrotum.

Peiser of Breslau read a paper on "Fetal Peritonitis." He said that the diagnosis of fetal peritonitis cannot be finally made. The possibility must enter the surgeon's mind when symptoms of intestinal obstruction appear in the newborn or in older children. As such peritonitis makes itself evident in localized places only, therapeutic interference is possible. Up to the present time only one case has been observed by the speaker in which masses of fibrous bands were found in the abdomen and yet the patient recovered. All other cases observed by the author or described in literature ended fatally.

The next paper was on "The Diagnosis of and Operation for Stones of the Kidney" by Zuckerkandl of Vienna. He distinguished between encapsulated and free stones of the kidney, and said that the favorite spot for their location is the junction of the renal pelvis with the ureter. The encapsulated stones show upon the *x*-ray plate furrows made by the kidney calices, or they give an uneven shadow directed downward. The free stones give round shadows upon the plates; these stones usually lie in cavities which have been formed in the substance of the kidney. A ureter sound filled with bismuth gives on the picture the place where it strikes the stone. As far as treatment is concerned, the speaker expressed himself against nephrotomy because in such cases a great deal of necrosis takes place and large portions of the kidney are lost. In place of nephrotomy, therefore, in most cases of stones of the kidney pyelotomy ought to be done. The operative wound of the kidney pelvis is drained for fourteen days. Of seventeen patients operated upon in this manner sixteen recovered without the formation of fistula.

Pels-Leusden of Berlin then considered the necessity of a circular suture in cases of tears of the urethra near the perineum. The speaker thinks that such suture is not always necessary and simple junction of the stumps by means of a few sutures is sufficient. The latter procedure is improved by splitting the stumps a little in the longitudinal direction, which produces surfaces that are easily united by three or four sutures. Experiments on dogs have shown that a canal is formed in such cases without the formation of fistula. A permanent catheter is not considered necessary by the author. The technique of the operation is given completely in the textbook of Koenig.

In the afternoon Küttner of Breslau read a paper on "The Prognosis of Traumatic Dislocations." Of 160 cases of fresh dislocations 54 simple uncomplicated cases were followed for many years; 63 per cent. of the patients were over 50 years old. Only seven of the 54 showed complete recovery from the injury, while 14 showed loss of power in the extremity. All the others showed considerable interference with the motions of the extremities, suffered some pain, and lost much power in using the affected parts. The conclusion is, therefore, that two-thirds of the recent uncomplicated injuries of this character, though treated in the best accepted manner, showed unsatisfactory results. The after-treatment in all these cases was thoroughly carried out.

Dolliger of Budapest then discussed "The Bloody Reduction of Old Dislocations of the Elbow." He had treated thirty-four old cases of such injury. In all of them arthrotomy was done and then the conclusion was reached in reference to the treatment of the given case, the advisability of reduction or of resection being considered each time. In fourteen cases resection was

performed, nine of them healed by primary union; in six cases the joints remained stiff, in four their motions were limited, in one case complete recovery ensued. In twenty cases reduction was performed, being preceded by an incision on the outer side of the joint. In twelve patients useful joints resulted from this procedure. Three patients remained with stiff joints, and of the rest, nine had movable joints. Of the latter only three showed complete range of motion, though the rest commanded quite a range of movement. Accordingly the possibility of the reduction of the bones is to be thought of in every such case.

Stieda of Königsberg spoke on "Coxa Valga of Adults," two cases of which he has observed. In such cases, when the patient is lying on his back, outward rotation is observed and flexion is limited. In walking, the limb is held fairly stiff. The *x*-ray picture shows great increase in the angle of the neck of the femur, and the small trochanter is very prominent. The latter appearance is caused by the fact that the femur has rotated forward, thus bringing the trochanter forward with it. The treatment consisted in sparing the limb, proper exercise, and massage. The results were satisfactory.

Becker of Rostock read a paper on "Experimental Joint Mouse." He detached a small piece of the epicondyle in the joint of the dog; months afterward the presence of a joint mouse in that joint was established, this being the first successful case of producing this condition by experiment. In all other attempts the piece of detached tissue either disappeared or became attached somewhere in the joint.

"Ambulatory and Extension Treatment of Fracture of the Upper Extremity" was the subject of the next paper by Borchgrevink of Christiana. He used apparatus in which traction was made by means of rubber tubes. The splint for the upper arm contained a fork-like attachment which fitted into the axilla and gave the point of support for traction. The splint for use in the affections of the forearm contained a perpendicular piece which was fastened to the upper arm and thus gave a firm point for the traction exercised upon the forearm. These splints were used in the practice of the author for ten years and the results were better than in the case of all other apparatus and methods of treatment.

Progress of Medical Science.

Boston Medical and Surgical Journal, May 21, 1908.

Varicose Veins of the Papilla of the Kidney a Cause for Persistent Hematuria.—W. F. Whitney reports the case of a middle-aged man with a history of repeated attacks of hematuria lasting over a considerable period of time. Examination by modern methods as well as in the usual clinical way revealed no cause for the trouble until finally bloody urine was observed coming from one ureter. The corresponding kidney was removed. It appeared pale but otherwise normal. The tips of one or two of the papillæ were a little reddened and under the microscope these tips showed the small veins, dilated irregularly to twice or three times their normal size, and covered on their free surface with the finest possible film of connective tissue and a single layer of epithelial cells. Here and there they projected as varicose knuckles above the surface. The conditions, in fact, were such that the slightest violence must have caused a rupture with subsequent escape of blood. In one specimen a rent was found in one of these thin-walled channels, but it cannot be stated positively that it may not have been an artefact. The lumen of the vessels, in many places, was filled with a finely granular detritus and occasional blood corpuscles, but no well-marked thrombi were seen. That hemorrhage must have taken place here, however, is borne out by the fact that the straight tubules of this region contained blood corpuscles, which were not found higher than the base of the pyramid. Whitney says that these anatomical conditions are certainly adequate to cause frequent and severe hemorrhage. He gives summarized histories of a group of similar cases reported by Jennick, together with pathological findings. While the entire number of such observations is still small, it will be necessary in the future to exclude a varicose condition of the renal papilla before it can be said that a hematuria is without cause.

Certain Common Disorders Frequently Misinterpreted.—G. L. Walton presents an interesting paper along the line suggested by his title. He notes, among other things, that the term facial neuralgia gives as a rule very little clue to the real nature of the malady. Cases of supraorbital pain with a certain periodicity are called malarial, and quinine is given, but without avail, as the trouble is due to an infection of some accessory nasal sinus. In fact, the diagnosis of facial neuralgia has come to mean very little to the author except in case of elderly people, whose nerves have become degenerated by atheroma, in which case a true nerve pain, tic douloureux, does exist, paroxysmal, severe, and, as a rule, only to be relieved by operation. He is forced to the conclusion that by far the greater number of facial neuralgias in young and middle-aged persons come from the eye, the ear, the nasal cavity, and accessory sinuses, from the teeth, or skeletal disorders, such as necrosis or pressure from periostitis or tumor growth upon the trifacial nerve in its long course through bony orifices and around bony prominences. Another class of disorders is that included under the general name of tic, abnormal facial movements, etc. Dental and ocular irregularities are often at the bottom of such cases. Pain in the shoulder and upper arm with atrophy of the deltoid is often called neuritis. The fact is that the joint is probably at fault. Occupation neuroses, such as writer's cramp, are often regarded only in their local aspect, but the pain complained of may be only the expression of rebellion on the part of exhausted nerve centers. Similarly, sciatica is frequently due to disease of the spinal column at the point of emergence of the nerve-roots, an osteoarthritis, or a sprain of the sacroiliac synchondrosis. Flat foot is another illustration of the author's main proposition, for symptoms are often referred to and confined to other parts, as the knee. The author makes a plea for the independent investigation of each case in place of blind reliance on time-honored diagnoses.

New York Medical Journal, May 23, 1908.

Mucomembranous Enterocolitis; Its Causes and Mechanism.—The two main propositions of H. Nepper are that the false membrane in the malady is the agent which increases coagulative power and diminishes biliary secretion which permits its beneficial function, and that the malady is the result of over biliary secretion. The author enumerates the various causal factors which have been invoked by different authors and discusses the various theories which have been put forth as to its essential pathology. The two main features are fecal stasis and evacuation of mucus. From the author's experiments on dogs, he finds that to be constipated means to have an insufficient biliary secretion, the result of innumerable causes. Suffering from enterocolitis means constipation and evacuation of coagulated mucus—that is, to have an insufficient secretion of bile. Consequently constipation and enterocolitis have the same origin. They are both varieties of the same phenomena, two states of the same affection, enterocolitis differing from constipation only by the addition of a second factor, coagulatory power. The mechanism of enterocolitis and constipation, therefore, seems to be well established. As soon as the liver is overworked on account of whatever cause (and this will happen, especially in patients who easily suffer from oversecretion or arthritis in patients who follow a secondary occupation), biliary secretion will decrease, and, according to the cases, result either in enterocolitis or in constipation. When this becomes later chronic mucomembranous evacuation will take place, possibly complicated by all kinds of infections, either in the liver (angiocholitis, cholecystitis, gallstones, or in the intestines, appendicitis, etc.).

Malnutrition.—M. Korshet discusses the occurrence of malnutrition among the large dispensary clientèle. He finds that the underlying basis of the vast majority of cases of illness is in the last analysis deficiency of food, both in quality and quantity. He says that conditions make the man, and only secondarily does man react on his conditions. Social conditions to-day deny to the laboring classes an opportunity to procure for themselves and their children proper food and surroundings, with the result that malnutrition swiftly enters to disable and kill. Personal hygiene and compulsory medical treatment may correct certain physical defects, but not until faulty social conditions are removed will the basic cause of these defects be eliminated. A change in social conditions will not only assure to the working classes an abundance of good food, fresh air, and sunshine, thus weeding out the ills of malnutrition, but make of the physician a public officer working for the prevention of disease for the general good in place of an individual business man treating disease as a means of private gain. Then, and only then, will the school child, properly fed, clothed, and housed, be in a fit physical and mental condition to absorb what it is taught.

The Rôle of the Sphenopalatine (or Meckel's) Ganglion in Nasal Headaches.—G. Sluder refers to a group of ten cases with headache, irregular as to the time of its appearance, and irregular as to the part of the head

involved. Sometimes it was referred to behind the eyes, sometimes to the upper jaw in front, and sometimes to the hard or soft palate. Occasionally the nose was said to ache in the back, or the teeth were described as sore, or the pain was referred to the temple and to the occiput or neck. This headache appeared most irregularly, but was seldom absent for more than a short time. It sometimes would become severe and behave as a migraine. Sometimes an indefinite sense of stiffness was described. These symptoms appeared from day to day, alternating one with the other, or associated two or three together. Still more recently he has seen some high-grade inflammatory troubles in the posterior ethmoidal and sphenoidal sinuses, which have subsided and healed, usually within a week or two, but have left the train of symptoms, as described, in their wake, and these have continued on more or less indefinitely. This exceedingly irregular train of symptoms cannot be explained on a basis of inflammatory troubles in the accessory sinuses. They seemed to him neuralgic, and to have been excited by the forerunning inflammatory process in the nose. The coal tar products give transitory relief. The author discusses the anatomical relations of Meekel's ganglion, and says that the anesthetization of it relieved some of his patients completely. The anesthetization was carried out by placing a drop of a 20 per cent. cocaine solution over the ganglion—that is, as a rule, just posterior to the posterior tip of the middle turbinate. When the cocaine succeeded in giving relief, the author thought the ganglion was close to the external wall of the nose, and if it failed it probably was deeper. The relief would last for from fifteen minutes to one hour, and occasionally the cocaine would abate the attack. None of the cases observed were of sufficient severity to justify operative intervention. Application of 2 per cent. silver nitrate solution or ½ per cent. formaldehyde to that area of the nose either cured or helped the pain.

Middle-Ear Deafness.—W. S. Bryant reports 24 cases, and claims that all forms of middle-ear deafness except the congenital are amenable to treatment, and that the amount of improvement justifies the effort expended. He says that the amount of possible improvement in hearing is in inverse ratio to the pathological changes. Chronic deafness from past or present suppuration of the middle ear can, without exception, be helped by treatment. The amount of help depends upon the power of the patient to make repair and to substitute parts which have been lost. Deafness following middle-ear catarrh is more resistant. Ninety-eight per cent. of chronic deafness is due in whole or part to middle-ear disease. Chronic middle-ear catarrh makes about 69 per cent. of all chronic deafness, while middle-ear suppuration causes about 13 per cent. of chronic deafness. The causes of chronic middle-ear catarrh arise in the nasopharynx and affect the middle ear by interfering with the Eustachian tube. The aim of treatment is first to restore the functions of the Eustachian tube, and, second, to correct the defects of the middle ear. By treatment of the nasopharynx, prophylaxis of these defects is easily assured. The chief difference between the etiology of middle-ear suppuration and chronic middle-ear catarrh is pyogenic bacterial infection. Suppuration occurs almost never independent of nasopharyngeal disease. Prophylaxis of chronic middle-ear deafness due to suppuration is secured by preventing purulent inflammation through care of the nasopharynx. But if suppuration has already begun the hearing is preserved by immediately stopping the suppuration and by treating the nasopharynx appropriately. If any suppuration should exist in chronic middle-ear deafness it must be immediately arrested. If perforations of the membrane exist they must be closed by the growth of cicatrices. In order to compensate for the important parts of the sound-conducting mechanism which may have been lost, it is necessary to adjust mechanical appliances. Adhesions of important parts must be loosened.

Journal of the American Medical Association, May 23, 1908.

Cancer in the Philippines.—F. W. Dudley disputes the alleged absence or rarity of cancer in tropical countries. It certainly occurs in the Philippines where 301 deaths from this cause were reported in 1902, a figure which Dudley, from his knowledge of the imperfections of the statistics, feels safe in saying could be multiplied by one hundred to represent the real facts, bringing the death rate from this cause up to about 5 per cent. His conclusions are given as follows: "1. Cancer is not confined to temperate climates. 2. It is believed that cancer exists in the Philiopine Islands to a greater extent than in the United States. 3. The measures now being taken in other more enlightened countries to warn the people of the necessity of early diagnosis, and early radical surgical treatment in this disease, should be adopted here. 4. The disease is of sufficient importance in the Philippine Islands to warrant an effort being made to obtain better statistics in the future."

Milk Sickness.—The causes of milk sickness, a disease formerly common in portions of the country but rare at present, are discussed by E. O. Jordan and N. M. Harris, who report the discovery of a new focus of the disease in the valley of the Pecos River, New Mexico. The symptoms are chiefly persistent nausea and vomiting, obstinate constipation, sweetish acetone odor of the breath, muscular weakness, abdominal pain and prostration. There is little or no fever; little is known as to the incubation period and autopsy records are few and unreliable. It is peculiar in its association with certain localities, generally on the banks of streams, and with a disease of cattle, known as "the trembles" or "slows" with a symptomatology suggesting the human disease. There are numerous instances in the literature showing a connection between the use of the meat or milk of cattle sick with "trembles" and the disorder in man. Poisonous herbs generally have been credited with causing the disease in cattle, the white snakeroot, poison ivy, and in New Mexico, the rayless goldenrod (*Bigelovia rusbyi*), but the authors express no opinion on this point. Two cases in the convalescent stage in man were observed by them and they were able to study the progress of the disease in a herd of cattle and to obtain all pertinent data. The chief pathological lesions were found in the liver, heart muscle, kidneys, and small intestine; the changes are those of a parenchymatous nature, such as are frequently produced by toxic action in general; namely, cloudy swelling and fatty metamorphosis. The severest action is shown in the liver tissue. In other organs than those mentioned above, nothing of very particular interest was observed as yet. Bacteriological studies revealed the presence in the tissues and body fluids of infected animals of a bacillus which, grown on agar cultures, showed as a rod a little smaller than the anthrax bacillus, occurring singly and in pairs and in occasional filaments, staining somewhat unevenly with methylene blue, spore-forming, the spores perfectly round and at the end of the rods in mature forms, reminding one of the tetanus bacillus. In immature forms the spores may be slightly oval and lie not quite at the end of the rod. They stain readily with any of the ordinary methods. The organism is motile and Van Ermingen's stain shows ten or fifteen flagella disposed peritrichally: the flagella measuring about five times as long as the bacillus. Full details of cultural appearances and of animal experiments, inoculation and feeding, are given, together with pathological findings. As the inferences from the first fatal results of inoculation of rabbits with the bacillus obtained from the body fluids were supported by the later experiments with pure cultures, the authors have designated the bacillus as *B. lactimorbi*. As a more comprehensive study of the subject is intended the authors will be grateful to any physicians who will notify them at once of the occurrence in any locality of milk sickness or of the cattle disease, "trembles," "slows," or "alkali poisoning."

Synovial Fringes.—After referring to former writings on the subject, E. G. Abbott says that his views have changed somewhat in regard to the value of operative treatment of hypertrophied synovial fringes interfering with motion in the knee joint. In his definition of the condition, he excludes the pathological changes sometimes classed with it—lipoma arborescens, chronic villous arthritis and floating cartilage—which he considers entirely distinct. The cause of ill success in operation, which had led Hoffa and himself almost to give up surgery as a remedy, has been the restriction of motion due to too extensive scar tissue following the method deemed necessary in operating. Owing to the fact that, in this class of cases, the parts that interfere with the joint motion are so small, there does not, he says, seem to be any need of their complete removal, since they project into the joint but very little more than they normally should. Instead, therefore, of the U-shaped or lateral division of the capsule he does not open the joint, but cuts only down to the capsule on each side, retracts it, pulling the fringes out of the joint, and takes a reef in the capsule, thus preventing their further interference by taking up a fold of the capsule, securing it with sutures, and cutting it off inside of a specially devised clamp. The cut edges are finally sewed together with a fine suture which buries the exposed synovial border. The skin incision is closed and the leg kept in an extension splint for about a week. The after-treatment is simply keeping the joint at rest until healing has taken place. Motion is not restricted by such an operation, and the joint is practically normal a few days after the removal of the splint. The advantages claimed are: less danger than from the more extensive operation; better assurance of complete recovery; and avoidance of the long after-treatment and its discomforts.

Quinine Prophylaxis of Malaria.—E. R. Stitt questions the advisability of the prophylactic use of quinine against malaria, and quotes Ronald Ross that it is not

good policy to substitute a measure which does not exclude infection, but is merely extirpative in some cases, for positive prevention. Celli's statistics also show how much more effective mosquito protection, with or without quinine, is than quinine prophylaxis alone. In 1895, Stitt served as medical officer of the Ludlow Nicaraguan Canal Commission. It was his intention to recommend quinine as a prophylactic, but advised by a physician who had had experience in the employ of the canal company, he decided against it. This physician told him he had found that quinine in doses that could be well borne had little effect on the development of the disease; also, that it seemed that its previous prophylactic use made the individual less amenable to its curative effects and more subject to relapses. A few cases of malaria occurred while in camp, all yielding satisfactorily to large doses of quinine. The only member of the party who insisted on taking quinine as a preventive was the only one who had an attack on the trip home. A still more striking experience was with some marines who were stationed in an exposed situation near Panama for a month in 1906. During that time each man took nine grains of quinine daily as a prophylactic. Very little malaria occurred while on the isthmus, but the first day after sailing from Colon, there were 20 cases, the next day 53, and the third day 45. Notwithstanding the general administration of almost curative doses of quinine as a prophylactic, the condition of the marines on their arrival at Porto Rico was such that it was deemed necessary to get the men out of the tropics, and they sailed at once for Boston. During the five days' trip to Boston there were 215 acute malarial paroxysms among 298 men, in spite of the prophylactic use of quinine for those who were not cinchonized. The attacks were atypical—there was no frank chill. When the men arrived at Boston many were so weak and anemic that they were unfit to return to the tropics. The fact was noted that they did not seem to respond at all satisfactorily to quinine, even when it was given hypodermatically. Although from blood examinations made before the cases became so numerous the form of malaria was considered to be chiefly tertian, the clinical features indicated an estivoautumnal infection in many of the cases. From such facts as these, Stitt says he can but believe that malarial parasites may develop a resistance to quinine similar to that observed by Browning in trypanosomes, which moreover, seems to be inheritable by these organisms. He has himself seen actively motile amebas in the stools of persons undergoing quinine irrigation of the colon, and asks, if, instead of attributing this to the protection of the mucus, can we not suppose that these amebas have developed a resistance during the extended use of the drug? Another important consideration is that not only is the chief means of correct diagnosis, the finding of the parasite in the blood, made uncertain or useless by the driving of the parasites from the peripheral circulation, but the frank manifestations of the malarial paroxysms are masked so that clinical diagnosis is also made difficult, especially in the estivoautumnal forms of the disease. The physician referred to previously considered this a cause sometimes of delay of proper curative treatment resulting in difficult cases and more frequent relapses. At that time (1895) the fact of pathenogenesis in the microgametes was unknown. Now, thanks to Schaudinn, we have a scientific explanation. "The sexual forms in estivoautumnal fever do not develop for about ten days after the first paroxysm. In case we are giving quinine prophylactically we do not recognize the first attack, and as time goes by the gametes develop. These being resistant to quinine, as shown by the experiments of Gualdi and Marirano, are not extirpated. Later on the microgametocytes die out, leaving only the macrogametes. These by a parthenogenetic reproduction give rise to another nonsexual cycle and we have a relapse."

The Lancet, May 16, 1908.

Juvenile Tabes Dorsalis.—The histories of five cases are given by S. Stevenson. In three there was a definite hereditary specific taint. Cantonnet has been able to collect the histories of 89 cases, which material is briefly analyzed by the author. He notes that clinically confusion may arise between juvenile tabes and Friedrich's ataxia. In well-marked cases, however, the distinction is not difficult. The salient characteristics of Friederich's ataxia are (1) nystagmus, and (2) associated deformities, such as pes cavus and lateral curvature of the spinal column. The "lightning pains," the pupillary signs, and especially the optic atrophy of tabes dorsalis, are absent from the other affection. The bilateral atrophy of the optic disks coming on in young subjects might lead to some confusion with that peculiar abiotrophy known as "hereditary optic atrophy," which is liable to attack more than one member of a family at or about puberty. "Leber's disease," as it is sometimes called, is, however, usually preceded by optic papillitis, and even when the appearances of optic atrophy are present, yet the peripheral parts of the visual field retain their functions. The defect of vision, in other words, is in the nature of a central scotoma. Juvenile tabes may assume various clinical forms. Some cases are characterized by lightning pains in the legs and arms, ataxia of the limbs, and a reduction of the knee and ankle jerks. In a second group the prominent symptoms include amblyopia due to optic atrophy, together with changes in the pupillary reflexes, and abolition of the knee and ankle jerks. In this group ataxia is often absent, thereby bearing out the so-called "Benedikt's law," viz.: That ataxia symptoms disappear or fail to develop on the advent of optic atrophy.

A New Method of Restoring the Continuity of the Bowel in Cases of Excision of a Growth Low Down in the Sigmoid Flexure.—J. P. Lockhart Mummery thus describes an operation recently performed by him. The patient, having been placed in the Trendelenburg position, an incision was made through the outer part of the rectal sheath on the left side of the abdomen and extending right down to the pubes. On opening the abdomen, the operator found that the lower part of the growth extended down to within one and one-half inches of the rectosigmoidal junction, and that a loop of the sigmoid flexure above the growth had become adherent to, and was involved in it. This necessitated the removal of all but a few inches of the sigmoid flexure if the growth was to be removed. The sigmoid flexure was divided above the involved loop and the mesosigmoid was tripped up from the posterior pelvic wall and the vessels clamped as they were divided. This procedure was rendered necessary owing to the fact that some of the glands in the mesosigmoid were involved. As a result of the stripping up of the peritoneum the great iliac vessels were laid bare. The sigmoid flexure at the rectosigmoidal junction was now divided an inch below the growth and the adherent loops were removed. The peritoneum was brought together by stitches over the posterior pelvic wall and all bleeding points were ligated. At this stage, owing to the rectum not having been properly emptied previously to the operation, some soiling of the pelvic peritoneum unfortunately took place. Any of the ordinary methods of end-to-end anastomosis were quite impossible owing to the depth of the wound and to the fact that there was no stump of bowel below, but merely a hole in the pelvic floor. A glass Keith's tube was tied into the upper end of the sigmoid flexure and the free end of this tube, to the end of which a piece of large-bore rubber tubing had previously been attached, was passed down into the rectum from the abdominal cavity. An assistant then caught this with forceps introduced per anum and drew it out of the anus. By drawing on the Keith's tube the upper end of the sigmoid flexure was invaginated into the upper end of the rectum so as to form a kind of intussusception. Two or three silk stitches were then put in to prevent the invagination from coming undone. A drainage-tube was then inserted and the abdominal wound was closed in separate layers. The operation, which had taken some time, was well borne, and there was no shock. The author says that one of the chief advantages of the operation is that it enables the continuity of the bowel to be restored satisfactorily where stitching is out of the question. Furthermore, the bowels can be opened on the day after the operation without fear of rupture or leakage, as the sigmoid flexure and tube are gas-tight. In the case described the condition produced was practically a short artificial intussusception, the two peritoneal coats being in apposition, and the ends of the mucous coats close together, though not necessarily touching each other. Owing to the glass tube tied into the upper portion of the bowel no leakage could occur, and the ends of the bowel had about a week in which to become united to each other before there was any possibility of any strain being thrown upon the line of union; while the tube was still in position the bowels could be freely opened without any risk of leakage, and this was a very great advantage in the case of an anastomosis so near the rectum.

British Medical Journal, May 16, 1908.

Fracture of the Patella Treated by Mobilizing the Lower Fragment.—J. L. Thomas reports the case of a laborer, of forty-three years, who fractured his patella but did not consult a surgeon for several weeks. Various methods of nonoperative treatment failed to secure union. When first seen by the author, there was a gap of about an inch and a half between the fragments, and apparently nothing but skin existed in the gap between the examining fingers and the femoral surface. Nearly one year after the original accident Thomas operated, failing to get the fragments to within half an inch of each other by traction, and realizing that division of the quadriceps extension muscle is followed by much weakness of the limb, he decided to attempt to bring the lower fragment towards the

upper by mobilizing it. This was readily done, as the operator took advantage of his experience in the performance of arthrotomies and excision of the knee joint by Kocher's excellent method of the curved external incision and chiseling off the tubercle of the tibia, and applied it to this case. After making a long curved incision well down over the shin, the tubercle of the tibia with the ligamentum patella attached to it was chiseled off from without, care being taken not to detach the tendinous and periosteal attachments along its inner edge. By forcible traction upon the lower fragment of the patella and its ligament, the fragments were soon brought into contact, and their bared surfaces were kept in apposition by means of two loops of silver wire. The tubercle of the tibia retained considerable strength of anchorage in its displaced position by means of the untorn fibrous attachments of the ligamentum patella along its inner side. The wound was closed without drainage, and the patient left the infirmary in five weeks. Nothing could be more satisfactory than the immediate result of mobilizing the lower fragment, while the junctional result in time was also satisfactory.

A Method of Obtaining Rapid Healing of Acute Abscesses.—The method described by J. Phillips is based on the theory that if all the dead material in a localized abscess is removed and means taken to prevent the collection of further dead material in the abscess cavity to act as a culture medium, rapid healing will take place. The following rules are given: (1) Cleanse the skin as in operating on sterile tissues. (2) Make an incision long enough to permit of the pus being freely evacuated and the pyogenic membrane rubbed clean and smooth with gauze wrapped round the finger. (3) Having emptied the abscess cavity as completely as possible, pack it tightly with gauze (we use 1 in 1,000 mercury perchloride gauze, dry) and apply a wool dressing and bandage as firmly as possible. (4) At the end of forty-eight hours remove the packing and dress the wound as if it were a simple incision; that is, do not pack or drain at all, but simply fix a gauze and wool dressing firmly in place with a bandage. This dressing will require changing only once in three or four days until the incision is soundly healed, and it will be found that the sides of the abscess cavity unite promptly and that there is no outpouring of pus from it. From the time when the packing is removed it is practically a simple incised wound that is being treated. Histories of six illustrative cases are given.

Calcium Chloride in Melæna Neonatorum.—S. C. Legge was called to see a child which had been delivered by a midwife. He found the clothes stained with blood and saturated with a dark, treacly fluid, and from the anus bright blood was issuing. The child appeared pale and collapsed, previously having been the ruddy hue usual to infancy. There was no vomiting or jaundice. He paid two further visits during the day, and found the discharge still continuing, but of a brighter color. On his second visit he took with him a solution of calcium chloride, a teaspoonful of which was given every half hour (the child during the following thirty-six hours taking twenty grains). On the following morning the discharge was less in amount, and the child appeared better. On the third day the discharge stopped, and the child made a rapid recovery. The child took the breast well throughout. The midwife informed me that the labor was normal in all respects. There was no sign of sepsis in mother or child, and the latter appeared healthy in other respects. The cord was quite healthy, coming off on the fifth day. The author thinks that the calcium chloride had a beneficial effect in this case, as when first seen the prognosis seemed anything but good.

Berliner klinische Wochenschrift, May 11, 1908.

Hemolytic Streptococci in Puerperal Septicemia.—Fromme and Heynemann say that streptococci are found in the vaginæ of the majority of pregnant and puerperal patients; like organisms are responsible for the septicemia of the puerperium. All the virulent streptococci which they obtained from the blood, the peritoneal cavity, or the endometrium of such cases showed one common property: They had hemolytic action upon the blood-agar plates. The finding of such organisms in patients suffering from fever in the puerperium is evidence of the serious character of the disease. The absence of such a streptococcus permits a favorable prognosis even in the presence of severe symptoms.

Münchener medizinische Wochenschrift, May 12, 1908.

The Significance of the Achilles Tendon Reflex.—Couzen has examined 3,290 patients for the presence of this reflex, which consists in quick plantar flexion of the foot when the Achilles tendon is smartly tapped with a percussion hammer. He has never observed its absence in healthy persons. Such absence always meant some pathological condition of the nervous or muscular system, and was observed in cases of alcoholic neuritis and of tabes dorsalis, and in later periods of sciatica. The author attributes the same importance to this reflex as is usually given to the patellar reflex.

Deutsche medizinische Wochenschrift, May 7, 1908.

Alimentary Lactosuria in Diseases of the Stomach.—A. von Halacz administered 150 grains of lactose to each of forty-five patients suffering from various diseases other than those of the stomach. In no case did lactosuria result. The same quantity of sugar was given to each of the twenty-three other individuals, seven of whom came to autopsy with carcinoma of the stomach, ten had a palpable tumor of the greater curvature, two had dilated stomachs with carcinomatous disease elsewhere in the abdomen. The condition of the remaining four patients is not stated. In twenty-two of these twenty-three cases lactosuria resulted. The author thinks that the lactosuria was caused not by the existence of carcinoma or other disease, but was due to dilatation of the stomach.

Diet in Motor Insufficiency of the Stomach.—Cook says that the use of a fat and proteid diet is diminished motor activity of the stomach is usually followed by great improvement or disappearance of the symptoms. He cites four cases in which the digestion of fat as measured by the refractometric method of Strauss showed progressive improvement on such diet. For the diagnosis of coexistent dilatation, Cook uses the maximum distance of the stomach, as determined by percussion, to the right of the middle line. This distance he considers more trustworthy in pointing to the existence of dilatation than the determination of the lower curvature of the stomach.

French and Italian Journals.

Puerperal Infection with the Staphylococcus and Colon Bacillus.—Marquis has made examinations of the blood of his cases of infection in order to obtain evidence of the frequency of infection by other bacteria aside from the streptococcus, especially the staphyloccoccus and colon bacillus. He has found four cases of the former and three of the latter, of which he gives us the histories. He finds that when in pure culture and without metastases neither of these infections are very fatal, most cases recovering. Both of these varieties are of somewhat long duration, the colon bacillus especially producing an infection that may run even for several months. Serodiagnosis is most valuable in differentiation of these infections from that with the streptococcus.—*Annales de Gynécologie et d'Obstetrique,* April 1, 1908.

Internal Secretion of the Ovary.—M. Hughes Alamartine, after a careful consideration of the evidence for the theory that there is an internal secretion of the ovary of importance to the body, states that it is his conviction that this fact is established by the evidence we now possess. There is a correlation between this gland and the suprarenal capsules, and other glands which have an internal secretion. The cells of the interstitial glandular substance of the ovaries resemble those of the suprarenals. The corpora albicantia do not develop until after ovulation has begun. There are formed in the ovaries toxic substances, and this goes to show that the action of this organ is to remove from the body substances that are unfavorable to its action, and which are brought to the ovaries by the circulation. The two functions, antitoxic and sexual, need not be separated. The toxins elaborated in the ovary are transformed into useful substances, some are rejected with the ovule to aid in the sexual reproduction; others are absorbed by the uterus to prepare the mucous membrane for fecundation and assure the development of the ovum. Still others go throughout the organisms and produce the so-called secondary ovarian characteristics—*Gazette des Hôpitaux,* March 14 and 21, 1908.

The Tuberculin Reaction and Its Diagnostic Value in Infant Tuberculosis.—Olimpic Cozzoline has experimented with the old tuberculin of Koch in the diagnosis of infantile tuberculosis. Forty-seven infants were injected, a febrile reaction being obtained in twenty-one. He concludes that in suitable cases the injection of tuberculin has an undoubted diagnostic value in babies. It has no bad effects when the proper precautions are observed. The type of the reaction is variable; the commonest is a rapid ascent and descent of temperature, but in some the reaction lasts for some time. The *stichreaktion* of Escherich has almost no diagnostic value. The opthalmoreaction does not give sufficiently certain results to take the place of the true tuberculin reaction obtained by injection.—*Rivista di Clinica Pediatrica,* February, 1908.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-ninth Annual Session, Held in Chicago, June 1, 2, 3, 4 and 5, 1908.

(Special Report to the MEDICAL RECORD)

HOUSE OF DELEGATES.

Monday, June 1—First Day.

DR. JOSEPH D. BRYANT OF NEW YORK, PRESIDENT, IN THE CHAIR.

Address of the President.—Dr. JOSEPH D. BRYANT, after acknowledging the honor bestowed upon him, discussed the functions of the presidential office, pointing out the benefits to be derived by cooperation by the President with his colleagues in official labors, as is done in other corporate bodies. Referring to the proposed amendment of the Constitution to admit to membership in the House of Delegates ex-Presidents of the Association, he recommended cautious action in a matter which, while disturbing the equilibrium of constituted State representation, seemed not to contribute a commensurate gain. The clause of the Constitution providing that "no member of the House of Delegates shall be eligible to the office of President or Vice-President" was a wise and healthy measure. Referring to the work of the Council on Pharmacy and Chemistry, he said he had been much disturbed by charges of ungentlemanly, oppressive, and illegal treatment, made by certain pharmaceutical houses against responsible officials of the Association, one complainant averring that even if he were sustained by the courts, still his business would be destroyed by retaliatory cooperative action of the members of the Association. Recommending that such a situation should be met by the members of the profession in a spirit of good-citizenship, he asked whether those opposed to the policy which stands for the securing of trustworthy medicinal agents were entitled to the same consideration as those are who approved of that policy.

The work of J. N. McCormack of Kentucky was commended as being of importance in elevating the tone and the standard of the medical profession.

The principles of moral philosophy being hard to instil into the minds of physicians of established thought and habit of action, Dr. Bryant considered it important that undergraduate and postgraduate instruction in ethical medicine should be required of medical schools, and recommended that a standing committee on principles of moral philosophy as applied to medicine should be constituted, with the view of elaborating still further ethical principles, and, so far as practicable, establishing in this respect uniformity between the medical profession of this and other countries. Plausible measures directed to the regulation of animal experimentation being abroad in the land, so adroitly drawn and so cleverly presented as to conceal their grave possibilities, the President cautioned medical men loyal to the spirit of scientific endeavor against thoughtlessly giving strength to the foes of scientific medicine. The speaker recommended that the duties of the House of Delegates be simplified, so that membership therein should not become so onerous as to eliminate from its councils men whose ceaseless toil makes for higher station in medicine. He then paid a tribute to the memory of the late Dr. Nicholas Senn, whose indefatigable energy and ceaseless activity had contributed so greatly to the honor and glory of the calling of medicine. In March of this year, the President of the United States had invited the American Medical Association to take part in the Conference on the Conservation of Natural Resources. In response thereto, Dr. Bryant attended the Conferenec as the official representative of the Association, and on its behalf pledged the support in the purposes of the Conference, not only of the members of the American Medical Association, but of the entire profession of the land. He urged the House of Delegates to take prompt and decided action, thus showing appreciation of the invitation and determination to aid the movement in every possible manner.

Report of the General Secretary.—Dr. GEORGE H. SIMMONS presented this report: On May 1, 1907, the membership of the Association was 27,515. During the year the total loss in membership from all causes had been 2,334. There had been added during the year 6,172 names. The membership on May 1, 1908, was 31,343, a net gain for the year of 3,828. The State associations had been urgently requested to express their views on the subject of branch associations, and acknowledgments of communications sent on this subject had been received from thirty-six States. Of these, two had voted in favor of branch associations, nine had voted against, and twenty-five had taken no action. Much difficulty had been encountered in enforcing the provisions of the by-laws regarding the membership because different State associations had different rules on such subjects as the date of the beginning of the fiscal year, the date at which dues must be paid, etc. As the Association and its various constituent parts had been better organized, and as the work of the various secretaries had become more burdensome, it was necessary to formulate a uniform system of procedure for the various State associations and component county societies to follow. It was therefore recommended that this entire matter be referred to a committee of three, at least two of whom should be secretaries of constituent State associations, with instructions to secure data regarding the present provisions of the constitutions and by-laws of the various State associations on these points, as well as the procedure followed by State and county secretaries, and to report its findings and recommendations to the House of Delegates at the next annual session. A number of communications had been received from physicians practising in Porto Rico and in Alaska regarding the organization of constituent associations in those territories. In each case the writer had been advised by the General Secretary's Office that such an organization was desired, and urged to take the lead in effecting it. Nothing had as yet resulted from the correspondence, but it was hoped that before long a society could be organized in each of those territories that would become a branch of this Association. A communication had been received from the American Association for the Advancement of Science, asking the American Medical Association to appoint two of its members to represent it in the Council of that association. It was believed that this invitation should receive favorable consideration. At present all of the sciences were represented in the Council, and it seemed in the interests of both medicine and the natural sciences that this representation should include practical and scientific medicine.

Report of the Board of Trustees.—Dr. T. J. HAPPEL of Tennessee, Chairman of the Board of Trustees, presented this report, which was accompanied by the customary audit company's statement which showed a net revenue for the year of $28,808.68. The increase of dues over the preceding year was $19,751.09; of subscriptions, $2,875.53; of advertisements, $21,235.82. The total number of copies of the *Journal* issued during 1907 showed an increase of 12½ per cent. over the preceding year.

The Board felt that the time had fully come when the Association could and should do away with the expense of a salaried organizer. The services rendered the Association by Dr. McCormack had resulted in an inestimable amount of good. The organization had, however, now been perfected and placed on such a footing that each State should in the future maintain its own status. There had been expended in this work a sum of not less than $40,000, and while, as previously stated, great good had

resulted from the special work done in this line, and the profession had received a *quid pro quo* for every dollar spent, yet money was needed to push other undertakings; hence their recommendation to discontinue this branch of the work, putting the matter into the hands of the different State associations. The American Medical Association would ever owe Dr. McCormack a debt of gratitude for the great work which he had done in his special department. In accord with the recommendations of the House of Delegates in 1907, the Board had arranged with Dr. McCormack to enter vigorously on the work therein suggested. The Board thought that his time might now be more profitably employed in presenting pure food matters, and the need of uniform State laws governing the practice of medicine before the legislatures of the different States, and as an educator of the public in matters medical, as he had been chiefly doing during the past year, and the Board suggested that he be requested to continue in that work for a time yet.

A tabulated statement was submitted showing the receipts and disbursements of the Atlantic City meeting, the net cost of which to the Association was $4,499.98.

Commenting upon the work of the Council on Pharmacy and Chemistry, the report stated that the importance of the work done by that Council and the Association in correcting some of the evils of patent and proprietary medicines was generally recognized. The work of the Chemical Laboratory in investigating and publishing the composition and quality of the remedies, both proprietary and official, prescribed by physicians would stimulate manufacturers to improve and maintain the quality of their products, and would enlighten physicians as to the quality of the drugs on which the lives of their patients depended.

The following had been appointed members of the Committee on the Revision of the Pharmacopœia: Reid Hunt, Washington; E. E. Hyde, Chicago; George Dock, Ann Arbor; Robert A. Hatcher, New York; W. S. Thayer, Baltimore; S. Solis-Cohen, Philadelphia. New members of the Council on Pharmacy and Chemistry had been named as follows: D. L. Edsall, J. A. Capps, R. A. Hatcher, and Otto Folin. A staff of fifteen clinical consultants to the Council had also been selected. The trustees took occasion to commend in the strongest terms the great work done by the Council on Medical Education in eliminating weak and worthless colleges and improving the standard of medical education.

The reserve fund carried had stood the Association in good stead during the recent financial depression and the Trustees recommended that the amount of such reserve be fixed at $200,000, since a fair proportion of the Association's profits resulted from its ability to discount its bills. The Trustees suggested the advisability of making an annual appropriation of $500 for an essay on subjects relating to internal medicine.

An amendment to the By-Laws was recommended providing that anyone who had been a member in good standing of the Association for twenty years and who had been placed on the retired list of his State association, should, on his request, be placed by the Secretary of the American Medical Association on the retired list of the members of the Association. Retired members should be exempt from the payment of dues.

Report of the Committee on Medical Legislation.—Dr. C. A. L. Reed of Ohio, Chairman. Under the head of national legislation the Committee called attention to the passage of the bill for the reorganization of the Army Medical Department, which was a decided advance inasmuch as it provided an adequate medical staff for the Army, abolished the contract surgeon system, and provided for expansion in time of war. Three bills relating to the Medical Department of the Navy, providing respectively for the reorganization of the hospital corps, the appointment of dental surgeons, and the establishment of a corps of trained women nurses, had not, for one reason and another, been enacted into law. Reference was made to the desired increase of the pensions of the widows of Drs. James Carroll and Jesse W. Lazear of the Yellow Fever Commission. The work of the Committee bearing on State legislation was discussed. The question of uniform laws regulating the practice of medicine in the different States had long been recognized as one of vital importance both to the profession and to the public. The tabulation of material upon which to base an attempt at securing a uniform medical practice act, a task of considerable magnitude, had been inaugurated under the direction of the Committee and would be pushed to conclusion as rapidly as might be compatible with accuracy. Pending the completion of that investigation and the preparation of a model bill, it was recommended that only absolutely necessary changes in the State practice acts be undertaken. A model bill to provide for State legislation on vital statistics had been recommended to those States as yet without satisfactory regulation on that subject. It had been impossible to formulate a model pure food and drugs bill capable of adoption by all the States. Accordingly, the laws of Kentucky and Tennessee, respectively, two of the best State laws as yet adopted, had been issued in the form of pamphlets for distribution. The establishment of a Bureau of Medical Legislation had greatly increased the efficiency of the organization.

Report of the Board of Public Instruction.—Dr. J. G. Clark of Pennsylvania, Chairman. Since the appropriation had been granted in February by the Board of Trustees for the work, the Board had elaborated a provisional scheme as yet only suggestive in character. The first articles to appear would be along the line of preliminary education. The first writers would be chosen from the ranks of scientific workers in no way connected with the practical side of surgery or medicine. Gynecological and sexual matters would not be published, but would be taken up through circular letters to physicians, or by carefully prepared monographs by authorities which would be of the greatest value and could be judiciously employed for educational purposes by the medical profession in their association with their patients. For the present therefore there would be no attempt to exploit any of these subjects in the lay press. No matter which was open to controversy in the medical profession would appear in the public press, and only those facts concerning which there was general accord would be presented. Matters of treatment would be discussed without allusion to details. As to whether or not articles should be signed, the Board requested an indication of the preference of the House of Delegates. The Board believed that two lecture systems were advisable, one under the direct authority of the Association, national in character, and the other a local course of lectures under the auspices of county societies. The Board advised the establishment by the various State societies of State boards of public instruction. Preliminary notice of forthcoming articles in popular periodicals was proposed, whereby physicians might obtain advance information as to the character of the articles about to appear. The Board submitted a definite outline, regarding which suggestions from members were solicited. Its principal divisions were: (*a*) *Medicine*: Bacteriology. The Specific Infections. The Intoxications. The Constitutional Diseases. Diseases Due to Animal Parasites. The Digestive System. The Respiratory System. The Heart. The Diseases of the Kidneys. (*b*) *Nervous Diseases*: Anatomy and Physiology of the Nervous System. Functional Nervous Diseases. Organic Nervous Diseases. (*c*) *Surgery*: History of Surgery from Ancient Times to the Present Day, etc. Abdominal Surgery. Surgery of the Bones. Orthopedics. Nerve Suturing and Plastic Surgery. Army Surgery. (*d*) *Hygiene*: School Hygiene. Domestic Hygiene. Personal Hygiene. Water. Garbage and Sewage. Quarantine. (*e*) *History of Medicine.*

Discussion of Dr. McCormack.—Dr. Philip Mills Jones of California offered a resolution whose purpose was to eliminate from the Report of the Board of Trustees certain portions thereof recommending that the Association do away with the expense of a salaried organizer, stating that the organization work had reached such a stage that each State should now maintain its own status, and recapitulating the expense which the organization work had been to the Association. Dr. Jones considered these statements a disparagement of the work of Dr. McCormack. He believed, therefore, that these statements should not stand as an expression of the sentiment of the House of Delegates.

Dr. T. J. Happel of Tennessee, Chairman of the Board of Trustees, disclaimed any intention on the part of the Board to minimize the value of the work of Dr. McCormack. He called attention to the expression commendatory of Dr. McCormack in the very paragraph under discussion. It was the desire of the Board of Trustees, he said, to report to the House of Delegates what had been done along the line of organization. Dr. McCormack had been continued by the Board of Trustees, under the authority of the House, during the past year. The Board believed that the work of organization had been completed. No reflection whatever had been intended in the report, but a simple plain statement of no further need. The work of organization had progressed to a point where it should be continued by the States, and Dr. McCormack's work should be directed along educational lines, to pure food and sanitary matters, etc.

Dr. L. D. McMurtry of Kentucky was sure that the House had been pleased to listen to the explanation of Dr. Happel. He was aware of the sacrifice made by Dr. McCormack in the prosecution of the organization work. He knew that Dr. McCormack desired to retire from that work. He was convinced, however, that the organization had reached a point where it needed the fostering care of the Association more than at any other time. Dr. McCormack's work was that of organization. He discussed pure food matters, it was true. But why should it have been indicated in the Trustees' report just exactly what he should say to the people? Why should not the report say: "Go on in this good work, and we'll stand behind you!" The matter of expense was an absurd one to consider in the House. The treasury was able to bear the expense, and every county society organized brought into the treasury many times the amount expended. He did not want to have put on record the slightest suggestion that Dr. McCormack's work was not perfect.

Dr. Alexander R. Craig of Pennsylvania proposed an amendment to the resolution to the effect that it and the explanation made by the Board of Trustees be referred with the Report to the reference committee. The resolution was adopted.

Investigation of Drugs by the Public Health Service.—Dr. Happel presented a supplementary report of the Board of Trustees, embodying a communication from Dr. H. L. E. Johnson of the District of Columbia to the effect that preliminary arrangements had been made whereby the Treasury Department, through the Public Health and Marine Hospital Service, would cooperate, under rules to be formulated, with the Council on Pharmacy and Chemistry in the investigation of drugs, etc. A Federal appropriation of $12,000 had been made to aid the American Medical Association in making these investigations. The Board of Trustees asked that a vote of thanks be extended to the Secretary of the Treasury for his aid in securing the appropriation and his promised aid in carrying out the investigations, and recommended that the report be turned over to the reference committee to be considered in connection with the Report of the Board. It was so ordered.

AFTERNOON SESSION.

Report of the Committee on Organization.—Dr. J. N. McCormack of Kentucky, Chairman, discussed his itinerary for the year. In September he addressed the American Pharmaceutical Association, where he outlined the necessity of a system of cooperation between the two associations. The American Medical Association was endeavoring to bring about a return to the use of the pharmacopœia and the national formulary in prescription writing, and to drive out the nostrums. He found enthusiastic support from the better class of manufacturers, but was immediately made the object of the most severe attacks from those who would be the greatest sufferers from such a movement. He favored a careful study of the question, whereby standard formulæ of known value might be substituted for proprietary remedies. He recommended to the House of Delegates that a conference committee be created to meet a similar committee from the Pharmaceutical Association. He commented on the rapid adoption by the county societies of the post-graduate course of study now running in the *Journal*. During the year his work had taken him into West Virginia, Indiana, Virginia, Kentucky, Ohio, Louisiana, Mississippi and Pennsylvania. He made addresses at Yale University and before the American Health League in New York. Among all classes of society he had found promise of support for all reforms proposed. He discussed the inadequacy of the present training in medical schools. How to gain practice, how to collect accounts, how to keep up studies, the dangers of contract practice, and the division of fees, all such problems were quite neglected in the medical colleges at present. He spoke also of the absolute necessity of higher entrance requirements. Only by such fundamental changes would it be possible to correct conditions wherein one-third of all sickness and one-third of all deaths resulted from unnecessary diseases. Schools had never adopted reforms except under compulsion of law. The work of organization would have to be kept up until students educated according to these requirements formed the body of the medical profession.

Report of the Committee on Ophthalmia Neonatorum.—Dr. F. Park Lewis of New York, Chairman. The average of the new admissions in the fall of 1907 to ten schools for the blind, representing eight States and the Province of Ontario, was 25 per cent. needlessly blind. For the last eight years the pupils of the Pennsylvania School for the Blind had run from 23 per cent. to 50 per cent. needlessly blind. To meet such conditions, the committee considered three things necessary: First, exact data; second, control by State authorities; third, united and concurrent action on the part of all those who knew what to do and were willing to aid in stamping out this pestilence. The first need had been met through circular letters to the State medical societies, responses to which were immediate and gratifying. As to the procedure to be adopted, the first step of importance was to secure a general registration of births. The second essential was the registration of midwives. It did not seem practicable to make ophthalmia neonatorum a reportable disease. The distribution was proposed of tubes containing a proper prophylactic, preferably a 1 per cent. solution of silver nitrate, by the health departments. The result sought to be accomplished might be greatly facilitated by an international congress devoted to the prevention of unnecessary blindness. Such a congress should include for its consideration not only ophthalmia neonatorum, but all forms of preventable blindness, such as trachoma, and preventable accidents due to peculiar employments. If such a congress were to be held in Washington in 1910 its possibilities might be outlined at the Ophthalmological Congress, and a plan of procedure adopted which might do more than any other single movement to lessen the unnecessary blindness of the world.

Report of Committee on Section on Tropical Medicine.—Dr. L. Hektoen of Illinois, Chairman. The Committee regarded the formation of such a section as unnecessary at the present time, because papers and discus-

sions on topics especially related to tropical medicine could be presented very well in existing sections, more particularly the sections on Practice of Medicine, on Hygiene and Sanitary Science, and on Pathology and Physiology.

Report of Committee on Scientific Research.—Six grants of $200 each had been made, to be applied to work to be reported at the Chicago session. The Committee recommended an increase of the appropriation to $1,000 a year. The report was referred to the appropriate reference committee.

Report of the Davis Memorial Committee.—The committee reported progress, Massachusetts having contributed $500. Request was made that, besides the appropriation of $5,000 which the Committee confidently expected from the Association, the several State societies be invited to appropriate during the coming year such sums as their judgment might warrant for this purpose. The report was referred to the appropriate reference committee.

A Uniform Medical License Law.—Dr. G. Wythe Cook of the District of Columbia offered a resolution providing that the Committee on Medical Legislation or a special committee of five to be appointed by the Chair be instructed to formulate a medical practice law applicable to all States and Territories, the license of each State to be recognized by every other State and Territory, and that the law so formulated be recommended to the various State associations. The resolution was referred to the Reference Committee on Medical Legislation.

Report of the Council on Medical Education.—Dr. A. D. Bevan of Illinois, Chairman. The report of the Council, going into great detail, is summarized as follows: (*a*) There are 335 medical colleges in the civilized world, of which number the United States has 161, or 48 per cent. (*b*) All the medical schools of Europe are medical faculties of universities, or are under the direct control of universities. There are no proprietary schools, such as are found in this country. (*c*) The United States is the only leading nation which does not require a thorough preliminary education in physics, chemistry, and biology of every matriculant in medical colleges. (*d*) Comparison with European medical schools shows that medical education in the United States is deficient both as regards preliminary requirements and in the length of the medical course. (*e*) As regards the time necessary to complete the course in medicine, the majority of European countries agree with the ideal standard adopted by the American Medical Association at Portland in 1905. (*f*) Primary and secondary education in the majority of European countries may be finished after twelve years of study, agreeing with the time required to complete the public school courses in the United States. (*g*) According to the claim of leading educators, the work in the secondary schools of several European countries is the equivalent of the standard high-school course in the United States, plus two years of work in a university. (*h*) This would seem to indicate that, in the results obtained, twelve years of study in primary and secondary schools in Europe are equal to fourteen years of study in the United States. (*i*) Eight more colleges have been rated below fifty per cent. as a result of inspections made by the Council during the past year. The number of colleges thus listed as unsatisfactory now reaches 39. (*j*) Thirty-two reputable medical colleges offer a combined course whereby the student may obtain the baccalaureate and M.D. degrees in six years. (*k*) Fifty-three medical colleges either already require for admission one or more years of work in a college of liberal arts, including courses in physics, chemistry, and biology, or have voted to do so in 1910 or before. (*l*) Of the medical colleges in the United States several are probably equal to any in the world, and the majority are voluntarily keeping abreast of the demands of modern medicine. There are some, however, which will probably not do so until the State examining boards adopt and enforce higher requirements. (*m*) The examining boards of Minnesota and North Dakota, beginning in 1912, will require preliminary education equal to two years of university work. The boards of Colorado, Connecticut, and South Dakota will require the equivalent of one year of university work. (*n*) Thirty-four States have now established reciprocal relations with four or more other States. Several other State boards have been given legal authority to do so, but are not taking advantage of it. (*o*) More laws influencing medical education have been secured during the past ten years in this country than in all previous years, and there is a rapid trend toward uniformity of requirements.

Report of the Director of Post-Graduate Work.—Dr. John H. Blackburn of Kentucky reported that the suggestive outline of study submitted to the house last year had been sent out to selected workers in the profession all over the country for suggestion and criticism. The replies generally were confined to mere commendations of the plan, but many contained suggestions as to the subject-matter to be covered, especially in the line of materia medica and therapeutics. Following these suggestions so far as possible, a course for the first six months was published in September, and since then a weekly elaboration of the outline had appeared in the *Journal*. The outline for the second six months was issued in March of this year. The course had been adopted, according to notifications received by Dr. Blackburn, by ninety county societies. The outline for the second year was now in preparation. There was in contemplation a regular quarterly examination, with proper credits, and a certificate or diploma on the satisfactory completion of the four years' course. The great aim of the course of post-graduate study was the perpetuation of the county society, on the active operation of which unit of organization would depend the success of the American Medical Association.

Report of Committee on Nomenclature and Classification of Diseases.—Dr. Frank P. Foster of New York, Chairman. The individual members of the committee had already done a great deal of work on the proposed revision, but were not able to complete it in time to be submitted at the present session. It recommended the provisional adoption of the nomenclature of diseases of the Royal College of Physicians of London for use in naming diseases and injuries in clinical reports, and of the International Classification of Diseases and Causes of Death in official mortality and morbidity reports. If the present committee should be continued, it was confidently expected that a completed nomenclature and classification would be submitted at the session of 1909.

Tuesday, June 2—Second Day.

Report of the Reference Committee on Medical Education.—Dr. H. D. Arnold of Massachusetts, Chairman. The committee extended its congratulations to the Council on Medical Education on the success of its work during the year, and recommended the continuance of the campaign of publicity, and of the efforts to induce more schools to adopt higher standards of admission.

Report of the Reference Committee on Reports of Officers.—Dr. Wisner R. Townsend of New York, Chairman. The committee recommended that all suggestions in the President's report relating to matters contained in the present Constitution and By-laws be referred to a special committee of three.

The committee recommended the adoption of the following resolution, approving of the recommendations of the President relating to the teaching of the principles of moral philosophy as applied to medicine.

A resolution was recommended: (*a*) That animal experimentation has been of incalculable benefit to science and art, the progress of which is as absolutely dependent upon experimental methods as are all the physical and natural sciences. (*b*) That no abuse of the practice of animal experimentation in this country has been shown

to exist to warrant specific legislation, nor is there any probability of such abuse arising. (*c*) That the unrestricted performance by proper persons of scientific experiments on living animals is essential to the maintenance and progress of medicine and biology." The resolution was adopted.

The committee recommended that measures be taken to bring about a uniformity of membership regulations in the constituent bodies, as outlined in the report of the General Secretary. It also recommended the striking out from the Trustees' report the portions which had been objected to at Monday's session, and the substitution therefor of a paragraph to the effect that the American Medical Association owed Dr. J. N. McCormack a debt of gratitude for his work as organizer, and it was recommended that he be requested to continue his work along that line. The appropriation for the continuance of the post-graduate work was recommended by the committee, and the recommendation was adopted by the House.

Dr. William H. Welch of Baltimore presented a resolution directing that the Board of Trustees establish a committee on the defense of medical research, whose duty it should be to make proper presentation before legislative bodies on the question of animal experimentation. Dr. Vander Veer of New York urged the necessity of such a measure, and on motion the resolution was referred to the Board of Trustees with the hearty indorsement of the House of Delegates.

Dr. W. H. Sanders of Alabama presented a resolution providing for an investigation of the question of a national charter for the Association, and for other purposes, which was referred to the Reference Committee on Medical Legislation.

Dr. C. S. Bacon of Illinois offered a resolution providing for a Conference Committee of Five to cooperate with the Committee on Medical Legislation and with the committees of other interested organizations to seek the amendment of the patent and trade-mark laws so as to prevent the monopolization of pharmaceutical preparations and the consequent retardation of the development of new therapeutic agents.

Committee on the Davis Memorial.—Dr. Henry O. Marcy of Massachusetts said that the neglect of the American Medical Association to take the lead in appropriating funds for the Davis memorial had been such a handicap to the committee in the solicitation of funds from constituent bodies that unless the House of Delegates was prepared now to make a contribution of $5,000 the committee would recommend the return of funds already contributed and ask to be discharged.

Dr. A. McCormack of Kentucky recommended that the policy of the *Journal* in restricting its advertising to pharmaceutical preparations indorsed by the Council on Pharmacy and Chemistry be communicated to constituent bodies, with the recommendation that they follow the same rule in respect to their organs.

GENERAL SESSION.

Tuesday, June 2—First Day.

Dr. Joseph D. Bryant of New York, President, in the Chair.

The Right Reverend Charles Edward Cheney, D.D., Bishop of the Reformed Episcopal Church, made the opening prayer.

A greeting was extended by President Bryant on behalf of the organization, the history of whose remarkable growth and increasing power for public good he touched upon. Quoting the words of the Constitution setting forth the object of the Association—the efficient organization of the medical profession of the United States, the growth and diffusion of medical knowledge, and the enlightenment of public opinion in regard to the broad problems of hygiene—this object he declared to be rapidly nearing accomplishment. He urged that in all questions which related to the enhancement of the public health and welfare, the public should implicitly trust the members of the medical profession, who pledged themselves to fulfill in all respects their obligations as citizens and professional men.

His Excellency, Charles S. Deneen, Governor of Illinois, in an address of welcome, said that the medical profession was, without doubt, of all professions, the one upon which mankind came nearest to entertaining a unanimity of opinion. Everywhere health was deemed the greatest of earthly blessings, and everywhere the profession which was devoted to its maintenance was ever deemed the greatest of professions. Moreover, in no other profession did men display greater devotion to the general welfare of mankind. The American Medical Association had been one of the most active agents in the advancement of the science of medicine and in the establishment and maintenance of the high code of ethics to which the members of the medical profession conformed. Its reward lay in the universal confidence with which the profession was regarded in all parts of the country.

The Mayor, Hon. Fred. A. Busse, not being able to be present, a welcome to the Association on behalf of the City of Chicago was extended by Dr. W. A. Evans.

Addresses of welcome were made by Dr. J. W. Pettet, President of the Illinois State Medical Society, and Dr. H. B. Favill of the Chicago Medical Society.

Address of the President.—Dr. Herbert L. Burrell of Boston, being introduced by Dr. Bryant, then delivered his presidential address (see page 925).

Afternoon Meeting.

Oration on Surgery.—Dr. George W. Crile of Cleveland, at the afternoon session, delivered this oration, taking as his subject "The Problem of Cancer" (see page 929).

Evening Session.

At the Third General Session, held at 7:30 P.M., the following orations were delivered:

Oration on Medicine.—Dr. William Sydney Thayer of Baltimore delivered this oration, taking as his subject, "Some Relations of the Physician to Public Duties and Opportunities." The physician, he said, had always been and, from the very nature of his calling, must be, more or less a public character. In the smaller community he was a public character in the sense that he was a common source to which the citizens repaired for advice, not only concerning their physical and mental but often also their material well-being. In the larger centers of population he was a public character in that it was on his direction, on the results of his studies and research that the community depended for the organization of those more general, broader sanitary measures which are demanded to meet the exigencies ever arising and multiplying with the growth of large urban communities. In the early days of this country, when there were no large cities, the physician exercised this influence individually among his patients, as the family friend and adviser. With the growth and development of the nation and the great advances made in medical knowledge, the functions of the physician had considerably broadened. There was now an increasing body of students, of physicians who accomplished their function, and a most important and radical function it was, in the study of special scientific problems—a life widely different from that of the country doctor of old.

At the same time, the crowding together of the population into great cities had brought with it new dangers. The poisoned well might affect one or two families at most. The poisoned water supply of a great city might affect thousands. Scarlet fever in the country town had few victims and might be more or less readily controlled. In congested tenements it was a widely different problem. These new dangers involving the broad questions

of public health and prophylaxis, questions of drainage, of water, of milk and food supply, of the care of contagious diseases—these demanded the individual attention of men who had had special training. The great questions of water supply and of drainage could not be attended to properly by the engineer alone, nor could the protection of the city from epidemics of infectious disease safely be entrusted to boards of health consisting only of public-spirited citizens; both were dependent on the advice and assistance of the trained sanitarian. In almost all large enterprises to-day the aid of the physician was sought, as for instance, in the organization of the relief departments of great railways and corporations and in large department stores. But the distinctly public duties of the physician were by no means confined to exigencies arising in large centers of population. There were, in the history of mankind, examples of the gradual or sudden desolation of extensive districts by the insidious influence of diseases now known to be in great part preventable. Such an example was seen in the history of Greece, in the ruin of that country, and the degeneration of its people as a result of malaria. The work of the physician was to prescribe measures of reorganization in this and other countries devastated by malaria, as was in fact being done to-day in Italy, where the mortality in the fever-ridden districts had been reduced two-thirds in five years. Another example was found on the Isthmus of Panama. The French, with unexcelled mechanical skill and energy, had failed to dig the canal, failed largely because of the dreadful and continued mortality among the workmen. The United States took up the work. In the meantime there had come the great discoveries of Ross and Grassi and Bignami and Bastianelli, completing those of Laveran, concerning malaria, and the vital and illuminating contributions of our own Reed, Lazear, Carroll and Agramonte, with regard to yellow fever. And now the Panama Zone compared favorably, as to sanitary conditions, with the more healthy parts of this country. Yellow fever, though on all sides, was here unknown. It was the greatest triumph of preventive medicine that the world had ever known. A few months ago, the speaker said, he had the good fortune to listen to an account by a distinguished foreign physician, of the work at Panama whence he had just returned. After speaking with warmth of the general conditions, he said impressively, "The successful completion of the Panama Canal *depends on one man.*" If the measures admirably planned and carefully carried out by Colonel Gorgas fail, if there is a moment's relaxation, if the old epidemics recur, it will be impossible to find laborers, and the work will fail again as it did before.

Another opportunity for public usefulness in this country for which the training of the physician was peculiarly valuable was the career of the legislator. One had but to consider the few examples already mentioned of the various ways in which medical knowledge and skill were of value to the State, to realize how useful the education of a physician might be as a preparation for public life.

It was doubtless true that the development of the purely scientific branches of medicine together with the multiplication of specialties had resulted in a relative diminution of the number of family physicians in the old sense of the word, and had, in so far, limited the public influence which the old-fashioned general practitioner formerly exerted among his patients. But on the other hand, there had developed many wholly new problems which were calling the physician more directly into public life. If, perhaps, the wholesome influence of the family doctor was less felt in the community than it once was, yet the opportunities for public service had greatly increased.

The knowledge gained during the past forty years had taught us that we could accomplish far greater results by preventing disease than by attempting to promote recovery from that which had already started; it had taught us that a large proportion of the gravest maladies from which humanity suffered were acquired through our ignorance and carelessness and unclean habits; and with regard to many of these diseases, it had given us efficacious methods of prevention. Prophylaxis was the watchword of the day.

Dr. Thayer then spoke of the organization and aims of the American Medical Association, which was composed of a body of medical men united in the cause of truth and for the benefit of humanity—the deliverance of the public from disease. He asked why the recommendations of such an association should not have the force of laws, and said that it was owing to the lack of comprehension on the part of the public of the nature and aims of medicine and of physicians, citing a number of examples of such ignorance and of the opposition to measures of public health resulting therefrom. Many misconceptions, he said, arose from the strange atmosphere of mystery which so often surrounded medicine. From time immemorial the art of medicine had been connected in the mind of man with the supernatural and the divine. Medicine had been regarded rather as a matter of faith than as an art resting on a scientific basis. People spoke of their "belief" in this, that, or the other "system" of medicine, and on the basis of such "belief" recklessly handed over their bodies to some individual who asserted that his practice was based on a theory or system revealed as by inspiration to some fortunate mortal, perhaps yesterday, perhaps two hundred years ago. This blind faith in systems was not so far removed from the faith of the savage in the magic of his medicine man. This was partly the fault of physicians themselves who wrote prescriptions of little value, which they would not dream of taking themselves, letting the patient believe that they cured him of the transitory self-limited malady.

The same results could be achieved without misleading the patient one iota. It was perfectly possible to treat patients as we would be treated ourselves. It took a little longer; it involved a little more explanation; but the result was much safer and surer. Truth was as sacred a duty in medicine as anywhere else in life. As a matter of policy, as Cabot had pointed out, it was almost a necessity, for whatever might be true in other spheres of life, the doctor's lie was always detected.

Another widespread error to be combated was the common feeling of the public that the practice of medicine was purely and simply a trade. Viewed in this light the practitioner could but be often an object of suspicion. His methods and his word were doubted. The best part of his influence was gone. Most physicians, indeed, were obliged to depend on their fees, as most clergymen were obliged to depend on their salaries, for their daily bread. They must provide, not only for themselves, but often for their families. But there were very few physicians who entered into the practice of medicine with the idea of laying up wealth. There were happily exceedingly few to whom medicine was a trade. The man to whom the scientific and humanitarian aspects of medicine meant nothing; the man who practised solely for what he could make; the man who found no interest in medicine outside of that which he put in his pocket; that man was on a level with the conscienceless quack, and the sooner he left the profession the better for it and for the public. He deprecated the tendency, which he said existed among some otherwise honest and honorable men, to regulate the fees according to the means of the patient. Everyone should have a fixed maximal charge which should not be exceeded no matter what the wealth of the patient. He might often be obliged to charge less, but to demand exceptional recompense from the millionaire because of his wealth was to make medicine a trade.

Another duty of grave public import was the instruction of the public with regard to the necessary measures of prophylaxis in connection with infectious diseases. General

laws and sweeping public measures were of themselves insufficient to prevent the spread of such diseases as malaria, yellow fever, plague, cholera, and typhoid fever. It was only through the cordial and general cooperation of the practising physician with an enlightened public that efficient prophylaxis could be established. To combat the spread of preventable infectious diseases there were needed, he said, (1) an enlightened public, (2) a conscientious and united medical profession, each member ready to do his duty as an individual and especially to work in cordial cooperation with (3) central and local boards of health under the direction of trained sanitarians. The organization of all these measures depended, in the end, on the results of the individual efforts of physicians. The education of the public could be accomplished only by us; and it was our duty privately, publicly, day in and day out, to explain to the people the rules of self-protection.

Finally it was the physician's duty to seize upon the opportunity which might come to him as an individual to help forward the movement for better instruction in the schools of medicine by increasing the means for practical clinical experience. Dr. Thayer said that this could only be done by admitting students to serve as clinical clerks in the hospital wards. In these matters physicians must teach their nonmedical friends. When they realized that the hospitals needed medical students as trained assistants, as a part, really, of the staff; when they realized that the students needed hospital experience to make them capable physicians; when they realized that they owed this training to the physician in order to protect themselves and the public; then and then only would the old opposition to the instruction of students in the wards of hospitals disappear.

In conclusion, Dr. Thayer said: "The mention of these few opportunities for public service, opportunities which come to us all as physicians, should but impress on our minds the thought with which these remarks opened, namely that the physician is, from the very nature of his calling, essentially a public character. And however modest may be our field of work, our responsibility should always be before us. On our learning, on our progressiveness, on our alertness, on our honesty, on our fearlessness, on our perseverance, hang not only our own welfare, but that of the general public; in other words, that of our country, in much higher degree than we often realize. It is a heavy responsibility. Of much in the past we may be proud. There is much in the present on which we could improve. And the future? What shall that be? The answer lies with us."

Oration on State Medicine.—Dr. CHARLES HARRINGTON of Boston delivered this address, taking for his subject "States' Rights and the National Health." The movement now in progress for the establishment of national control of the public health was no new thing, he said. It began in 1871, when, at the annual session of the American Medical Association, resolutions were presented that steps should be taken to form a national health council, auxiliary to the association as a section on hygiene. At the next meeting, suggestion of an appeal to the Government to establish a national department of health to be supervised by the association met with objection, but the committee to which the resolutions presented at the previous meeting had been referred was continued as the Section on State Medicine and Public Hygiene. In 1874 a resolution was passed in the Section on State Medicine providing for an appeal to Congress, and a committee was appointed to report the next year a draft of a bill to establish a National Department of Health. At intervals, during all the years since elapsed, bills had been offered in Congress to the attainment of that end and had been duly pigeon-holed. The nearest approximation to a successful outcome of the agitation was reached in 1879, when, after the country had been aroused by the extensive epidemic of yellow fever which occurred in 1878, a national Board of Health was established, authorized to investigate all questions concerning the public health, to give especial attention to the subject of quarantine, and to concern itself with the project of establishing a permanent national health organization. This body made a number of important researches and inquiries, but in 1882 its duties were restricted to the investigation of cholera, smallpox, and yellow fever, and then the appropriations for its necessary expenses began to be withheld; and eventually, in 1893, its official existence was terminated. Since 1893 the nearest approach to a national health authority had been the Marine-Hospital Service, which in 1902 was by act of Congress changed in name to the United States Public Health and Marine-Hospital Service. This organization had its original inception in 1798, when twenty cents per month was deducted by law from the pay of all seamen on American vessels entering from foreign ports, to be collected by the customs authorities and expended in the districts where collected for the relief of invalid seamen in hospitals or elsewhere. The Act of 1902, creating the Bureau of Public Health and Marine-Hospital Service, was preceded by one which provided for the establishment of the Hygienic Laboratory for the investigation of contagious diseases and matters pertaining to the public health. The duties and activities of the Bureau of Public Health were many and varied. In addition to the work for the performance of which it originally was established, it had general supervision of marine and interstate quarantine, it inspected vessels and immigrants, conducted physical examinations for a number of branches of the Government, collected data concerning the incidence of the various diseases dangerous to the public health in all parts of the world, and published reports thereon, assisted the States in controlling, suppressing, and preventing epidemics, examined all establishments engaged in interstate commerce in vaccines, serums, and antitoxins, conducted researches in medical zoology, biological chemistry, pharmacology, bacteriology, and other fields of sanitary science, and engaged in other miscellaneous investigations. Once each year, and oftener if requested by not less than five State health authorities, the Surgeon-General was required by law to call the conference of State and Territorial Boards of Health for the consideration of matters pertaining to the public health, but the Government assumed none of the expenses of these annual conferences, either for travel or for subsistence. Every attempt thus far made to confer on the national Government any real power to supervise the national public health had found the Constitution in the way. The very first attempt made by the United States to enact a quarantine law met with opposition, and a section to empower the President to enforce quarantine was rejected by a two-thirds vote, as an interference with the States' police powers; but the provision to authorize the Government to assist the States in excluding yellow fever—for it was in consequence of an outbreak of that disease that the bill was introduced—was accepted. The doctrine of States' rights was an outgrowth of the ancient principle that an Englishman's house was his castle, but the individual had no right, Dr. Harrington said, to conduct himself and his house in such a way as to be a nuisance or a menace to the health of his neighbors; then the community would step in and restrain him. Similarly, a municipality which by neglect of sanitary observance had become a menace to the health of its neighbors would be taken in hand by the authorities of the State and compelled to pay due regard to the rights of its citizens as a whole. Why should the parallel end here? When a State neglected the health interests of its citizens and permit epidemic disease to rage without restriction, to the peril of the

health of its neighbors, should not the community of States have the right to interpose? It should, of course, but it had not. The regulation of the national public health was not delegated to Congress, and hence the right to be a national nuisance was reserved to the States. Dr. Harrington cited numerous instances in which the Federal Government had interfered with the rights of individual States, but no one complained, yet it carefully abstained from any suggestion of such interference when the matter was one of health. The pure food law, he said, was not primarily a health law, and from the standpoint of health it was not needed, but it was enacted in order to load the general government with work which many of the individual States were unwilling to undertake. We were a commercial nation, he said, and human life and freedom from the preventable diseases of mankind were no part of foreign or domestic trade, therefore the Government concerned itself little with them. It was, however, otherwise with the diseases of plants and of the lower animals, for the products of the fields and farms and cattle ranges brought us great wealth. Hence Washington spent millions annually on plant and animal physiology and pathology. It was good business to expend thousands and tens of thousands against sheep scab and swine cholera, but the eradication of human tuberculosis appeared to be unworthy of national effort, if it entailed national expense. The duty of medical men in this matter was obvious. They should take the lead in arousing an educated public interest in the national health. Of great value, as shown in the agitation for the law relative to foods, for the establishment of sanatoria, and for ordinances against the spitting habit, were popular lectures, magazine articles, and the sympathy of the press. Two years ago there was inaugurated at the Harvard Medical School a series of free public lectures, given on Saturday evenings and Sunday afternoons for four months, mainly on preventive medicine. The first series was a most gratifying success; the second so largely attended that at times more people were turned away than succeeded in securing places. The chief result was a widespread interest in public hygiene and a marked strengthening of the cordial relations which ought to exist everywhere between the profession and the public. The example set in Boston had been followed elsewhere with like results, and the more the habit spread the sooner would the advocates of a federal health administration see a successful outcome.

Whether the proposed service should take the form of a department represented in the Cabinet or of a division of an existing department with a commissioner for a chief was of no very great importance, although there was some very obvious objections to the suggestion of a separate department, which could hardly apply to that of a division; but department or division, it could properly have as its nucleus the present Bureau of Public Health and Marine-Hospital Service, to which should be added various existing bureaus scattered about under different departments—some not duplicating the work of others—and additional bureaus to be created. Its head should be charged with advisory powers in relation to other departments and to the States, and with supervisory and executive powers in matters pertaining to his own bureaus. Inasmuch as no one man could be expected to conduct so great an establishment with only the advice of his bureau chiefs, and inasmuch as the cordial cooperation of all the States would be absolutely essential to satisfactory achievement, the head of this department or bureau should have a national council consisting of one delegate from each State, appointed by the Governors or State boards of health for a term of years. Such a council should be composed of men of recognized standing in medicine, engineering, or other branch of learning which would be of assistance. It should be called together at least once each year and as much oftener as might appear to be necessary, and the expenses of each such meeting should be borne by the Government rather than, as now is the case with the annual conference of the State boards of health with the Surgeon-General of the Public Health and Marine-Hospital Service, at the expense of the States or of the delegates themselves. At each meeting the subject of the national health should be discussed and proposals for future work should be made and considered. Even though at times the meetings might not appear to be of great scientific value, at least they would serve to promote the cordial feeling that the individual States formed a part of the administration and exercised a proper influence.

SECTION ON PRACTICE OF MEDICINE.

DR. C. F. HOOVER OF CLEVELAND, OHIO, IN THE CHAIR.

Tuesday, June 2—First Day.

Chairman's Address: Paroxysmal Hemoglobinuria.—Dr. C. F. HOOVER of Cleveland, Ohio, made this address. He reported the cases of two young men, twenty-five years of age, both apparently in good health. One had attacks of paroxysmal hemoglobinuria for five years, while the other had these attacks but for sixteen months. These paroxysms were confined almost wholly to cold weather. In the one who seemed to have less sensitive blood they occurred usually during the time from October to May. The other patient was extremely sensitive to cold and had attacks even during the summer months if there was any cold weather; he had even had them occur in July. The attacks could be brought on by placing one foot in a vessel containing cold water. The time usually required to bring them on was about fifteen to twenty minutes. They placed the foot in up to the middle of the leg; the water was about 15° C. Soon the foot and leg would begin to feel as though they had been pounded. Then beginning with chills or rigor there would follow cyanosis of the lips and finger nails. In one patient there would appear macules, and in the center of each would be found a pustule; this was the only cutaneous manifestation. During the time of the chill there would be no elevation of temperature; with the beginning of the chill there would be a lowered temperature of about one degree per rectum; then the temperature would begin to rise, gaining its maximum about one and a half hours after. When the foot was placed in cold water the temperature was 98.5° F. At the time the foot was removed it would be 97.5° F. Following a chill which would last about twenty minutes there would occur this rise in temperature and in the course of an hour and a half it would register about 103° F. This temperature lasted a varying period of time, sometimes as long as three hours. The black urine was obtained often before the elevation of temperature occurred. They found that when the patients passed urine directly at or during the latter part of the chill, it was dark. Soon the urine was the shade of burgundy red. There was nothing found in the urine that was abnormal but oxyhemoglobin and some albumin. There were no red cells at all, no casts, nor blood pigment. When symptoms developed during the febrile stage, there was noted also some tenderness over the spleen. The problem that confronted them was, what had happened to these patients; how could they account for this hemoglobinuria? When the foot was placed in cold water and blood withdrawn from a vein, pink serum was found; before it had been straw colored. They demonstrated that this hemolysis occurred while the patient was chilled; it probably began before the patient was chilled. The hemolysis was completed before elevation of temperature began. They found that during the attack

the maximum blood pressure was unmodified and remained the same during the attack. The quantitative analysis made of urea, the nitrogen, the phosphates, chlorides, etc., was found to be the same before, during, and after the attack; there were absolutely no variations. He demonstrated the fact that one could not get hemolysis without the employment of cold.

Clinical Manifestations of Cardiovascular Disease.—Dr. Frank A. Jones of Memphis, Tenn., read this paper. He said that to the pathologist arteriosclerosis had been the enigma of medicine. There was an hypertrophy of an organ here, and an atrophy of an organ there, as for example the contracted kidney and the enlarged heart. They met with obliteration of an artery in one place, and contraction and dilatation in another. The old adage that a man was as old as his arteries needed a thorough revision commensurate with the age in which they were living. Arteriosclerotic patients he said were barometers of temperament. He believed that many a case of angina cerebri masqueraded as apoplexy and paralysis. Acute hepatic colic in the absence of gallstones might be angina hepatica. Khrel struck the keynote when he said that in his clinical experience and in his post-mortem findings, arteriosclerosis had its starting point in the splanchnic blood-vessels. When they came to consider the therapeutic measures resorted to he knew of no disease in which they were more abused. Cardiovascular tonics were given as injudiciously as digitalis in cardiac vascular disease. Not every case demanded the nitrites or the iodides. The all-absorbing question now was, how was the blood pressure? It had almost become a fad. Various instruments of precision had been extolled in testing pressures. The trained clinician could use these instruments of precision when they would become valuable adjuncts; but in the hands of the inexperienced, the average physician, they frequently became instruments of imprecision and prejudiced him in his findings. He believed in the use of these instruments of precision, but cautioned them not to forget the old reliable instruments, the fingers, eyes, ears, which God had given them.

Cardiac Aneurysm, with a Report of a Case Associated with Mediastino-Pericarditis.—Dr. James B. McElroy of Memphis, Tenn., read this paper. He said very little attention had been given this subject in the text-books. In the general literature of to-day three different conditions were spoken of under the term aneurysm of the heart, viz., (1) aneurysmal dilatation of the coronary arteries, which might be multiple or single, which might vary in size from a mustard seed to a cherry, and which was due to sclerosis or embolism of these vessels; (2) aneurysm of the valves of the heart, by which was meant a cavity in the substance of the valve, containing pus or other inflammatory products, clotted blood, or debris; (3) aneurysm of the cardiac wall. The first two conditions were almost wholly of pathological interest, but their inclusion under the term aneurysm of the heart had somewhat confused the statistics upon the subject. It was to the third condition, or aneurysm of the cardiac wall, that he referred in his paper. Only two such cases had been contributed to general literature by American writers during the thirteen years prior to 1904. In 1867 Pelret collected 87 cases from the world's literature up to that time. There were probably now in the literature reports of 300 cases. Dr. McElroy then gave a complete report of a case which was a noteworthy one in its excellent representation of this type of case. At autopsy there was shown springing from the apex of the left ventricle anteriorly a large dilatation about the size of an orange. There was a communication with the left ventricle which was marked by a well defined fibrous ring two inches in diameter. The width of the swelling at its greatest diameter was five and one-half inches, in depth three inches. The sac was formed by roughened endocardium and myocardium. The cavity was filled with dark clotted blood. These aneurysms varied in size, from that of an English walnut to the size of a child's head. They were usually single but they might be multiple. The opening into the cavity of the heart was usually large, but it might be small, rendering the aneurysm sacular. The symptoms might be any one of those characteristic of the three clinical groups of myocardial disease, viz., those in which death occurred without previous indications of heart trouble, and might be sudden; second, cases in which there was arythmia, cardiac asthma, etc.; third, cases with general arteriosclerosis and hypertrophy and dilatation of the heart. It was surprising how few cases terminated in rupture of the sac. By far the most frequent termination was from cardiac insufficiency from myocarditis.

Dr. Robert B. Preble of Chicago presented a boy with an aneurysm of the heart. The boy was shot, the bullet entering a little to the left of the sternum. There were at first no cardiac disturbances, but subsequently there developed an aneurysm of the outer portion of the left ventricle.

Dr. James B. Herrick of Chicago called to mind the case of a colored man, thirty years old who, at autopsy, presented in addition to valvular trouble a mediastinal pericarditis and a chronic fibrous myocarditis. In one of the areas of cardiac softening and near the tip of the left ventricle had occurred a rupture of the myocardium, evidently preceded by an aneurysmal dilatation; this rupture instead of occurring directly into the open pericardium occurred in the weakened spot between the two adherent surfaces of the pericardium. This little sac of pericardium at the time of death had reached the size of a goose's egg.

Dr. Butler of Chicago said that the close relationship that existed between fibrous myocarditis, pericarditis, and aneurysm had been well recognized. He recalled the case of a child nine or ten years of age whom he had under observation a few years ago. This child had a congenital pulmonary stenosis which was complicated by an acute endocarditis involving the pulmonic valve. At autopsy there was noted a distinct bulging of the anterior portion of the conus, the bulging being as large as a pigeon's egg. There had apparently been an inflammatory condition of the conus, a septic endocarditis which in conjunction with a fatty degeneration had resulted in this bulging at this point producing an aneurysm in this child.

Dr. James B. McElroy of Memphis, Tenn., believed that the only possible time for diagnosing these conditions was when the aneurysm was favorably located. He had observed or seen reported in the literature that out of 90 cases diagnosed postmortem, only one had been diagnosed antemortem.

Clinical Aspects of Tumors of the Mediastinum.—Dr. Frank Smithies of Ann Arbor, Mich., read this paper. The records of hospitals and post-mortem rooms showed that mediastinal neoplasms, whether primary or secondary, were uncommon. Of more than 7,500 autopsies upon patients dying from all causes, at the Marine Hospital, Cronstat, one in fifty exhibited mediastinal growths. It had been estimated that one medical patient in ten thousand showed mediastinal tumor of some form. Of more than 25,000 general hospital patients at the University of Michigan Hospital, there had been perhaps a dozen cases of tumor of the mediastinal structures. It was extremely interesting, therefore, that within the past year and a half they had under observation four cases of mediastinal growths, and, in addition, two cases where the diagnosis was suspected. Perhaps this increased ratio was due to the increasing perfection of clinical aids in the examination of patients. After briefly reviewing the anatomy of the mediastinum, he said that it could be readily seen that the symptom complex presented by any class of mediastinal growths was largely dependent upon the size and position of such growths. The great majority of these tumors in this region arose in the anterior space of the inferior division. They were most commonly car-

cinoma, sarcoma, or lymphoma, and had their origin in thymus remnants, lymph glands, and connective tissue. In the middle space, the primary focus was generally the lymph tissue. The tumors in this region might be of almost any variety. In the posterior space primary tumors were relatively uncommon. They might arise from lymph tissue, from the lung or its adnexa, or from the esophagus. In general mediastinal neoplasms produced signs and symptoms as the result of the pressure they exerted upon the bony framework, blood-vessels, or nerves or air-containing tissues. The four cases which furnished the material for the communication were interesting from many standpoints; one of them, a case of chronic cyanosis with arythmia, was unique. The diagnosis in all instances was presumptive, in so far as absence of post mortem was concerned, but sufficient evidence was at hand to make the conditions reasonably certain. All the patients were adults. There were three males and one female. The youngest was forty-three, the oldest sixty-seven. They came to the hospital with such ailments as heart disease, asthma, chronic bonchitis, Bright's disease, laryngeal obstruction. Three of the patients appeared to have affections primary in the thorax. In the female the process was evidently secondary. Two patients had rapidly-spreading, malignant growths, with death supervening within less than a year after they came under observation. In the remaining cases, the neoplasms were apparently of slow growth, and the patients had been affected for some time. A report of these four cases in detail followed.

Dr. Thomas D. Coleman of Augusta, Ga., said that the condition was a very rare one, especially among the negroes. They were very subject to syphilis, tuberculosis, and adventitious growths in general, but he had never seen a single case of mediastinal tumor occurring in a full-blooded negro. He had seen two cases occurring in mulattos; the others that he had seen were whites and males. The ages were anywhere between thirty and sixty years. In one case there was cancer of the mediastinum; the diagnosis was confirmed at autopsy. In another case, not verified by autopsy, there was a distinct paralysis of the left vocal cord which was suspected to be the result of a gumma. This patient was placed upon specific treatment, and he got well. Whether a correct diagnosis had been made or not, he said he was not prepared to state.

Dr. Alexander Lambert of New York spoke of one particular case that had puzzled him years ago, and which turned out to be a sarcoma occuring at the junction of the vena azygos major and the superior vena cava. The pressure symptoms produced were very peculiar; when the patient was lying down he was blue from the clavicles up, the rest of the body being normal in color. But when the patient sat up he would be blue between the knees and the cavicle, the rest of the body being normal in color. The legs remained white at all postures. It seemed that this tumor must have acted as a ball valve. In working out the circulation of the chest, he agreed that the tumor was at the point mentioned. It was a primary sarcoma of the right ventricle of the heart. Dr. Lambert said that he had seen quite a number of mediastinal tumors at Bellevue Hospital, and he had been struck by the fact that the symptoms produced were paroxysmal in character. There would occur a cough, like whooping cough, without apparent reason or cause for the excitation. The pain and dyspnea occurred in paroxysms; the whole thing would come on and go without any reason, and apparently in spite of what they did or because of what they did.

Dr. Robert H. Babcock of Chicago told of a case of mediastinal tumor that he had seen one year ago in the interior of Wisconsin, and the diagnosis of sarcoma of the mediastinum was substantiated post-mortem. The patient had been treated for pulmonary tuberculosis, and this illustrated the fact that a physician could mistake such a condition for pulmonary tuberculosis when there was a distinct tumefaction of the front of the chest, instead of the depression which was so characteristic of the phthisical habitus. The upper portion of the chest was bulging, and there were signs of intrathoracic pressure marked. The patient had also been treated for syphilis. Intrathoracic disease could not always be diagnosed by the physical signs alone; one must take into consideration the symptomatology and the history as well.

Clinical Observations on Absolutely Irregular Hearts.—Dr. W. H. Hewlett of San Francisco read this paper. The characteristics were: (1) Absence of normal auricular contractions; (2) irregularity itself; (3) permanency. The evidences of the absence of normal auricular contraction were to be found at the apex, the jugular pulse, the murmur of mitral stenosis, the esophageal cardiogram, and the electric cardiogram. In the mitral stenosis murmurs there was presystolic accentuation in regular hearts; whereas, in irregular hearts there was no presystolic accentuation. It was important that physicians should bear in mind the fact that in absolute irregular hearts they must not expect presystolic murmurs. Dr. Hewlett gave an analysis of 30 cases, in 24 of whom the ages were given. Five were below 40 years, 14 were between the ages of 40 and 60; while five were above 60. In 10 the lesion was a mitral insufficiency alone; in 5, a mitral insufficiency plus a stenosis; in 2, a mitral stenosis alone; in 3, an aortic lesion alone; and in 1 there was an adherent pericardium. With regard to the etiological factors, rheumatism occurred in 12, alcoholism in 10, hyperthyroidism in 2, chronic nephritis in 1, and arteriosclerosis in 1. About one-third of the patients died or were permanently disabled.

Malignant Septic Endocarditis.—Dr. John A. Witherspoon of Nashville reported the findings in two such cases. The patients were under observation last year. One was a case of septic malignant endocarditis following a carbuncle, which first developed on the back of the neck. The other was a case of surgical kidney, in which there were no appearances of endocarditis whatever until after the removal of the kidney. Then, in a short time, a malignant type of endocarditis developed and the patient died in a few days. With regard to the surgical kidney case it had occurred to him that the energy necessary in handling the kidney so deeply situated, the posterior operation having been done, might have caused an expression of the poison into the blood-vessels, thus causing the carrying of a septic embolus to the heart.

SECTION ON SURGERY AND ANATOMY.

Tuesday, June 2.—First Day.

Introductory Remarks by the Chairman.—Dr. Rudolph Matas of New Orleans said that no more fitting manner of opening the Section on Surgery and Anatomy could be found than by paying tribute to the memory of the great American surgeon whose labors had ceased during the past year—Dr. Nicholas Senn. Surgeon, teacher, author, world-wide traveler, writer, beloved and respected by all who knew him, his name was destined always to remain bright in the annals of surgery of the country and of the world. His removal from a sphere of useful activity was a deplorable event in the annals of surgery.

Results of the Transplantation of Blood-vessels and Organs.—Dr. Alexis Carrel of New York read this paper. He demonstrated a series of lantern slides which showed how little scar remained after the section and reunion of the vessel by the end-to-end method of ligature which he had devised. Some of these slides were taken from artries in which the suture had been placed more than a year ago, and the line of union in almost all cases was invisible. The important points to which he called attention were as follows: The substitution of a segment of artery or vein, supposedly diseased, by fresh arterial or venous segments of similar size, if taken from an animal of the same species, was successful. If a segment of vein were transplanted into an artery the vein usually adapted itself to

the new arterial function. If kept in sterile tubes and in a temperature just above freezing it had been shown without any possibility of doubt that segments removed either from living animals or recently dead human bodies could be used for bridging defects even after they had been kept for a month. He said that in transplanting parts it was necessary to use care to deal with the mass of tissue which was supplied by certain main trunks. Obviously, if the mass to be transplanted derived its arterial supply from main arterial trunks which did not become the subject of section and suture the parts would slough. To demonstrate this, he showed a photograph of a dog in which the ear, side of the neck, glands, and accompanying tissues had been successfully transplanted because they were supplied by the carotid.

Physiologic Aspects of Blood-vessel Surgery.—Dr. C. C. Guthrie of St. Louis read this paper. He described in some detail the technique as modified by himself and Carrel. Aside from the general proposition that the intima should always be perforated, and that needle and thread in strict proportion to the size of the blood-vessels should be employed, he deemed the most important consideration to lie in the extreme gentleness of handling the tissues and the great care taken in protecting them from drying. Any light pair of forceps suitably protected could be employed without injury, and paraffin oil in his hand had proved more satisfactory than vaseline. He stated that in his most recent work none of the so-called physiological salt solutions were employed. Gentle pressure exerted at the line of anastomosis always stopped any slight hemorrhage which might occur around the sutures. There must of necessity be more or less fibrin deposited at the anastomotic point due to the incomplete juxtaposition of the ends, and more particularly through the presence of the stitches which constituted so much foreign material. The blood platelets which provided the thrombogen had long been known to flock to the region of an irritant, and calcium being present in abundance in the plasma the conditions were most favorable to clotting. As to the size of the vessels which it was possible to operate upon satisfactorily, failures should not occur in those having a diameter of 2 mm. In smaller vessels there was apt to occur an amount of clotting which would appreciably diminish functional activity. The use of a non-essential vein, or of cold storage segments, or those which had been preserved in formaldehyde was an important and interesting side issue in the technique which was empirically known to be successful. The transplantation of limbs might be considered an established fact, because it could be done without having gangrene develop. Heads had been transplanted after removal from one dog into the neck of another, and it was shown that such heads preserved for many hours under the stimulus of an alien circulation certain bulbar and cerebral functions. The cerebral circulation was interrupted for twenty-nine minutes. The author believed that the chief point of difficulty in the transplantation of such organs as the kidney lay in the fact that up to date it had been necessary to wash them out with so-called physiological salt solution in order to prevent the contained blood from clotting. This process had probably advanced to a point of appreciable danger at the end of forty minutes. He had found it difficult to preserve the normal histology of transplanted kidneys after they had been washed out, even though circulation had been reestablished without postoperative reaction. In order to prove this point, which he considered a most important one, he had tried the experiment of simply injecting 10 c.c. with so-called physiological salt solution, and had found that it killed the animals. Either some less injurious form of irrigation must be devised or the time of operation must be materially shortened before great progress could be made in the transplantation of kidneys and similar tissue masses.

Review of Recent Contributions on the Surgical Treatment of Aneurysm by the Intrasaccular Method (Endoaneurysmorrhaphy).—Dr. Rudolph Matas of New Orleans read this paper. He said that up to June 1, 1908, eighty-five cases had been reported. They had been contributed by forty-nine American surgeons and three foreign surgeons. Six years ago only five cases had been operated upon by this technique, the rapid progress of which had been gratifying in that it suggested that the operation was based upon sound surgical principles. Most unfortunately there had been a very great misunderstanding and misrepresentation of the technique in Europe, except in Spain and Italy, where it was not at all understood. There were seventy-eight recoveries, but it was only just and fair to the future of the operation to state that in two cases only could death in any sense be attributed to the operation itself. No less than four surgeons had attempted to use the technique in the treatment of aneurysms of the abdominal aorta. This laid a mortality of 2.3 per cent. to the operation proper. Very important details were being brought to light because of the heretofore neglected study of the interior of the aneurysmal walls. The fundamental principle of the operation was that the endothelial lining is analogous to and continuous with the serosa. He referred to Scarpa's law, and stated that it was challenged by the modern operation and also by the use of the suture. Hemostasis, which was essential to success, increased in difficulty as the aneurysm approached the great vessels of the trunk. Proximal and digital compression of the main trunk was usually valueless and dangerous, because of the presence of the collateral branches which opened very near the sac. Thus abdominal section for the control of the iliacs was usually indicated in femoral aneurysms. Before using the obliterative technique upon aneurysms of the carotid it was wise to study the effect of temporary interference with the cerebral circulation.

Successful Ligation of the Innominate Artery.—Dr. W. B. Burns of Memphis read this paper. He presented a critical review of the status of this operation, dividing the reported cases in five groups. His was the only successful case of ligation of the innominate artery alone where the vessels were diseased. In this particular instance there was a clear syphilitic history. The ligature was made with heavy silk, superficial suppuration ensued, and on the thirtieth day the ligature was removed. The patient, a young negro man, was now, ten months from the date of operation, in perfect health.

Dr. J. E. Sweet of Philadelphia said it was singular that until the last five years nothing had been done in this work, although it had been begun as early as 1657, when transfusion was first practised. He said that while the suture method might be all right, for the permanent work he preferred to use any form of small cylinder by which the accurate juxtaposition of the intima could be relied on, because it was more rapid and therefore more suited to laboratory experiments.

Dr. J. F. Binnie of Kansas City said that he considered the use of catgut in arterial work exceedingly dangerous.

Dr. Danna of New Orleans described seven cases of aneurysm in which he had used the Matas technique. He said that a general misunderstanding existed among the profession as to the necessity of drainage. If the sac was entirely lined by serosa none was indicated. Fusiform aneurysms, contrary to the usual belief, were not generally spindle-shaped, but were sacciform.

Dr. George Crile of Cleveland said the technique of Carrel and Guthrie was eminently practical.

Dr. Matas, in closing, said that Dr. Binnie's objection to the use of catgut resulted from a misconception of the form of catgut which he, Matas, had advocated. Plain catgut would not do, but fine chromic gut, either No. 0 or No. 1, had been used with admirable results.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

FLORIDA BOARD OF MEDICAL EXAMINERS.

Ocala, April 13 and 14, 1908.

ANATOMY.

1. Describe the humerus.
2. Describe the hip-joint.
3. Give a general description of the lungs.
4. Locate and describe the spleen.
5. What is the diaphragm.
   Name the principal openings in the diaphragm.
6. What is the circle of Willis.
7. Describe the muscles of the eyeball and give their nerve supply.
8. Describe the pons Varolii.

PHYSIOLOGY.

1. What is the mode of production of heat in the body.
2. State the function of the retina.
3. What do you understand by blood pressure?
4. How is the sensation of pain produced?
5. Describe the physiology of rectal feeding.
6. How are the vocal sounds produced?
7. What are the functions of the pancreas?
8. Describe the pons Varolii.
9. Describe the normal heart sounds.
10. Name the solids in the urine and state the approximate amount of each voided daily by an adult.

SURGERY.

1. Define and differentiate between bacteria, ptomaines and toxins. Name three antiseptics which will destroy pyogenic bacteria.
2. Describe, briefly, inflammation, cellulitis, suppuration and gangrene.
3. Give the treatment of syphilis, beginning with the primary lesion and following it out to a cure.
4. Describe synovitis, arthritis, and ankylosis.
5. Name five varieties of tumors, and differentiate between a fibrous and a fatty tumor.
6. Give the diagnosis and treatment of fracture of the neck of the femur.
7. Name the various dislocations of the shoulder-joint.
8. Give the usual cause, diagnosis, and treatment of hip-joint disease in children.
9. What symptoms would be diagnostic of an abscess of the antrum of Highmore? How would you enter this cavity for the purpose of drainage and irrigation?
10. How would you make a differential diagnosis between alcoholic, apoplectic, and uremic coma?

GYNECOLOGY.

1. Why are girls never hysterical before puberty?
2. Explain difference between hysteria and catalepsy.
3. Explain symptoms and determine a positive diagnosis of retroversion of the uterus.
4. What is menorrhagia? Explain causes and outline treatment.
5. Give in full your treatment of gonorrheal endometritis.
6. What are the immediate and remote results of laceration of cervix uteri not repaired?
7. What are the most common kinds of ovarian tumors, and which attain to great size?
8. What conditions justify ovariotomy?
9. Give symptoms and treatment of cystitis.
10. Give symptoms and treatment of carcinoma mammæ.

THERAPEUTICS.

1. Acids. Into what classes divided, and indications for their use?
2. Scilla. In what class of remedial agents does it belong? Officinal preparations and doses of the same.
3. Digitalis. State when in your opinion it is contra-indicated, and name the agents with which it is incompatible.
4. Give child (1 year), and adult, dose of acetanilid, tincture of opium, tincture of gelsemium.
5. Strophanthus. Officinal preparation and dose. In what class of cases used.
6. Anthelmintics. Name the ones most generally used, and in what doses.
7. Opium. Name its alkaloids. Outline treatment in a case of acute opium poisoning.
8. What are antidotes, and into what classes would you divide them?
9. Antipyretics. For what do you use them? Name the ones you generally use.
10. Name a drug which when taken internally causes contraction of the pupil of the eye, and one when applied locally.

OBSTETRICS.

1. Describe the anatomic differences, not including the sexual organs, between the male and the female figure.
2. Give an anatomic description of the genital organs of the female and state the function of each organ.
3. On what signs may a diagnosis of occipito-posterior position be based?
4. Make a diagnosis of breech presentation and state the principles that should govern its management.
5. Mention the most reliable signs of pregnancy before the fourth month.
6. What conditions justify the induction of abortion? Mention the methods that may be employed.
7. What is pathology of puerperal mastitis? State how puerperal mastitis should be treated.
8. Describe the nature, causes, and treatment of puerperal eclampsia.
9. Define version, mention its varieties and describe its performance.
10. What is ectopic pregnancy? Mention the dangers of ectopic pregnancy, and state how it should be treated.

CHEMISTRY.

1. State the law of multiple proportions.
2. Give the formula for ammonia, and give physical and chemical properties of ammonia water.
3. How does nitric acid act on animal matter, and what are its properties generally?
4. What acid is used in preparing sulphite salts?
5. Describe three reliable tests for albumin in the urine.
6. Give antidotes for poisoning by match heads.
7. Describe treatment for a case of poisoning by rat poison.
8. Describe treatment for poisoning by bichloride tablets.
9. What common antidotes are usually found around the house for caustic potash poisoning?
10. What is the dose of apormorphine, how administered and for what purposes?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

FLORIDA BOARD OF MEDICAL EXAMINERS.

Ocala, April 13 and 14, 1908.

PHYSIOLOGY.

1. *Heat is produced in the body,* by: (1) Muscular action; (2) the action of the glands, chiefly of the liver; (3) the food and drink ingested; (4) the brain; (5) the heart; and (6) the thermogenetic centers in the brain, pons, medulla, and spinal cord.

2. *The function of the retina,* is: To receive the image of objects and cause nervous stimuli to convey the same to the brain.

3. By the term *blood pressure* is meant the pressure on the blood due to (1) the ventricular systole, (2) the elasticity of the walls of the arteries, and (3) the resistance in the capillaries.

4. Pain is due to excessive stimulation of the sensory nerves, including those of special sensation, particularly those concerned with touch and temperature. It is, however, believed by some that pain is a distinct sensation, independent of other sensations.

5. "That all mucous membranes are capable of absorbing certain materials from their surfaces and passing them into the blood-vessels or lymphatics has long been recognized; but it is only of comparatively recent years that this knowledge has been applied extensively to the purpose of nourishing patients by means of the rectum, and the fact is now established that sufficient aliment may be absorbed from the mucous membrane of the rectum or sigmoid flexure alone to sustain life for a considerable period, amounting in some cases from four to seven weeks. Moreover, the rectum may be utilized for accessory feeding for many cases in which the stomach is able to digest some food, but not in sufficient quantity to prevent emaciation. Whenever rectal food enemata are employed certain principles should be observed: (1) The rectal surface must be cleansed from all mucus and feces. (2) The irrigation of the rectum should be allayed as far as possible. (3) The quantity and quality of food thus administered should be so regulated as to avoid exciting peristalsis, and yet allow of the complete absorption of one injection

before another is given." — (Thompson's *Practical Dietetics.*)

6. The *Vocal Sounds are produced* by an expiratory blast of air being forced through the narrow chink between the true vocal cords. The current of air sets these vocal cords in vibration; and these vibrations are communicated to the air in the upper air passages. The pitch of the sound produced depends upon the rapidity with which the vocal cords vibrate.

7. The *functions of the pancreas* are: (*a*) The secretion of the pancreatic juice, which (1) changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; (2) converts starch into maltose; (3) emulsifies and saponifies fats; and (4) causes milk to curdle.

(*b*) The manufacture of an internal secretion.

The *ferments secreted by the pancreas* are: Trypsin, amylopsin, steapsin, and a milk-curdling ferment.

8. The *physical properties of blood*: Fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100° F.).

The *constituents of the blood* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

The *red blood corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin.

Their *function* is to carry oxygen from the lungs to the tissues.

The white blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

There are also *platelets*, which are very small, colorless, irregular shaped bodies; they are about one fourth the diameter of a red corpuscle. Their function is not determined; it is possible that they take some part in the coagulation of the blood. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood.

Plasma conveys nutriment to the tissue; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

10.

SOLIDS IN THE URINE.	VOIDED PER DAY.
Organic—	
Urea	about 500 grains.
Uric acid	about 10 grains.
Hippuric acid	about 6 grains.
Creatinin	about 12 grains.
Extractives	about 150 grains.
Inorganic—	
Sodium chloride	about 150 grains.
Phosphoric acid	about 37 grains.
Sulphuric acid	about 24 grains.
Oxides of calcium, magnesium, sodium, and potassium	about 20 grains.

SURGERY.

1. *Bacteria* are unicellular vegetable organisms, nonnucleated, composed of protoplasm, exist nearly everywhere, and *may be* the cause of disease.

Ptomaines are alkaloids produced by the action of bacteria on dead animal matter.

Toxins are nonalbuminous, poisonous substances, excreted by bacteria.

Three antiseptics which will destroy pyogenic bacteria:—bichloride of mercury, carbolic acid, mercuric iodide.

7. The *various dislocations of the shoulder-joint* are:—(1) Subcoracoid—forward, inward and downward. (2) Subglenoid—downward, forward, and inward. (3) Subspinous—backward, inward, and downward. (4) Subclavicular—forward, inward, and upward.

8. Hip-joint Disease in Children.—The *usual cause* is tuberculosis.

The *early symptoms of the disease* are: Night cries; lameness in the morning; a slight limp; tendency to become tired on slight exertion; wasting; spasm; pain; swelling; and deformity (either real or apparent).

The *diagnosis* is to be made from: (1) *Growing pains*, which are not increased by movement. (2) *Sacroiliac disease*, in which the pain is not increased by movement of the hip-joint. (3) *Congenital dislocation of the hip*, in which there is great mobility of the joint, and no pain on pressure. (4) *Spinal caries* and *Psoas abscess*, in which there are evidences of disease of the vertebræ; and the pus is located in the groin, external to the femoral vessels. Other conditions from which it may be necessary to diagnose hip-joint disease are: Infantile paralysis; lordosis, from rickets; and rheumatism.

Treatment: Complete rest in bed; extension, using just enough weight to prevent the muscles from contracting; fresh air, tonics, and good food; immobilization by means of plaster-of-Paris dressing; iodoform injections. If these fail, resection of the joint may be necessary.

9. Abscess of the antrum of Highmore, may be *diagnosed* by: (1) The presence of pus flowing over the middle turbinate bone, when the patient has his head bent downward and forward; after being wiped away, pus still continues to flow. (2) Transillumination will show a dark shadow. (3) Aspiration through the canine fossa.

The antrum can be entered for the purpose of drainage and irrigation: (1) through the canine fossa; (2) through the socket of the first or second bicuspid tooth.

10. In *alcoholic coma*:—The patient can generally be aroused; the coma is not, as a rule, complete; the face may be flushed; the pupils are normal or dilated; the respirations are normal in frequency, but deep; the skin is cool and moist, and the body temperature may be below normal.

In *apoplectic coma*:—There is generally paralysis of the head and upper limbs; and in left-side lesions there may be aphasia; the pulse is slow and full; the respirations are at first slow, regular, and stertorous, later on becoming of the Cheyne-Stokes type.

In *uremic coma*:—The coma is deep; the pulse slow; the respirations frequent and irregular; the urine shows the presence of albumin and casts, with a diminished output of urea; there may be a urinous odor to the breath.

GYNECOLOGY.

4. *Menorrhagia* is a condition characterized by excessive loss of blood during the menstrual period.

Causes: Tumors, uterine displacements, endometritis, subinvolution of the uterus, lacerations and cystic degeneration of the cervix, tubal and ovarian diseases.

Treatment: Remove the cause, if possible; treat abnormal conditions that are present; vaginal douches, tampons, and curettage have all been recommended; also ergot, hamamelis, hydrastis, and virburnum prunifolium.

5. The *treatment of gonorrheal endometritis* consists in dilating the cervix, curetting the uterus, washing out the uterine cavity with an antiseptic solution, and swabbing with carbolic acid or tincture of iodine.

6. Laceration of the cervix may cause hypertrophy, elongation, sclerosis, cystic degeneration, or carcinoma of the cervix; subinvolution, or displacements of the uterus, also endometritis. Other results may be pain on walking, on defecation, or during coitus; sterility or abortion; headaches, backache, neuralgic pains, neurasthenia, indigestion, constipation.

7. The *most common ovarian tumors* are: Cystic tumors; then sarcoma, carcinoma, endothelioma, myoma, fibroma; the three latter are somewhat rare.

The cystic tumors, sarcoma, and carcinoma may attain to great size.

8. The *indications for ovariotomy* are given by Treves as follows: Ovarian tumors and cysts; persistent hyperemia of the ovary; ovaritis; amenorrhea, attended with hystero-epilepsy; occlusion, or absence of uterus or vagina, with violent molimen; certain cases of uterine tumor; neuralgia of the ovary; some cases of mania, epilepsy, and hysteria.

9. CYSTITIS.—*Symptoms*: Frequent micturition; pain; bladder irritability and tenesmus; the urine may be alkaline and turbid, and may contain blood, pus, mucus, or bacteria; the patient may also experience chills and fever.

Treatment: Rest in bed; the imbibition of plenty of milk and water, and the avoidance of all highly seasoned food; laxatives; diuretics; sitz-bath; irrigation of the bladder with an antiseptic solution; hot fomentation and vaginal douches are often helpful; sometimes intravesical medication is necessary.

THERAPEUTICS.

1. Acids are classified as: (1) Mineral, and (2) Vegetable or as (1) Inorganic, and (2) Organic.

2. Scilla may be classed as an expectorant, an emetic, and as a diuretic.

The officinal preparations and doses are: Fluidextractum scillæ, ♏ij; tinctura scillæ, ♏xv; acetum scillæ, ♏xv; syrupus scillæ, ♏xxx; syrupus scillæ compositus, ♏xxx.

3. *Digitalis is contraindicated*: (1) When it produces precordial distress; (2) if it makes the pulse irregular; (3) in valvular lesions accompanied with compensatory hypertrophy, or when such hypertrophy is taking place; (4) in aortic lesions, generally; (5) in fatty heart; (6) in aneurysm and cerebral endarteritis.

Digitalis is incompatible with: Cinchona, lead acetate, iron sulphate, and the tincture of the chloride of iron.

4.

	DOSE FOR CHILD OF ONE YEAR.	DOSE FOR ADULT.
Acetanilid.....	Should not be given.	gr. iv.
Tincture of opium.....	♏ss: but the camphorated tincture had better be given. ♏v.	♏ viij.
Tincture of gelsemium	♏ss.	♏ viij.

5. *Officinal preparations and doses of Strophanthus*: Tinctura strophanthi, ♏vij; strophanthinum, gr. 1/200.

Strophanthus is used as a cardiac stimulant, in cardiac dyspnea, in several forms of cardiac disease, and nephritis, in pulmonary edema, hysteria, chlorosis, palpitation, and tumultuous heart action.

6. *The most generally used Anthelmintics* are: Aspidium: oleoresina aspidii, gr. xxx. Granatum: Pelletierinæ tannas, gr. xij. Pepo; ʒjss. Santonin; gr. j. Quassia; gr. xx. Thymol; gr. xij.

7. *The most important alkaloids of Opium* are: Morphine, codeine, narcotine, thebaine, narceine, papaverine.

Treatment of acute opium poisoning: "Wash out the stomach with a dilute solution of potassium permanganate, leaving about 500 c.c. in the stomach, and in maintaining the respiration. In the first or second stage the 'ambulatory treatment' should be adopted to prevent, if possible, the establishment of the third stage. If this stage develop, the main reliance is to be placed in maintaining the respiration by artificial methods, until the poison has been eliminated. Strong coffee, or caffein, by the mouth or rectum, are of benefit. The same cannot be said of atropin. The urine should be drawn by the catheter." (Witthaus' *Essentials of Chemistry*.)

8. *Antidotes* are agents given to counteract the effects of a poison. They may be divided into two classes:

Chemical antidotes act as such by uniting chemically with the poison, and thus converting it into a harmless or insoluble compound.

Physiological antidotes act as such by combating the physiological action of the poison.

9. *Antipyretics* are used to reduce the body temperature when it is abnormally high.

Antipyretics generally used are: Cold water, ice, aconite, quinine, acetanilid, antipyrin, acetphenetidin, digitalis.

10. A drug which when taken internally causes contraction of the pupil of the eye: morphine.

One which acts similarly when applied locally: eserine

OBSTETRICS.

1. The anatomic differences (not including the sexual organs), between the male and female figure are: In the male, the bones are stronger, heavier, with prominences and ridges more pronounced; the sternum is longer; the pelvis shows marked differences, notably in the subpubic angle, which is from 75° to 80° in the male and from 90° to 100° in the female; the thyroid foramen is oval in the male and triangular in the female. The female has more subcutaneous fat, hence the body is more rounded. There is less hair on the female body, notably on the face, chest, limbs, and abdomen; the pubic hair does not grow upward toward the umbilicus as in the male; the hair on the head is characteristically different. In the female the larynx and waist are smaller than in the male; while the hips are wider and the breasts larger.

3. A *diagnosis of occipito-posterior position may be based* on: Finding the sagittal suture in the oblique diameter of the pelvis, the posterior fontanelle in the posterior half of the pelvis, the anterior fontanelle is easily accessible; the fetal heart sounds are heard far back in the flank, between the ribs and the crest of the ilium; the fetal head may be felt above the pelvic brim, and the fetal small parts are felt through the anterior abdominal walls of the mother, while the fetal back is not felt.

5. The *most reliable signs of pregnancy before the fourth month*, are: Suppression of the menses, nausea, softened cervix and lower uterine segment, and enlarged breasts with darkened areola.

6. Conditions that justify the induction of premature labor: (1) Certain pelvic deformities; (2) placenta prævia; (3) pernicious anemia; (4) toxemia of pregnancy; (5) habitual death of a fetus toward the end of pregnancy; (6) hydatidiform mole; (7) habitually large fetal head.

The methods that may be employed, are: Partial dilatation of the cervix and the introduction within the cervix (and vagina) of a tamponade of sterile gauze; (2) dilatation of the cervix; (3) puncturing the membranes; (4) introduction of a soft rubber bougie into the uterus; (5) intrauterine injection of glycerin, water, or some other fluid.

8. *Puerperal eclampsia* is an acute morbid condition, occurring during pregnancy, labor, or the puerperal state, and is characterized by tonic and clonic convulsions, which affect first the voluntary and then the involuntary muscles; there is total loss of consciousness, which tends either to coma or to sleep, and the condition may terminate in recovery or death.

The line of *treatment* as laid down by Edgar is as follows: For *preventive treatment*: (1) The amount of nitrogenous food should be diminished to a minimum; (2) the production and absorption of poisonous materials in the intestines and body tissues should be limited and their elimination should be aided by improving the action of the bowels, the kidneys, the liver, the skin, and the lungs; (3) the source of the fetal metabolic products and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ.

The *curative treatment* includes: (1) Controlling the convulsions (by chloroform, veratrum, or chloral); (2) elimination of the poison or poisons which are presumed to cause the convulsions; (3) emptying the uterus under deep anesthesia, by some method that is rapid and that will cause as little injury to the woman as possible.

9. *Version*, or turning, is a procedure by which some part of the fetus other than that originally presenting is brought to the superior strait of the pelvis.

The *varieties* are: (1) Cephalic, in which the head is brought down; (2) podalic, in which the (breech or) feet are brought down.

10. Ectopic pregnancy is a pregnancy in which the ovum is developed outside of the uterine cavity.

Its *dangers* are: Rupture of the gestation sac, hemorrhage, shock, pelvic hematocele, peritonitis, sepsis, and death.

Treatment consists in a laparotomy, and removal of the gestation sac as soon as the condition is recognized.

CHEMISTRY.

1. The *law of multiple proportions*: When two elements, *A* and *B*, unite with each other to form more than one compound, the various weights of *B* which combine with a fixed weight of *A*, are simple multiples of the smallest weight of *B* so combining.

2. The formula for ammonia is NH_3.

Ammonia water is a colorless liquid having the characteristic odor of ammonia. It imparts a blue color to litmus paper. If a glass rod moistened with hydrochloric acid is held over ammonia water, dense white fumes are evolved. Ammonia water when added to ordinary water makes a good cleansing agent.

3. Nitric acid acts very energetically on animal matter; it decomposes the same, and turns proteid substances yellow. Nitric acid is a colorless, fuming liquid, with a penetrating and irritating odor, and very sour taste: it is strongly acid in reaction; is a powerful oxidizing agent, and reacts readily with most metals to form nitrates: on exposure to the air and light it becomes yellow, and is decomposed into NO_2, H_2O, and O.

4. The acid used in preparing sulphite salts is sulphurous acid.

5. Three reliable tests for albumin in the urine:

"The urine must be perfectly clear. If not so, it is to be filtered, and if this does not render it transparent, it is to be treated with a few drops of magnesia mixture and again filtered."

I.—*The heat test*: "The reaction is first observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3."

II.—*Heller's modification of the nitric acid test*: "Place in a test tube a layer of HNO_3 about 2 centim. in thickness; then, with a pipette, carefully float upon the surface of this a layer of the urine in such a manner that the liquids do not mix. If albumin be present, a cloudy ring appears *at* the point of junction of the two layers, the borders of the cloud being sharply defined. A cloudy ring may be formed by the presence of an excess of urates, but in this case it is not *at*, but *above*, the point of junction of the layers, and its upper border is not sharply defined, but fades off gradually."

III.—*The trichloracetic acid test*: "It is more delicate than Heller's test. Add a crystal of trichloracetic acid to the suspected urine; the acid dissolves, forming a layer underneath the urine. A white band at the junction shows the presence of albumin." (Witthaus' *Essentials of Chemistry*.)

6. In *poisoning by match heads*, give an emetic such as copper sulphate or apomorphine hydrochloride; then old French oil of turpentine should be administered; avoid giving oils and fats; a weak solution of potassium permanganate has also been recommended.

7. Rat poison means poisoning by either phosphorus or arsenic. In the former case, the treatment is as just described in answer to question 6.

In poisoning by arsenic, the stomach should be washed out: an emetic such as copper sulphate or apomorphine hydrochloride should be given; and the antidote, freshly prepared solution of ferric hydroxide should be administered.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	June	16
Arizona*	Ancil Martin, Phoenix	Phoenix	July	6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August	4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	14
Delaware	J. H. Wilson, Dover	Dover	June	16
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	July	14
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	Nov.	11
Georgia	E. R. Anthony, Griffin	Atlanta	Oct.	6
Idaho	W. F. Howard, Pocatello	Boise	October	6
Illinois	J. A. Egan, Springfield	Chicago	June	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	Oct.	27
Iowa	Louis A. Thomas, Des Moines	Des Moines		
Kansas	D. P. Cook, Clay Center	Kansas City	June	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	July	7
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans		
Maine	Wm. J. Maybury, Saco	Augusta	July	7
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	9
Massachusetts*	E. B Harvey, State House, Boston	Boston	July	14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	9
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June	10
Mississippi	S. H. Mc'ean, Jackson	Jackson	Oct.	13
Missouri	J. A. B. Adcock, Warrensburg	St. Louis		
Montana*	Wm. C. Riddell, Helena	Helena	October	6
Nebraska	E. J. C. Sward, Oakland	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	Nov.	2
N. Hampshire*	Henry C. Morrison, State Library, Concord	Concord	July	15
New Jersey	J. W. Bennett, Long Branch	Trenton	June	16
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July	13
New York	C.F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	June	23
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem		
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	7
Ohio	Geo. H. Matson, Columbus	Columbus	June	9
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	June	—
Oregon	B. E. Miller, Portland	Portland	July	7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg	June	23
Rhode Island	G. T. Swarts, Providence	Providence	July	2
S. Carolina	W. M. Lester, Columbia	Columbia	June	9
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July	8
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May,	'09
Texas	G. B. Foscue, Waco	Waco	June	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	6
Vermont	W. Scott Nay, Underhill	Burlington	July	14
Virginia	R. S. Martin, Stuart	Richmond	June	24
Washington*	C. W. Sharples, Seattle	Seattle	July	7
W. Virginia	H. A. Barbee, Point Pleasant	Charleston	July	14
Wisconsin	J. V. Stevens, Jefferson	Madison	July	14
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 30, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	332	165
Diphtheria	344	27
Measles	1238	33
Scarlet Fever	635	46
Smallpox	—	—
Varicella	213	—
Typhoid Fever	32	12
Whooping Cough	26	6
Cerebrospinal Meningitis	9	8
Malarial Fever	—	—
Totals	2829	297

Health Report.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending May 29, 1908:

			CASES.	DEATHS.
SMALLPOX—UNITED STATES.				
California, Los Angeles	May	2–9	7	..
San Francisco	May	2–9	6	..
District of Columbia, Washington	May	9–16	8	..
Illinois, Chicago	May	9–16	1	..
Danville	May	10–17	1	..
Indiana, Fort Wayne	May	9–16	2	..
Indianapolis	May	10–17	3	..
La Fayette	May	11–18	2	..
Iowa, Cass County	To May	16	12	..
Ottumwa	May	9–16	1	..
Kansas, Kansas City	May	9–16	4	..
Topeka	May	9–16	3	..
Kentucky, Covington	May	9–16	2	..
Louisiana, Minden	To May	11	19	..
New Orleans	May	9–16	7	..
Michigan, Grand Rapids	May	9–16	1	..
Port Huron	May	2–16	5	..
Saginaw	May	9–16	3	1
Minnesota, Winona	May	2–9	1	..
Missouri, Kansas City	May	2–16	18	..
Montana, Butte	May	5–12	3	..
Nebraska, South Omaha	May	9–16	1	..
New York, New York	May	9–16	1	..
North Carolina, Charlotte	May	9–16	1	..
Ohio, Bowerston	Apr.	23–May 25	1	..
Cincinnati	May	8–15	9	..
Dayton	May	9–16	1	..
Newark	May	2–9	1	..
Sherrodsville	Feb.	21–May 18	90	..
Tennessee, Knoxville	May	9–16	1	..
Texas, Galveston	May	8–15	1	..
Washington, Spokane	May	2–9	7	..
West Virginia, Parkersburg	May	1–18	3	..
Wisconsin, La Crosse	May	9–16	6	..
Milwaukee	May	9–16	2	..
SMALLPOX—FOREIGN.				
Arabia, Aden	Apr.	13–27	..	3
Brazil, Manaos	Apr.	11–18	1	..
Rio de Janeiro	Apr.	12–19	136	43
Canada, Halifax	May	9–16	3	..
Montreal	Feb.	22–29	1	..
Winnipeg	May	9–16	1	..
Cape Colony, Cape Town	Apr.	4–11	1	..
China, Hongkong	Mar.	28–Apr. 11	53	39
France, Paris	Apr.	24–May 2	4	..
Germany, General	Apr.	26–May 2	22	..
Great Britain, London	Apr.	18–25	1	1
India, Bombay	Apr.	14–21	..	52
Calcutta	Apr.	4–11	..	24
Madras	Apr.	11–17	..	1
Rangoon	Apr.	4–11	..	1
Italy, Catania	Apr.	30–May 7	..	1
Japan, Kobe	Apr.	4–11	2	2
Osaka	Apr.	4–11	126	114
	Apr.	11–18	73	43
Yokahama	Apr.	11–25	4	..
Mexico, City of Mexico	Mar.	21–Apr. 4	..	12
Portugal, Lisbon	Apr.	25–May	7	
Russia, Moscow	Apr.	11–18	39	19
Spain, Denia	Apr.	25–May 2	4	..
Valencia	Apr.	25–May 2	22	1
Vigo	Apr.	25–May 2	..	1
Straits Settlements, Singapore	Mar.	28–Apr. 4	..	2
Venezuela, La Guaira	May	7	..	Present.
YELLOW FEVER.				
Brazil, Manaos	Apr.	11–18	1	1
Para	Apr.	19–26	3	3
Mexico, Laguna	May	18	..	1
CHOLERA—FOREIGN.				
French Indo China, Cholon	Mar.	28–Apr. 12	26	26
India, Bombay	Apr.	14–21	..	3
Calcutta	Apr.	4–11	..	221
Madras	Apr.	11–17	..	3
Rangoon	Apr.	4–11	..	1
PLAGUE—INSULAR.				
Philippine Islands, Manila	Apr.	4–11	4	..
PLAGUE—FOREIGN.				
Brazil, Rio de Janeiro	Apr.	12–19	..	1
Chile, Antofagasta	Apr.	11–18	20	3
Arica	Apr.	11–18	..	Present.

Medical Record

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THE WINNING FIGHT AGAINST CONSUMPTION.*

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NEW YORK.

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It was peculiarly gratifying to me, a physician, to have been invited through the State Department of Health to speak to you, who are clergymen, upon the subject with which this exposition is concerned. I thought it a situation most fortunate that you should take the interest you are manifesting in the fight against a disease which has, up to our day, caused more human suffering and disaster than any other destructive factor in history; that your profession is joining that of medicine in this anti-tuberculosis propaganda. It seems to me that nothing could be more natural than such a union of forces. In primitive times, when human conditions were elemental, that man who was especially anxious for the welfare of the community combined in himself the offices of both priest and physician; while he sought to minister to the spiritual comfort of his fellows, he did also what he could to assure their physical well-being. And even in our day the church recognizes this instinctive union of humane forces, and finds that it can best extend its beneficent influence when it sends forth medical missionaries. Nor do we have to go beyond our own borders for inspiring examples of the co-working of the ministry and medicine for the amelioration of human suffering. You all know of the work of the Reverend Dr. Worcester who, as it happened, was a professor of psychology and of the history of philosophy before he became a clergyman. Being mindful, in a broad way, of the altruistic and humanitarian obligations which the Master has enjoined upon His disciples, Dr. Worcester enlisted the cooperation of physicians especially skilled in nervous diseases, to the end that by their united efforts those men and women who are suffering from functional nervous affections might become well body and soul. And Bishop Fallows, as you know, has set out upon the same work in Chicago.

Therefore, gentlemen, when you, as Christian ministers are taking a vital and an achieving interest in this much more important matter of tuberculosis, you are doing something most fitting and natural.. The good which can thus be got from a union of religion and science is incalculable. Indeed, gentlemen, I believe that religion and science have always been in unison; there has always been, and should always be a union of these beneficent agencies. They are one because they exist for but one purpose—the good of humankind. Whatever differences there have been have had, to my mind, nothing to do with essentials, but only with nomenclature; not concerning the heart of things, but only concerning words. And I have throughout conceived this paper, not in the spirit of a member of one profession addressing the members of another, but as one man speaking to his fellow-men, all of us having the inspiration of a single motive—to alleviate human suffering; all of us feeling the impulse of a single and a most potent faith in the accomplishment of our beneficent ends.

The Nature of Tuberculosis.—There is no phase of life which tuberculosis does not touch—nay, upon which it does not press with a most grievous, heavy hand. It has been claiming, between infancy and old age, every tenth life, and between adolescence and maturity every third or fourth life—in some communities every other life. Every other adult negro succumbs to it. Here lies the gist of the whole anti-tuberculosis propaganda. It is between the fifteenth and the forty-fifth years, between those years when young men and women are privileged to contemplate matrimony, when husbands should be strong to work for and maintain their families, when wives should be strong to rear their children, between the years when you and I should be fit for the world's work, that this dreadful disease has been destroying every third or fourth life. And much more is connoted by this death-rate. The consumptive is usually a pathetic sufferer during several years before his death; and during many months he has been incapacitated for remunerative work, so that his family have been in want because of his inability to provide for them; they have become exhausted in nursing him; they have, in their sympathetic devotion, only too frequently contracted the disease from him; their affection and their anguish in his behalf have been a tremendous strain. And many consumptives recover after months and years of grievous illness; so that the death-rate here given in no way suggests such suffering.

And shall we for the moment set aside considerations of sentiment, of pity; shall we look upon the matter from a purely material, Gradgrind viewpoint? Shall we compute what tuberculosis is costing us in cold, hard cash? An intensely practical spirit has come to be representative of our present day civilization; and of this we Americans are exceedingly vain. In the popular phrase, most things are now centered in the question "does it pay"; and whatever fails to come up to the piece of money standard is eschewed contemptuously. To understand adequately this tendency one has but to contemplate, for so long as he can endure to look upon it, the characterization of Mammon which Mr. Watts has painted. Such being the tendency of our civilization, it is nothing short of amazing, the economic losses which we permit tuberculosis to inflict upon us; amazing how the shrewdness, the business prescience of our people has in truth a

*Read before the Ministerial Association of Rochester, N. Y., March 30, 1908.

vision which reaches no farther than the essentially obtuse angle the apex of which is the end of its nose. Tuberculosis is a disease entirely preventable, and by means extraordinary for their simplicity and their comparatively little cost. Yet Dr. Pryor estimates that every year it brings to the people of this State a loss of $70,000,000; and this disease occasions the United States an annual loss of more than $300,000,000.

Society's "submerged strata," which cannot free themselves from the grip of pestilent environment —the darkness, wretchedness, and starvation upon which the saprophytic bacillus propagated its inconceivable billions, yield victims far in excess of all other infections put together. The poor, indeed, furnish much the larger part of the dreadful tuberculosis mortality; and this we are determined is a situation to be remedied. A generation ago it was said that the rich sometimes got well of consumption, but the poor never. And our propaganda is to-day manifesting that the poor shall recover equally with those who are prosperous.

It is, indeed, sometimes wondered why the well-to-do, being in seemingly wholesome circumstances, ever contract the disease; they are in fact no freer from the danger than were the gallants and gentle ladies in Poe's dreadful tale, who thought by isolating themselves to escape the Black Death. For the beautiful laces and garments of the rich, and the pretty things worn by their little children, and oftentimes got at remarkably low prices (and what manner of fool is he who will not buy a thing as cheaply as he can), are like as not worked at, and bent over, and coughed upon, from dawn until midnight, by sweatshop consumptives. So, much oftener than we imagine, does the poverty of Lazarus make itself felt in the house of Dives. Thus is demonstrated the fact, as in Poe's gruesome story, that all parts of the social fabric are inseparably interwoven, that no one part of our people can safely or successfully hold itself aloof from the rest; when any one part is afflicted, all must suffer in greater or less measure.

There is scarcely a trade, or occupation, or business or calling which does not, in varying degree, yield to tuberculosis its quota of valuable lives. And the factory has, up to recent years, been even more conducive to consumption than the home; the tuberculous workman has, in many communities, been infecting his fellow-workmen more than he has the members of his own family.

In literature and the arts how many precious lives have succumbed to this veritable captain of the men of death, to use John Bunyan's vigorous characterization. Consumption has ever been "death's direct door to most hard students, divines, physicians, philosophers, deep lovers, zealots in religion." Who can estimate the loss in beauty, poesy, in intellectual treasures, and in all the sweetnesses and refinements of life which this disease has inflicted upon us? How many an inspired genius, even before his powers have matured, has suffered its most untimely visitation?

In another place I have written: "It is with a very real sense of melancholy that one contemplates the long death roll of those of the world's great men and women who have succumbed untimely to the tubercle bacillus, which is and has been, through countless generations, by far the most potent of all death-dealing agencies. Had it not been for this detestable parasite Bastien Le Page might have given us another 'Joan of Arc' to feast our eyes upon; Rachel might for many years have continued to permeate the spirits of her audiences with the divine fire that was in her. Our navy did well enough in the 1812 war, as all the world knows; but what a rip-roaring time there would have been if John Paul Jones had lived to take a hand in it. We might have been reading some more of Stephen Crane's splendid war stories; we might have had some more of Robert Louis Stevenson's delicious lace work; Schiller might have given us another 'Song of the Bells'; we might have taken another 'Sentimental Journey' with Laurence Sterne; Henry Cuyler Bunner might have continued to delight us and to touch our hearts; John Keats might have given us another 'Endymion.' Had the tubercle bacillus permitted, Nevin might have vouchsafed us another 'Rosary'; von Weber another 'Euryanthe Ouverture'; Chopin might have dreamed another 'first Polonaise,' and the tender flute notes of Sidney Lanier might even now be heard. Maria Constantinova Bashkirtseff, Zavier Bichat, John Godman, Rene Theophile Hyacinthe Laënnac, Henry Purcell, John Sterling, Henry Timrod, Artemas Ward, Henry Kirke White, Henry David Thoreau, Baruch Spinoza, Paul Lawrence Dunbar—such names as these are but a moiety among those of the world's nobility whose precious lives were cut off in their prime by the Great White Plague."

The proverb goes "Trokner Husten—Todter Trompeter"; nor has the sword ever been as voracious of human life as has been the tubercle bacillus. And such scourges as cholera, the bubonic plague and smallpox, although they have been more gruesomely picturesque in their ravages, have never been in the running with consumption. Richat, for example, estimates the death roll of all the wars of the nineteenth century at fourteen million lives, and that of consumption in the same period and countries at thirty millions. That terrible fourteenth century epidemic of the bubonic plague, known as the Black Death, devastated three continents. During the several years of its continuance it is said to have destroyed—and the estimate is pronounced exaggerated—one-fourth of the populations it visited. But tuberculosis has been approximating that number of victims month in and month out, year after year, and so far as we can judge, throughout the history of the race.

Thus then does this disease affect every relation in life, every aspect of civilization—the infant subsisting upon impure milk, the child studying in unhygienic schools; the adolescent contending with the conditions peculiar to those years; the youth and the maiden; the mother, with whom lies the future of the race; the man who feels his natural responsibilities and obligations. Tuberculosis is pervasively concerned with our habits and customs, with our housing conditions, the sanitation of our cities, with innumerable details of existence. It has to do fundamentally with human destiny, with human heredity, its preservation, its course in the present life, its generations to come. The tubercle bacillus may well be looked upon as an index by inversion of the real progress of the race. By it the claim of civilization to dominate human life may fairly be judged. Tuberculosis will decrease with the essential advance in civilization; and this disease will as surely increase as civilization retrogrades.

The Causes of Tuberculosis.—It would perhaps be well to set forth here some elementary facts.

We speak of tuberculosis as a communicable disease, and we prefer this term to "contagion," which suggests a virulence not necessarily characteristic of tuberculosis. Diphtheria and scarlet fever are contagious diseases. If a passenger were sitting in a

street car next such a sufferer, it is not unlikely he would "take" the contagion from that mere contact. But consumption would not result so easily as that; one might, indeed, live his whole life with a consumptive and be able to resist the disease, by following the simple precautions which medical science has formulated. We speak generally of all diseases that are either communicable or contagious as infectious; they are all "germ" diseases. The existence of tuberculosis depends upon two main causes: the germ, which is the specific, the essential cause; and the predisposition.

The specific cause of tuberculosis is the bacillus of Koch, which that illustrious physician discovered in 1882. We call this germ a bacillus because it is rod shaped (*bacillus*, a rod); it is in reality a vegetable parasite which has been preying upon mankind, so far as we can judge, since the beginning of the race. Why, then, was it not discovered until within recent years? Because, in the first place, geniuses of Koch's caliber are very rare indeed; and again because we have not, until our day perfected a microscope by which we could detect an object so infinitely small. For this Koch bacillus is about one-ten thousandth of an inch in length; its breadth is one-fifth of its length, and the advanced consumptive coughs up several thousand millions—several billions of these germs in the twenty-four hours.

How does this germ find its way into the human body? First, by inhalation, by breathing in the airborne minute droplets of sputum which the careless consumptive emits; or by breathing in the dust which is impregnated with the consumptive's dried sputum. This is mainly the mode of invasion by the bacillus. Secondly, and perhaps nearly as frequently, the bacillus is taken into the body with impure food, especially with the milk and meat of tuberculous cattle; or the bacillus-laden excreta from the nose and the upper air passages are swallowed, particularly by little children, thus bringing about an ingestion tuberculosis.

When the bacillus finds an implantation in any vulnerable part of the body an inflammation is excited, resulting in the formation of a tubercle (*tuber*, a root or bulb); and thus we speak of tuberculosis, which is for all practical purposes the equivalent of the term consumption, or of the Greek "phthisis," a wasting away. Tuberculosis may exist in any part of the body. We are most familiar with it in the lungs—in the pulmonary form: but any other organ or tissue, the liver, the kidney, the spleen, the intestines, may be involved. Little children, especially, suffer from bone and joint tuberculosis; Pott's disease of the spine, hip disease, the white swellings, the cold abscesses of the elbow, wrist, knee and ankle joints are tuberculous manifestations.

Now, why is it, since the tubercle bacillus is propagated in such uncountable numbers, since it is ubiquitous—why is it that anyone ever escapes the disease? Because the bodies of most of us are sufficiently strong to withstand the germ; because we have within us such protective factors as phagocytosis and the normal opsonic index which destroy and assimilate the invading bacilli. But those who succumb have not these factors in sufficient strength to resist the invasion; they have become predisposed, by reason of poverty, starvation, or one or more of innumerable enervating and depressing agencies, so that their poor bodies have become incapable of resistance. How to eliminate the specific cause is the special business of the physician. And two main and very simple elementary principles have been evolved: to destroy the spittle of the consumptive before it can contaminate his fellows; and to require that food shall be innocuous regarding the tubercle bacillus before it is ingested. How to eliminate the predisposing causes of consumption is the special business of all other sorts and conditions of men and women.

The predispositions to tuberculosis may well be considered as hereditary, as environmental and as resulting from the infirmities of the will. These three factors, heredity, environment and will—these three fates, as it were—determine the destiny of the individual in this life.

It is a commonplace of experience that this triad of agencies are almost never isolated in their influence; they are essentially complemental and interrelated. A bad heredity may be most happily modified by a good environment; and a will, no matter how strong, may have to bend beneath the stress of a hard and uncongenial environment from which it cannot free itself. These facts of life confront our two callings every hour in the day. As I observed in the beginning, our nomenclature may differ. The same thing is meant when you speak of the sins of the father which are visited upon the children, and when the scientist speaks of hered[illegible]. We may here recall the whimsical Hibernic[illegible] Oliver Wendell Holmes that "A man ought to be careful in the selection of his ancest[illegible] often unfortunate that such is no one's privilege. The lives of most are begun healthy enough; but many are born with a most grievous handicap. Yet it is one of the most gratifying truths which the medicine of the present day can set forth that tuberculosis is itself almost never transmitted by the parent. I have noted that the essential cause, [illegible] which the existence of the disease depends, is the bacillus; but this is very rarely transmitted. [illegible] is oftentimes transmitted, however, by these sickly parents, is a predisposition to the [illegible] vitiated or vulnerable condition of the tissues, upon which the germ may [illegible] and propagate itself. They [illegible] sumption, but a tendency to [illegible] sumptive father may have a [illegible] This child may within several [illegible] sumptive. But not by her [illegible] intimate contact with the [illegible] or ignorant father has [illegible] germs which the careless [illegible] were impossible even [illegible] may bring about [illegible] mal physical life [illegible] relations to [illegible] of such [illegible] disaster [illegible] stone [illegible] the [illegible]

When we come to [illegible] cattered about the home. [illegible] nvironment we find that it [illegible] n to enumerate the factors which [illegible] a tendency to consumption. Normal [illegible] e is the right adjustment of [illegible] ernal [illegible] external relations; and any disturbance [illegible] justment leads sooner or later to physical [illegible] In those trades where minute particles of [illegible] or metal dust or cloth fiber must be inhaled [illegible] consumption mortality is very great—more than [illegible] per cent. among stone workers. Mechanical violence, blows, and wounds, oftentimes, by vitiating the tissues, furnish a focus of tubercular infection; a lowered resistance is brought about by such previous illness as acute fevers, "colds," grippe, pneumonia, and pleurisy.

It is, however, when we come to such vicious conditions as are attendant upon modern civilization that we find environmental influences of the deadliest sort. There is overcrowding, which necessitates that people must constantly be rebreathing their own poisonous exhalations, mingled with those of their fellows with whom they live; the dark and unventilated bedrooms in which hundreds of thousands sleep under circumstances so unhealthful that consumption has not without reason been termed

the bedroom disease; the dreadful poverty which millions have to endure in this country, which is probably the most prosperous and the richest in natural resources in all human history—poverty, with its connotations of sunlessness, starvation, and physical exhaustion; the lack of warmth, clothing, and shelter; the disease-breeding occupations which men must take up if they would keep their nostrils above the current in the dreadful struggle which is attendant upon what we like to term human progress—such are environmental conditions that have been bringing about the appalling death-rate that has been stated.

When we come to the part which a man's will plays with regard to tuberculosis one must consider his unhealthful habits, his improvidence, the unwholesome customs to which he adheres, his sexual aberrations, his dietetic excesses, his drug addictions, his misuse of tobacco, and among his vices, especially alcoholism. It is the last of these factors I would here consider briefly. The French say truly enough that alcoholism lays the foundation of consumption; again, that consumption is contracted across the bar. At any rate these retrogressive, sinister and destructive agencies are almost always concomitant. My own, and I think the general experience in hospitals and institutions for the poor, attest this. Yet here, I submit, the greatest charity should follow upon a consideration of elemental facts. Here we see illustrated in a way to engage our sympathies rather than our resentments, how oftentimes the will, how strong soever it would be, gives way beneath the appalling stress of circumstances. I submit with deference, despite magnificent examples to the contrary, that in the case of many human beings, normal physical conditions are demential to the maintenance not only of will but of that laty as well. It would seem strange to the uninterviewed, for instance, how many poor men, who safe too easily assumed to be depraved and vicious, drink whiskey of the wood alcohol or fusil oil verily before breakfast—before going to work. In one recorded case a quart of rotten whiskey was not infrequently taken before breakfast. Men essentially bad, men desirous of getting drunk, do not imbibe in this way; they reserve the evening for their debauches. The truth is that many wretched, unhappy men, having no choice between suicide and the will to live and determining upon the latter, as most heroic souls must, know no other means (however mistaken they may be) by which they can bring their subnormal organisms to the point sufficient for the doing of the day's work. They have in their bodies, which are oftentimes tuberculous to begin with, no factors of safety, no reserve strength with which to keep up the bitter and heartbreaking struggle for existence.

Another truth which experience has evolved is that oftentimes, in slum populations, the wives of these poor men do not know how to prepare for them a drinkable cup of coffee, or how properly to cook a piece of steak. It is easily demonstrable, indeed, that bad cooking has driven many a man to alcoholism.

When we, either as physicians or as ministers, are consulted by those who desire to marry, and who have the wisdom to seek our advice regarding that serious step, we should throw all the weight of our influence not only against the marriage of consumptives, but also against the union of those who are in any way predisposed to the disease. Under such circumstances the union should be delayed until both man and woman have fully recovered; oftentimes, when recovery has thus taken place, such a marriage under certain circumstances may be approved. The more love dominates such an engagement, the greater will be the willingness to wait. But with regard to the evident consumptive, we should press home the truth of Flick's dictum that "many a young man has sacrificed his chances of recovery on the altar of Hymen"; and the observation of another wise physician that when consumption is hanging about a young woman the distance between marriage and the grave is usually short with her.

A word regarding rural districts. We think oftentimes of consumption as being a city-bred disease. But, as you probably know, it is by no means rare in the country, and it seems strange, that the disease should exist when there is abundant pure air, so much benignant sunshine, such healthfulness generally. But I think it will be found that in many rural communities a number of abnormal factors exist. Sometimes it is the execrable, innutritious diet, to which meats (other than bacon) are comparative strangers—canned fruits and vegetables and condensed milk being largely consumed, while the fresh food-stuffs, including eggs, cream, and milk, are sent to cities. Then there is that innocent imbibition of cider, stomach bitters, and other irreproachably labeled fluids, containing anywhere up to 44 per cent. alcohol. Then there is in some parts, the effect of intermarriage among families which have through several generations been living within a radius of a few miles. Then there is the disregard of a natural function because of disinclination to venture to outhouses in the intense cold of the winter months. And there is, of course, the infection of homes which is possible in all living conditions.

Finally, before concluding my address, I would beg your help in the fight against a disease almost worse than consumption, and that is phthisiophobia, the fear of consumption. Fear in itself is a potent predisposing cause with regard to any disease; but when this unworthy emotion excites so many people to shun the consumptive, to fight with frantic and most selfish cruelty against the establishment of humane institutions for his relief, it appears to me that we should on every occasion most earnestly reprehend such behavior, so foreign as it is to the merciful spirit of Christianity. There is in fact, no danger from occasional contact with the consumptive under any circumstances; nor, indeed, at any time if the simple precautions which science has formulated are observed and practised. As I have stated, only the predisposed contract the disease; and the invasion of the bacillus must be frequent, intimate, and prolonged before an implantation is likely.

The Propaganda.—Thus, gentlemen, it is evident that tuberculosis is not merely a doctor's concern. Besides its medical aspect it presents many others—social, moral, political, and economic—than which there can be none more important in human affairs. The tuberculosis situation is the ultimate and personal business of every member of the community. Consider first the individual: how essential it is that the breadwinner's health shall not be endangered; how the mother should be made aware of the possible infection of her home; how the school child, in sufficiently advanced grades, should be instructed in the principles of sanitation and prophylaxis, so that hygienic and wholesome living will become a habit and an instinct. Indeed, I submit, that in the individual, the unit of our civilization, lies the most vital consideration of all. I know, as a physician, that the health of the human body depends

absolutely upon the stamina and the virility of its component cells; in like manner, no communal health can be hoped for otherwise than in the integrity of the individual being. Then we should influence our fellows as members of the community, as men and women represented in societies, leagues, labor unions, business associations, beneficent orders, church organizations.

Most potent of all beneficent influences is the education regarding the manifold phases of the tuberculosis propaganda. Physicians have been and are giving lectures to the laity in this regard. Circulars, pamphlets, and all kinds of literature have been disseminated. Exhibitions are imparting information in the most impressive and attractive way. The press has been most generous in the space it has given to the articles, reports and "stories" which have been prepared. Now, finally and most happily, we are to indulge the confident hope that the pulpit will reinforce this campaign of education with its all-powerful presentments.

No man or woman need be puzzled what part to take in this warfare against the Great White Plague. After the hygiene of the home has been attended to, efforts can be made in crossroad, village, town, and municipality to hold up the hands of the public officers who are charged with the care of the communal health. And these public functions can always be supplemented by the efforts and the funds of bodies which are organized apart from the constituted authorities. The cleanliness of public vehicles, street cleaning, school inspections, the abolition of slums, the providing of parks and playgrounds for children, should be matters of vital interest to the citizen. Health departments should be upheld in their measures framed for notification and registration, and for the disinfection of houses in which consumptives have lived or died. Tenement house departments should receive the sincerest and most unswerving support. And those of us who have surplus wealth can not possibly make better investments than in the construction and maintaining of model tenements for the poor. "Philanthropy with 4 per cent." is a most wholesome and at the same time one of the sanest of sentiments. There should be dispensaries for poor consumptives, which at the same time relieve the sufferer and through him educate the community. There should be camps for consumptive patients. Farm and tent colonies should be instituted. The establishment of sanatoria should be contemplated, for in them the patient is treated under the best possible conditions; while in such an institution he is not infecting his family, his fellow-workmen, and his community; and when happily he recovers he returns to his familiars as a missionary preaching the principle of hygiene and of prevention which have been inculcated in him. Hospitals and homes for advanced consumptives should be instituted, for while in them the sick man may mercifully end his days in peace he does not under such circumstances (as he would when at home) disseminate the infection in the gravest and most prolific of all ways. Hospitals for tuberculous children should be maintained, so that they may be cured of their joint and gland tuberculosis; so that they may not die at adolescence but may rather live to be a blessing and a bulwark of the body politic.

When we enlarge our endeavors beyond the local sphere we hold up the hands of our Health Commissioner and of the State Department of Health. We become deeply interested in laws for the regulation of factories, for the abolition, or at least the mitigation of exhausting woman and child labor, for the insuring of pure food, milk and meats for our people. We agree with the Roman publicist who proclaimed many centuries ago *Salus populi suprema est lex*—the public health is the supreme law. Widening again our viewpoint, we contemplate and anticipate a Federal Bureau or Department of Health so that the efforts making throughout all parts of our country shall be coordinated and mutually helpful. We shall with the truest patriotism strive for the removal of hard, unfair and cruel economic conditions.

We shall recognize with Lecky that "the great work of sanitary reform has been the noblest legislative achievement of our age, and if measured by the suffering it has diminished, has probably done far more for the real happiness of mankind than all the many questions that make and unmake ministries."

What prospect of ultimate victory have we in this fight against consumption? A fight half won is already won; and thus much is to-day accomplished. In Prussia tuberculosis has decreased forty per cent. In New York City, despite the most untoward conditions imaginable, the consumption death-rate has been cut down fully one-half during the last two decades. We have just come upon the report of Dr. Bulstrode, one of Great Britain's medical inspectors. Several years ago this noble worker declared: "The object of preventive medicine is to curtail and, if possible, to prevent disease, to prolong existence, and to render life happier by means of improved physical conditions." To-day he invites us to consider what such sentiments have wrought. In the year 1838 tuberculosis destroyed in England and Wales nearly 60,000 lives; in 1906, although the population within these boundaries has vastly increased, this disease destroyed less than 40,000 lives. The tuberculosis mortality in these countries in 1906 was about equal to the decrease observed in the preceding three decades; wherefore Bulstrode expresses the belief that, should the decrease in the death-rate continue in the same ratio, consumption should disappear totally from England and Wales within the coming thirty or forty years. Why then shall we not entertain the confident hope that before our children have grown to adolescence consumption will at least be bereft of most of the terrors which till now have attended it. How shall this hope be realized? By reflecting upon the diverse factors upon which the prophylaxis against tuberculosis depends. There has in the first place been the work accomplished by the medical profession, either as individuals or in the public service. To-day medical science has been the pillar of fire to lighten the way; and success has been achieved because the artisan, the tradesman, the plumber, the laborer, the builder, the contractor, the political economist, the statesman, the humanitarian, the churchman have all realized how many and varied are the etiological factors tending to consumption, apart from the specific cause. And they have all joined the physician, working together for the introduction of sanitary science (that babe in the family of sciences) into every phase of our infinitely complex modern civilization.

I end, as I began, in felicitating you upon the part you are taking in this crusade; your interest warrants the opinion that the beginning of the end is at hand. I am reminded of a crew shipshipwrecked upon a shore unknown to them. They saw before them only precipitous and inhospitable cliffs. Beyond these cliffs they knew not what they had to expect, possibly dangers greater than they had thus far endured, possibly death at the hands

of savage natives. One of the most venturesome climbed up this rocky coast, and scanned the horizon from the top. Presently he shouted to the rest: "It's all right, we're safe. I see a church steeple." And I am sure it is propitious indeed for us all when the clergy take part against "the disease of the people," the kith and kin of the founder of the Christian religion, the poor whom He so greatly loved.

THE UNFINISHED BUSINESS OF GENERAL HOSPITALS.*

By S. S. GOLDWATER, M.D.,
NEW YORK.
SUPERINTENDENT, MT. SINAI HOSPITAL; PRESIDENT, THE AMERICAN HOSPITAL ASSOCIATION.

In one year 59,528 patients were admitted to twelve representative hospitals in Toronto, Providence, New York, Philadelphia and Baltimore. The reports of these hospitals show an average mortality of only 9 per cent.; they show, also, that 35 per cent. of the patients treated and discharged, recovered completely from the illnesses for which they were admitted, that 50 per cent. experienced relief or improvement under treatment, that 4 per cent. were so unfortunate as to receive no benefit from treatment, and that 2 per cent. were not treated at all. These figures are shown in the following table:

	Hospitals	Total Number of Patients Disch'ged.	Recovered Cured or Well	Improved or Relieved	Unimproved; Not Relieved	Died	Discharged Against Advice	Not Treated and Trans. to Other Hospitals
1	Toronto General.....1906	3,616	....	3,100*a*	248	268	...	...
2	Massachusetts General.....1906	5,055	1,068	3,005*b*	194	489	128	171
3	Boston City, Boston.....1906	8,693	1,591	5,578	428	1,012	...	84
4	Johns Hopkins, Baltimore.....1906	4,064*c*	....	3,321*a*	108	263	...	372
5	Rhode Island, Providence.....1907	4,719	2,202	1,729	232	498	...	58
6	Pennsylvania, Philadelphia.....1907	4,153	2,245	1,281	213	414	...	...
7	Univ. of Pennsylvania, Phila...1906	3,583	1,988	1,046	153	259	...	137
8	New York, N. Y.....1906	9,377*d*	1,924	6,836	108	427	...	82
9	Roosevelt, New York.....1906	4,206	2,340	1,179	219	468	...	...
10	St. Luke's New York.....1906	2,565	1,436	623	42	292	...	172
11	Presbyterian, New York.....1907	3,311	1,935	662	105	452	...	67
12	Mount Sinai, New York.....1906	6,186	3,807	1,190	504	685	...	...
		59,528	20,536	29,550	2,644	5,527	128	1,143

(*a*) Includes well and relieved or improved.
(*b*) 1,525 much relieved, 1,480 relieved.
(*c*) Does not include 203 patients reported "transferred to other *departments*."
(*d*) Includes 5,865 patients treated in emergency ward.

Upon the whole, these hospitals appear to be making substantial contributions to the health of the community, and there is reason for pride in their achievements. One who is identified with hospital administration in however humble a capacity, may be pardoned if he acknowledges a feeling of complacency upon contemplating a work so far-reaching in its beneficence, and so typical of the spirit of democracy. But admirable as the administration of the typical voluntary or nonmunicipal hospital may be, it is not without its defects. Surely it is no part of the intention of those who provide the support or direct the work of a hospital, that some of those who appeal to it for relief shall be welcomed and comforted, while others are turned away, perhaps unnecessarily, without relief or aid; nor can it be maintained that the customary separation of applicants into the two great groups of hospital cases and nonhospital cases, has anything to do with the innate merit or demerit of the individuals so classified. Moreover, the admission of a patient to a hospital does not always signify his cure or even his material relief, and if upon inquiry it shall appear that hospital work, to-day, is unduly circumscribed by limits which are wholly self-imposed, we must try to throw off such voluntary and harmful restrictions. With this idea in mind, I shall ask you to consider briefly the needs of certain patients whose relations with general hospitals have been, and commonly are to this day, ill-adjusted and insufficiently fruitful.

Let us begin, then, by recollecting that in the main our voluntary hospitals are sound and useful, and within certain limits, efficient, that they confer far-reaching benefits on an immense number of patients, upon the friends and families of patients, upon the medical profession and the public; and that they have a decided economic value for the state. The relative neglect of certain patients of whose needs we are about to speak, might well be pardoned in consideration of the comforts bestowed upon those who are favored by the hospital methods which prevail. The aim of hospital administration, however, is not merely to merit pardon, but rather to win unqualified approval by raising itself to the topmost pinnacle of efficiency; and this is my excuse for focusing attention upon administrative defects which are, or seem to be, remediable.

Can we obtain a clear idea of the efficiency of a hospital from its official reports? If we could, it would be a simple matter to compare the work of one hospital with that of another, to set forth the differences in method which are associated with and cause important differences in result, and then, by a leveling-up process, to establish uniformity upon the plane of the highest known achievement. But whether we consider the very lean statistical summaries which are to-day found in every hospital report, or whether, hoping to get closer to the facts, we compare the results of treatment in different institutions as shown by the tables of medical, surgical, gynecological and other cases treated, we shall find our reasoning obstructed and obscured by the fact that these summaries and tables are the results of the use of widely varying standards in testing the condition of patients at the time of their discharge.

The obstinate patient who is officially cured but does not know it, and who returns to the hospital to confound the too optimistic clinical historian, is

*Read before the Medical Society of Johns Hopkins Hospital, Baltimore, March 2, 1908.

no stranger to any hospital. In fact, a hospital's report of the "cure" of a patient cannot be accepted as a literal expression of fact, and where real interests are at stake, it is not so accepted. Has any one ever known an institutional report declaring a patient "cured," to be received by life insurance experts as a guaranty of the securely established or reestablished health of a would-be policy holder? Take two hospitals doing similar work in similar ways: one, according to its records, "cures twice as many patients as it "improves"; the second, "improves" or "relieves" twice or three times as many patients as it discharges "cured" or "well"; naturally, upon discovering these discrepancies, the student abandons such records as hopelessly misleading, or at least confusing.

It is no easier to determine the exact status of the "unimproved" patient. In the reports of some hospitals, he has a way of slipping over into columns adjacent to his own, so that if we wished to count his kind we might begin by noting the number of patients officially "unimproved," but we should be obliged afterward to sift the ranks of the officially "improved," the "not treated," the "discharged against advice," and the "not admitted." So in the course of this brief inquiry into the neglected opportunities and the unfinished business of hospitals, I propose that we avoid figures which confuse, and adhere closely to facts which are patent; and inasmuch as a hospital may err, first, in declining to undertake the treatment or aid of an applicant, and secondly, in failing to do its best for admitted patients, it will be in order to consider the opportunities and responsibilities of the admitting department before passing on to the work of the wards. I beg of you especially to remember that in what follows I shall have no particular hospital in mind, but will try to keep before me the routine work of any typical general hospital.

Many patients in need of hospital care are refused admission on account of what is termed "want of room," or because there is said to be "no vacant bed." Now the term "no vacant bed" as used in hospital administration does not mean, or does not necessarily mean, that there is actually no single vacant bed in any part of the hospital, but only that there is no bed available in the particular ward or department to which, in the ordinary course of events, the case in question would be assigned. Or, if we consider a group of hospitals rather than a single institution, "want of room" may signify merely that a patient, in ignorance of the general situation, has applied for admission to a hospital which is hard-pressed at the moment, while if he had been better advised, he would have applied to another hospital where vacant beds are plenty. Without considering the erection of additional hospitals, what can be done to improve the chances of the average applicant for admission to any hospital in any large city?

Within the individual hospital, what can be done? First of all, we can substitute elastic department boundaries for rigid ones; we can give to some man or body of men in daily touch with the activities of the whole hospital, and capable of administering its affairs impartially for the greatest good for the greatest number, authority to add beds to, or subtract beds from, the various departments or services, in accordance with fluctuating needs. Suppose that ten, fifteen, or twenty per cent. of the beds in one department are unused for a period of a week, a month, or a year, while every other department in the hospital is overflowingly full and under the necessity of rejecting applicants daily.—shall such a state of affairs be tolerated? Does not common sense point the way to the removal of such an anomaly?

Among a group of hospitals, what can be done? Under a perfectly centralized municipal hospital administration, it would be possible, through the intervention of a central application bureau, for a patient in need of a bed to find his way promptly to the very ward of the very hospital where he could be properly accommodated. In a city like New York, however, or in any large city having the common, yet curious, mixture of municipal, private and semi-public hospitals, each independently administered, an ideally prompt and proper distribution of cases is impossible. Private or nonmunicipal hospitals will not readily submit to a centralized government; and the advocacy of such government, upon theoretical grounds, would lead to no good. But hospitals might retain their independence of control and might nevertheless join hands for the general good. For instance, they could work together under a system of organized voluntary cooperation, similar in method and effect to the scheme which the Hospital Conference of the City of New York has proposed for the government of the ambulance service of that city. The suggested ambulance system provides that the city shall be divided into ambulance districts, and that hospitals which accept district assignments shall inform a central ambulance bureau each morning of the number of vacant beds available for each class of emergency cases. An ambulance sent out for a case will receive its instructions directly from the central office; it will take a patient to the district hospital if there is an available bed there; if not, the patient will be transported to the nearest hospital which is known to have a suitable vacancy.

While the voluntary movements of patients free to apply for admission to any one of a dozen hospitals, cannot be controlled in exactly the same way as can the distribution of ambulance patients picked up in a given district by the ambulance serving that district, it would require no extraordinary wisdom to devise a scheme for keeping each hospital informed as to the daily condition of every other hospital in the same borough or district; and by using this information the members of a voluntary union of hospitals would be enabled to do infinitely better work than is done to-day by the same hospitals working independently of one another.

In some instances the rejection of a patient for want of room is recorded by the hospital, and the sum total of rejections due to this cause is known and published at the end of the year. But the reasons for other refusals are not explicitly given, although well worthy of consideration.* The fact is that hospitals are not, as yet, willing to assume any obligation toward a rejected applicant, and their unwillingness does not, at first glance, seem unreasonable or unduly narrow,—for otherwise there would appear to be no logical limits to the demands upon their limited resources.

And yet the hospital can afford to break its shell and look about it in the world; indeed, its influence

*The Boston City Hospital is the single exception known to the present writer; its report recounts applicants not admitted during the year, according to the following classification: For want of accommodation, self-rejected or deferred, for want of information, referred to out-patient department, referred to department for contagious diseases, nonresidents or no claim, chronic or incurable, pulmonary tuberculosis, delirium tremens or alcohol, venereal, pregnancy, insane or mental, miscellaneous.

will not be wholly good, nor will it approximate ideal efficiency, unless it does so. If it is not asking too much to propose that the bitter cup of rejection be sweetened by a little kindness and consideration, I would say that it is the duty of the application bureau of a hospital to admit a patient when possible; to refer an applicant to another institution or agency when necessary; to take as much pains suitably to place a patient who can not be admitted, as to admit a patient to whom hospital accommodations can be given; and to reject an applicant only when he can not be either admitted to the hospital or referred successfully to other sources of aid.

And after all this has been done, there will remain the duty of recording with care and minuteness, and of reporting with proper emphasis and comment, *all* of the work done by the admitting bureau, whether obviously to the credit of the hospital or the reverse. Hospitals may profit in this matter by the example of the telephone companies, whose operators record every delayed response and "busy" call, and who thus are enabled to win stronger support by showing subscribers where and to what extent their telephone service is deficient. By recording and classifying its own "busy calls," the hospital will learn to know and to reckon with its wider needs, and will thus be prepared to explain these needs to those upon whom it relies for support. Let us glance briefly at the most conspicuous groups of not-admitted cases, upon the disposition of which a full report is desirable, and which merit a degree of consideration rarely accorded them.

The hospital oftentimes receives the first visits of patients who, though not very sick, and properly classifiable as dispensary patients, nevertheless believe themselves entitled to hospital care.* Such patients are advised to go to the dispensary, and doubtless a certain proportion of them welcome the news that their admission to the hospital is unnecessary; but the vast majority prefer the continuous care of the hospital, with its free lodging, board and medicine, to the intermittent care of the dispensary doctor, who is not prepared to pay the patient's rent, or to provide the food and delicacies which are necessary to the cure which the patient is seeking. Is it sufficient merely to tell these patients, who clamor for hospital admission, that the proper place for them is in the dispensary? In many instances the refusal to admit them to the hospital is at once interpreted by them as an evidence of indifference, perhaps even as an act of hostility. To avoid such misunderstandings, the admitting department of the hospital must be so organized as to insure leisurely and sympathetic inquiry into the needs of each applicant, instead of a somewhat hurried examination, with the routine verdict of guilty or not guilty of being a hospital case. Assuming that every patient who is referred to the dispensary really belongs there, we should endeavor to get such a grip on him as to make sure that he will not slip out of our care. In some cases the patient's actual enrollment in a dispensary class may be as important to him and to his family and acquaintances, as would be his admission to the hospital; this is notably true of venereal cases.

The venereal patient is not wanted in the typical American hospital. Although the prevailing sentiment excludes patients of this class from the general hospital, their proper care is at least as necessary to the individual and as important to society as is the proper care of cases of typhoid fever or of any other dangerous infectious disease. In bespeaking consideration for the venereal patient, I am aware that I am making not the first, but the thousandth individual appeal, and that all who have preceded me have spoken in vain. The helping hand of the hospital draws back, because the sufferer is not clean.

It is recorded that forty years ago the house physician of a certain New York hospital was asked to defend himself for turning away from the hospital during the night a young woman in labor, who shortly afterward was taken to a neighboring stable by passersby and there delivered. The house physician justified his conduct by asserting that the woman wore no marriage ring and therefore was not a proper hospital case; and the explanation was accepted as consistent with the policy of the hospital. We repudiate such brutal policies to-day; we are accustomed to say that the function of the hospital is to relieve and not to punish, but we do not consistently live up to these high-minded declarations; the common practice in America is still to ignore, in large part, the needs of patients suffering from venereal infections.

The discrimination of hospitals against patients suffering from what are still regarded as shameful diseases, is sometimes attributed by physicians to the prejudices of the laity who support our private charities. But the argument limps; the prejudice is not solely, or chiefly, the prejudice of laymen. How often have the medical staffs of hospitals presented to their lay coworkers a united front in advocacy of a broader policy? With what degree of earnestness or persistency have they officially as a body, denounced the inconsistency of denying to a woman urgent treatment for acute gonorrhea, while standing ready to accept her as a hospital case when a surgical complication has set in? Or ridiculed the equal inconsistency of refusing to admit a man suffering from primary or secondary syphilis (when his admission would save him and his family from untold suffering), while standing ready to make room for him in the tertiary stage of the disease, when his constitution has been shattered and his wife and children have been infected?

But, putting aside our regrets for venereal cases that ought to be cared for in the wards of the hospital, let us consider the venereal patients who could be treated in the dispensary, and who for the present must be treated there, if anywhere. Is the situation made clear to such patients? Are they received as if they were welcome, or are they made to feel that they are in the presence of unsympathetic judges, and not of friends eager to help? Every case of this class which, on account of the coolness encountered in the examining room of the hospital, fails to be safely delivered into the hands of the proper dispensary department, is an indictment against prevailing hospital methods.

Consider also, if you will, the plight of another group of applicants,—those whom the public hospitals, especially, reject on the ground of foreign domicile. The nonresident patient who comes to the city for care to which he is not legally or by custom entitled, who requires an operation or other treatment for which there is no urgent necessity, whose means are limited and whose knowledge of hospitals and hospital rules is slight, needs not only a medical opinion, but the most explicit instruction. The advice given him should be full and free, and calculated according to his position and needs.

*In 1906, 10,543 patients applied for admission to Mount Sinai Hospital; of this number, 1,912, or nearly 20 per cent., were referred to the dispensary. It is impossible to say how these figures compare with those of hospitals generally, for the reason that very few hospital reports make any mention of cases not admitted to the wards.

The neurasthenic patient is another who will have little to be thankful for if dismissed with a diagnosis which accentuates the gloom caused by his rejection, and with no aid beyond a nod in the direction of the dispensary. If he is to be referred to a dispensary at all, it must be to a dispensary which takes its work seriously, and which is prepared to inquire into the patient's social condition and its relation to his disease.

The senile patient is one whose home affairs especially demand inquiry, with a view to determining whether the patient should be encouraged to enter an institution or should be returned to his family. While remembering that in such cases the burden of duty is always upon the next of kin, we must nevertheless inquire whether those who are responsible can without undue hardship stand the strain we would put upon them. The same thought applies to cases of mental disease, and to the whole multitudinous class of incurables. The admitting department can be of incalculable benefit to the friends of such patients, if instilled with the desire, and granted the time, to give sound and appropriate advice.

Of incipient tuberculosis, whose victims hold so prominent a place among the applicants rejected by general hospitals, it seems almost superfluous to speak. Tuberculosis has its special agencies of relief, prepared to deal more or less efficiently with any phase of any case; to provide for the disinfection of the home, for the conversion of the tenement lodging into a fresh air camp, for the better feeding of the patient, for a change of occupation, for the patient's removal to more healthful surroundings. Since the general hospital no longer attempts the impossible task of curing cases of tuberculosis by admitting them to a general hospital ward, the examining physician should see to it that the tuberculous who apply to him for treatment or diagnosis are placed in the care of the special tuberculosis dispensary, the district nurse, the charity organization society, the society for the employment of the handicapped, the industrial removal office, the board of health, or whatever agency exists in the community for the promotion of the patient's welfare. And in these days of the great organized movement for the social control of tuberculosis, the hospital should carefully tabulate and report upon all the cases of this group which apply for admission or treatment.

The pregnant woman, diseased or not diseased, is a familiar figure in every hospital anteroom; she is excluded from most general hospitals; and she receives, oftentimes, as a reward for her application, the bare statement of her condition,—a service for which her gratitude cannot be great. If she is needy, means of aiding her are close at hand, in the form of the lying-in hospital or the society devoted to the care of her class. The problem is merely to guide her to the proper door; but easy as this is, it is apt to be omitted.

The duty of the hospital toward a case of contagious disease will obviously vary according to the nature of the disease, the immediate condition of the patient, the character of the hospital, and the special facilities available. Wherever there exists a vigorous board of health, it is expected that cases of contagious disease will be referred to and cared for by this board. But many towns in the United States are still without special hospitals for the care of contagious cases; and in no city in the country, not even in New York, whose department of health has been for years a tower of strength for the support of the public health, is there an adequate hospital organization for the care of cases which should be isolated. One reason is that the needs of the department of health are not known. The liberal public support which is required by the department would be more readily obtained if the reports of hospitals laid due emphasis upon such phases of hospital incapacity as are known or assumed to be significant from the standpoint of public health. The attitude of hospitals toward erysipelas is illustrative.

Hospitals refuse to admit erysipelas because of the tradition that erysipelas is an uncontrollable contagious disease. How many such cases are refused in the course of the year, or what becomes of them, nobody knows; at present erysipelas is lost in the general summary of unclassified cases "not admitted"; neither hospital managers, the public, nor the public health authority, is made aware of what is happening, nor is guided by intelligent reports to a practicable and suitable method of relief.

Companion to the known contagious case, in the problems of hospital administration, is the contagious suspect. When contagious disease is suspected but not proved, the hospital should be ready with facilities for the temporary isolation of the case during the period of doubt. That such cases are sent home to blossom into exanthemata in the dangerously congested precincts of a tenement home, is a matter which should arouse the deepest concern; the avoidance of the practice would follow speedily upon an exposure of the facts.

Enough has been said to show that the admitting department of a general hospital presents many neglected opportunities of usefulness. It would be well if we could console ourselves with the thought that we bestow upon the patient whom we admit to our wards, the utmost attainable benefits of the science and art of medicine. Unfortunately, many a patient who is happily started upon the road to relief, falls by the wayside because he does not adjust himself to our personal peculiarities, or because we do not endeavor to understand his. Why is it that so often we fail to inspire perfect trust in our patients? Often, no doubt, the mischief is due to the patient's ignorance or superstition, or to suspicion rooted in unhappy experiences with other doctors. Yet I think we must concede that by means of a greater show of personal interest in our patients, we can lessen the number of those who leave the hospital against advice, and who, by this unceremonious departure, swell the army of the "unimproved."

It is true that some patients will not be persuaded, however sincere the interest in their welfare, however patiently the argument is put, however clearly the alternative consequences are pictured. But we must not fail to invoke every possible resource in a cause so good. There are in every hospital a few men, the possessors of rare personal charm or magnetism,—men who are unusually successful in dealing with insubordinate patients. We should employ their charm, apply their eloquence, where it is most needed. We should permit no patient to go untreated who by any means at our command can be persuaded to do what his own best interests require. The insubordinate patient is his own enemy, —it is a mistake to look upon him as an enemy of the hospital.

Lack of personal adjustment, then, is one possible obstacle to the adequate relief of hospital patients; another, more certainly avoidable, is to be found in the administrative isolation and the psychological tendencies of the specialist. In the statistical report of the Johns Hopkins Hospital for 1906, it is

noted that in the course of the year, 203 patients were transferred from one department of the hospital to another, evidencing an uncommonly high degree of departmental coordination. If similar figures appeared in the reports of all, or of many other hospitals, there would be no reason for referring here to the danger of placing the specialist in a position of administrative independence, and of encouraging him to pursue his work without cooperation or control.

The mental tendency of the specialist is toward a contracted field of interest, and therefore his contribution to the patient's welfare, however valuable, may reasonably be assumed to be neither comprehensive nor final. The danger does not lie in subjecting the patient to specialized routine, with its implication of rare and accentuated skill, but in taking it for granted that a very busy regional surgeon, for example, will do for a patient in a hospital, all that is done in private practice by the family doctor and the surgical specialist combined. I need not draw upon my own experience, nor ask you to draw upon yours, for clinical illustrations with which to support this view. When reciprocal support becomes the rule among hospital workers in different clinical departments; when active, persistent, and liberal cooperation becomes the universal practice, the readmission of patients will be a less frequent necessity, and the volume of effective hospital work will be greatly increased.

But with all of our available resources and skill brought freely into play, we may still fail to achieve the cure of the patient. What a sorry array of invalids marches into the hospital and out again each year, laden going as well as coming with burdens we strive in vain to remove. Conspicuous among them are the patients suffering from malignant diseases, who come too late for even an attempt at surgical relief, and go away labeled "inoperable." Others, similarly afflicted, but regarded as having a fair chance of cure, come for operation; and formerly, after operating upon them, we dared to discharge them as "cured." Experience has taught us modesty, and we now dismiss these patients as "relieved" or "apparently well." Rheumatism, heart disease, and chronic nephritis claim our beds in greater and greater numbers; diabetes staggers us by its frequent repetition and its obstinate return; hemiplegia and a host of nervous disorders clamor for admission to hospitals that shun them as undesirable chronic diseases, or admit them for a brief period of respite only. The patients who are afflicted with a vicious diathesis virtually incurable, come to us a first time in hope, a second time in doubt, and a third time in despair; they leave us, if, indeed, they leave us at all, carrying their unfortunate diathesis with them;—we are content, feeling that we have done our best.

Have we really done our best for those whom nature chooses to expose, beyond the breastworks of our available knowledge, to the attacks of diseases which we are powerless, as yet, to oppose? Can we maintain that we have used all our resources or exhausted our efforts, if we have not made it plain to every one how large a part of the domain of medicine is still unexplored, and if we have failed to plead for the privilege of further exploration? To acquit ourselves of the charge of negligence to our trust, we must teach the world that the proportion of hospital failures, the hospital's unfinished business with a large group of pitiable sufferers, cannot be materially diminished, or at all events is not likely to be, until every hospital becomes a scientific workshop, equipped with every resource for productive research,—not merely laboratories, and laboratory workers, but a medical organization planned to attract and hold and develop the best clinical minds.

The grouping of similar cases for purposes of intensive study has not been so much as thought of in half the big hospitals in the land; and in many of the other half it has not been attempted because the conception of the scientific mission of the hospital has won no commanding place in the minds of those charged with administration. And so it comes about that patients whom we would gladly aid, if we could, are deprived of their just dues, while hospital trustees listen to the whispers of a nearsighted kindness which declares it a sin to use human beings as objects of study, never stopping to consider the ends to which this study would be directed.

I often think that the preeminence of Johns Hopkins among American hospitals, has been won with an ease that is not creditable to other institutions. In wet-blanketing the ardor of scientific enthusiasm, in shutting their doors in the face of the research worker and its medical student, hospitals have abandoned their claims to distinction and have stunted their own growth. Sentimentality has commanded them to lock up their priceless storehouses of knowledge, and medical science in America has been half starved in consequence.

The failure to cultivate scientific opportunity represents one of the gravest forms of administrative unwisdom which can be charged against American hospitals. It is due to other forms of administrative defect that many patients who leave the hospital ostensibly cured, soon knock for readmission. Analyze these cases and you will discover that some patients, such as those barely recovered from an acute exacerbation of chronic endocarditis, or operative cases just out of bed, leave the protecting wing of the hospital too soon; and others, among whom are the diabetics, the neurasthenics, and the rheumatics, resume upon quitting the wards, occupations, and habits fatal to the hope of permanent relief; that still others, convalescent from pneumonia or typhoid, or suffering from chronic bone diseases or from incipient pulmonary tuberculosis, are the victims of a return to homes where fresh air is a stranger, where suitable food is unknown, where any food is scarce. These are the patients whose recognized needs gave the first impulse to the movement for the establishment of convalescent homes, and then prompted the introduction of the social worker as a hospital auxiliary.

Now, the welfare worker and the convalescent home can do much to supplement the routine work of the ward. They can, and do, in many an instance, transform tottering convalescence into stable health. But the supplementary needs of hospital patients often require more than either the social nurse or the convalescent shelter is able to bestow. On a future occasion I shall endeavor to show that these needs are such as can only be met by establishing a full-fledged department of personal hygiene, equal in rank to any other department in the hospital. The function of this department would be to take up the task of reestablishing the efficiency of the discharged hospital patient where the clinical therapeutist, with his drugs and his bedside paraphernalia, lays down this task, unfinished.

There is, it would appear, much that the average general hospital leaves undone. So remote and complex are many of the causes that contribute to disease, that the hospital cannot now or ever, hope

to discover or deal with them all. We cannot ask that the hospital shall undertake to remedy the faults of the whole social system; that it shall make all men prosperous, and shall grant them, as a part of prosperity, a reasonable chance for the preservation of health. It is not too much, however, to ask those who are concerned with the management of hospitals to keep before them always the ideal of the efficient hospital,—an ideal which can only be approximated through a knowledge of the actual and the possible defects of hospital work, and through a constant effort to remove the one and to avoid the other. And in seeking this ideal we have to remember,

That while failure to cure some patients is inevitable, the chances of successful treatment can be improved by the encouragement of scientific work; that the hospitals which have been, and are doing, most for hospital patients and for humanity, are those which provide liberally for clinical and laboratory research and for the education of the medical student;

That, indispensable as may be the specialist's contribution to the welfare of the hospital patient, it is prudent not to regard this service as self-sufficient or final, but wise rather to esteem it as a link in the chain of cooperative clinical relief;

That the patient's confidence is worth having; that good hospital management presupposes the use of every available means of winning the patient's confidence; that the discharge of a large number of patients contrary to the advice of the attending or house staff, without treatment or relief, is not creditable to any hospital;

That it is the duty of the hospital to cooperate to the fullest extent with every relief agency capable of benefiting those who have been, who are, or who may be, its patients, and that the fulfillment of this duty implies the elaboration of the all-too-simple admitting department;

That it is a function of the admitting department to record and to publish all that it does for the patients, *and, with equal emphasis, all that it fails to do,* to the end that all who are interested may know how to proceed to fill existing gaps in the organization of hospitals;

That in any city, and in most hospitals, beds are often kept vacant and patients refused the treatment they seek, when the voluntary cooperation of hospitals, in the one case, and the occasional crossing of unnecessarily rigid departmental lines, in the other, would fill the beds and save the patients;

That by the recognition of these truths, the efficiency of American hospitals can be greatly enhanced.

Mt. Sinai Hospital.

RECURRENT VOMITING.*

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It is not the purpose of this paper to present a series of cases of cyclic or recurrent vomiting, no matter how interesting these would be, nor to discuss at length the variety of symptoms which may be met with. All internists, including pediatrists, together with ophthalmologists and neurologists, meet these cases from time to time and are more or less familiar with the symptomatology. My object is, however, to take up and discuss, in a brief manner, the various theories of its etiology and the problems of faulty metabolism with which the condition is almost always associated, as well as some points in its treatment.

To characterize the condition briefly, it may be called a symptom complex, occurring for the most part in children from two to twelve years of age (although occasionally met with in adults perhaps) in which there may be a few days or hours of prodromal symptoms, such as lassitude, constipation, redness under the eyes, etc., and followed often without these symptoms or any error in diet, by vomiting, at first of food, later of watery fluid with some mucus, without reference to ingestion of food, although usually aggravated by attempts at feeding; this may come on quite suddenly without warning, and often the only exciting cause is a fright or shock of some kind.

The temperature is normal, subnormal, or only slightly elevated; the pulse often becomes quite weak; the child at first looks fairly normal, but rapidly shows signs of a severe illness out of all proportion to the main symptom of vomiting, as from a severe intoxication; the skin is pale, often sallow; there is rapid loss of flesh and strength, with absolute inability to retain food or water by mouth. This condition lasts from two to fourteen days, with a gradual return to the normal and subsidence of all symptoms; this return to the normal may also occur very rapidly. Although these little patients look and are severely ill, the condition is very seldom fatal, only a few such cases being reported; but the attacks are always alarming to the parents, and usually most disconcerting to the attending physician. They are apt to recur at intervals, varying from a few days to weeks or months, but are usually not at stated intervals, although they may come very regularly.

In later life these patients may be sufferers from migraine, which in the adult is supposed to be the analogue of the recurrent vomiting in children. A certain number of cases of this form of vomiting in adults have been reported, but as practically all the attacks are reported as accompanied by severe pain, they are more probably examples of tabetic crises of intermittent abdominal claudication or some such condition, and not a true recurrent vomiting.

We are now in a position to take up the consideration of the question from an etiological point of view, and to that end may discuss to advantage the various theories* advanced in explanation of this phenomenon, based more or less on the metabolism of the body as shown principally by urinary changes.

Theory of Edsall.[1] According to this the condition is due to a grave acid intoxication of a type met with in diabetes. He found one child suffering from a severe attack in whom the blood was feebly acid, which he considers due to an abnormal amount of acidosis with absorption into the blood, so reducing its alkalinity. He explains the acidosis as due either to faulty metabolism or primarily to digestive disorders exaggerated by a disturbance of metabolism.

The acidosis, here as elsewhere in disturbed metabolic conditions, is due principally to a vicious fat metabolism, the oxidization of which under ordinary conditions yields energy to the body, and by complete oxidization is broken up into water and carbon dioxide. The intervening products are beta-oxybutyric and diacetic acids, which, so long

*Read before the Hospital Graduates' Club, New York, October, 1907.

*In discussing some theories considerable assistance has been derived from Dickinson's work.

as metabolism is intact, are further oxidized into the end products and never appear in the urine. When, however, this process of oxidization is interfered with, these intermediary products are retained, circulate in, and are absorbed by the blood, and are gradually excreted as such in the urine. The complete burning up of these acids takes place only in the presence of an accompanying combustion of carbohydrates, and if these are absent from the diet, as often in diabetes, these acids are then excreted as before stated. This is also the explanation of their presence in starvation.

If, then, the acidosis appeared *only* late in the course of the attack, the explanation would be simple enough on the ground of starvation, but this is not a fact, as it is frequently found early, or even before the acute onset, so that at least in certain cases, as Howland and Richards point out, the presence of these acids must be accounted for by a loss of power in the cells to oxidize carbohydrates.

Edsall, too, thinks that autolytic processes are increased in this condition, just as Alonzo Taylor, in studying the acid intoxication following chloroform anesthesia, found that apparently the acidosis was secondary to the increased autolysis. Edsall thinks that a possible explanation of the occasional good effects as well as failures seen in the alkaline treatment of this disorder may be found in this fact, because Rowland and Hedin discovered that autolytic processes are favorably influenced by acids, but unfavorably affected by alkalies.

Comby[2] considers the attack a manifestation of an arthritic diathesis, because (1) cases occur so frequently in children of arthritic parents; (2) of a certain analogy between cyclic vomiting and migraine; (3) of the possibility of these attacks being converted later into migraine, as a certain number of children with cyclic vomiting when young have subsequently developed migrainous attacks.

Snow[3] thinks that the condition is a simple gastric neurosis accompanied by hyperacidity, and absorption of ptomains can precipitate an attack. No satisfactory clinical or experimental evidence is adduced to support this.

The theory of Griffith[4] differs from the last in that he considers it a neurosis of toxic origin.

Rochford and Whitney[5] trace it to an hereditary arthritic diathesis, which, besides producing uric acid, also produces poisonous leucomains related to the purin bodies, which are diffusable and gradually accumulate until an outburst. They call it a "lithemic gastric neurosis."

Mery[6] blames constipation and thinks most of the cases are due to that.

Richardière[7] attributes attacks to insufficient liver function, as signs of hepatic derangement are often seen, and he considers that the acetonemia and acetonuria, which are the most constant symptoms, must be looked on as an effect of this, that the liver is no longer able to destroy or prevent the formation of acetone in the system.

Hutinel,[8] quoted by Gilberti, elaborates this hepatic theory. He says that normally the toxins which are formed as a result of metabolism are eliminated, but if the liver is not capable of doing this, the poison gets into the circulation. The reaction varies with the individual, as all persons do not show identical reactions to the same stimulus, so it results sometimes in rise of temperature only, or urticaria, or various nervous phenomena, and sometimes in vomiting of a periodic or recurrent type.

Broca,[9] apparently, because in two cases the attacks ceased after removal of the appendix, puts the blame generally on an unrecognized appendicitis.

Comby, giving various statistics in thirty-four cases, found that in only two cases the appendix was implicated. There were twenty-four girls and ten boys, more than two to one. The favorite age was between two and ten years. Constipation was found in thirty cases. Most of the children were of a neuroarthritic diathesis, and among the more wealthy classes.

Rachford[10] describes the condition as a migrainous-gastric-neurosis, and found alloxur bases in the urine the same as found in migrainous attacks in adults.

Theory of Howland and Richards. "By far the most satisfactory experimental explanation of cyclic vomiting is offered by these authors, who attribute the attacks to an intoxication arising from products of proteid putrefaction in the intestine, under circumstances which have resulted previously in a lessened power of oxidization of the body cells, and sum up by saying that they believe at the outset of the attacks there is an interference with certain metabolic processes in which oxidation plays a part, and that as the attacks wear off the urinary signs of this interference wear off too. The indican so universally present in the urine of these cases means an increase, not only of indol, but of skatol and phenol, and is a result of synthetic product of oxidization of indol. This they show very well in their experiments in dogs, for indol injected into healthy dogs causes little or no harm. If, however, the oxygenating power of the cells is lowered, as can be done artificially by chloroform inhalation or giving a small dose of potassium cyanide, and then phenol or indol be injected, the toxic effects are marked, causing nausea, vomiting, blindness, stupor, or delirium, and if the amount injected is large enough, death occurs in from three to several days. In these experiments it was noted that in the normal dogs, after an injection of indol, the substance was entirely excreted in twenty-four hours in the form of indican, whereas in the animals previously poisoned by chloroform or potassium cyanide the amount of indican in the urine was greatly lessened, and its excretion was prolonged over a much longer period.

The autopsy in the fatal cases showed marked congestion of the entire gastric intestinal tract, especially of the duodenum, lower ileum, and colon, with extensive necrosis of mucosa and submucosa. The liver showed great degenerative changes.

The autopsy in one case of a child who had died in the fifth attack, showed a liver which was large and the seat of a fatty degeneration; the kidneys were also fatty, but there was no nephritis.[12] Usually the fatal cases are due to a complicating nephritis, although it seems likely that in this case the vomiting was more of renal origin.

The application of these findings, experimentally produced, to the condition of cyclic vomiting is that "in children fright or a shock of some sort reduces in an unknown way the power of oxidation and the organism thereby loses the power to detoxify substances absorbed from the intestine, which have been present there in excess; these circulate in the blood, and since they are not brought to the kidneys in proper form for excretion are retained, so causing the symptoms. Finally, the power to oxidize and detoxify these substances returns, and they are rapidly eliminated with quick improvement." They do not think the toxic qualities all confied to indol. Incidentally, they found also that in these poisoned dogs peristalsis was excessively

active, but that little fecal matter was found; this may very likely be the explanation of the reason that cathartics are so slow and ineffectual when given after the attack has begun.

Holt[13] has found a deficiency of uric acid in the attacks; and in one case the uric acid urea ratio was 1:83, which in a normal condition in the same patient was 1:42.

In summing up these various theories we may state them briefly thus: That the condition of cyclic vomiting may be due to (1) a pure neurosis; (2) a toxic neurosis; (3) an acidosis from a vicious metabolism principally in the digestion of fats, with or without autolysis; (4) a toxicosis from intestinal putrefaction of proteids when accompanied by a suboxidative power of the body cells; (5) a rheumatic diathesis.

That the cases may in some instances be due to one or another of these causes, or to a combination of one or more, seems likely, and further study is needed to enable us to classify them promptly clinically, which is, of course, the important thing for us as physicians.

Treatment.—Although there is no specific treatment for this condition, either for the attack itself or in the way of positive prophylaxis, much may be done for the patient's comfort, the severity of the attacks may often be mitigated, and their occurrence made less frequent.

From the standpoint of its being a pure neurosis, there is little to be said therapeutically, except, of course, we must improve the nervous stability of the children by all known means, such as exercise, baths, and general hygiene; from the psychical point of view nothing can be accomplished owing to the age of these little patients.

From the point of view that it is due to a real toxemia (as about most cases, if not all, there is little doubt in the minds of careful observers that it is so) we must first know the actual conditions present. Is it due to an acidosis? We must use alkalies. Is it due to a poisoning from the phenol group? We must purge them. If suboxidation is at the bottom of the trouble in association with the intestinal toxins, can we do anything to increase this, or must we wait many days to let nature do our work for us?

In this last connection it might be well to try the effect of thyroid extract on purely theoretical grounds, giving it by mouth if possible in small doses, or by hypodermic injection, or by rectum, as this substance increases metabolism by a direct increase of oxidizing power of the cells under ordinary conditions, and whether it would act under such abnormal metabolic circumstances can be determined only by trial; no reference to its use has been found in the literature on this subject.

One thing seems certain—that constipation holds a very fostering position in relation to these attacks, being present in thirty out of thirty-four cases already alluded to. It should be everlastingly combated in the children prone to such attacks, first, by all dietary means possible, under which may be mentioned the bran biscuit, regular habits, water drinking, abdominal massage, etc. In most cases it is a good plan to give these children calomel at regular intervals, every seven to ten days to insure a good cleaning out, if the attacks are frequent or severe; otherwise, rhubarb, magnesia, etc. As these children, with care and an increasing nervous stability, outgrow this tendency, there need be no fear of their becoming addicted to cathartics.

Then, too, those cases which are apparently due to acidosis or to uncertain cause, are often kept better by giving constantly or from time to time small doses of an alkali, bicarbonate of sodium being the one most easily given.

In the prophylaxis of future attacks, besides the occasional laxative the best results have been obtained by restricting in the diet the excess of proteid and carbohydrate foods, particularly the sugars, and making up their loss by an abundance of fats in the form of cream, fresh butter, fat meat, etc. If one must use salted butter, it should be worked over in fresh water to remove as great an amount of the fatty acids as possible.

For the attacks themselves we must do what we can, besides the initial cathartic, which may or may not be retained, and will work slowly and often unsatisfactorily at best. The indications are to supply fluids to the tissues in large amounts to dilute the poison, and food in small amounts, the latter by far the most difficult undertaking. In this connection it might be of service in certain of the cases to use high colonic irrigations of an alkali solution, or in extreme cases even to give it hypodermically or intravenously.

As the vomiting is probably eliminative, due to the excretion of the poison by way of the gastric mucous membrane, it will be seen that the usual antiemetic remedies will be useless. It is useful, however, to give fairly large draughts of either plain or alkaline water, with the idea that it will be promptly vomited, and so accomplish autolavage; or actually to wash out the stomach at intervals.

Valenti,[14] experimenting in dogs, found that after cocainizing a small area at the back of the throat at its junction with the upper end of the esophagus, he was able to give large doses of emetics which act centrally, *e.g.* apomorphine, with no resulting vomiting, and also locally acting emetics, which only had an effect several hours after the drugs were given, when in fact the effects of the cocaine had worn off. This may or may not prove valuable in these cases, for if successful, although in no way limiting the course of the disease, it would do much in the severe cases to save the patient's strength.

So far as rectal feeding goes, here as in other conditions it is most inadequate, for in spite of much that has been written in its favor, when actually put to the test, from the standpoint of metabolism, it fails; for by estimating the rectal intake of nitrogen and balancing it with what is passed in cleansing enemata plus urinary nitrogen, it is seen that there is a steady and unsatisfied loss of body proteid. This I put to a practical test in several cases of rectal feeding, and found the total daily loss of nitrogen ranged from 8 to 24 gms., accompanied by a steady loss of body weight. These results tallied to a large extent with those obtained by Edsall[9] and Miller.[15]

If, however, it is decided to use the rectum for alimentation as well as for supplying water to the system, it will be of service to use much smaller amounts of *fully* peptonized milk (two to three hours) alone than is usually done; this is by far the best substance, as shown by what Chittenden found, that nitrogenous equilibrium could be maintained upon, namely, 15 gm. nitrogen per kilo of body weight. This would mean that a child weighing 25 kilos would receive 3.75 gm. nitrogen in twenty-four hours, or about 750 c.c. of milk, roughly a pint and a half. This is allowing an average of .5 per cent. nitrogen in milk, a convenient number to remember. This would furnish approximately 542 large calories, the actual needs of such a child being about 600 large calories, quite near

enough. Water should always be freely supplied by rectum or colon, even by hypodermoclysis if necessary.

These attacks of recurrent vomiting are always distressing and occasionally fatal. The care of the child during the attacks, in the prevention of future ones, or at least in making them infrequent, may well tax the patience and ingenuity of the physician.

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66 West Fifty-fifth Street.

THE NEW SCHOOL HYGIENE.*

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It is not hard for many of us to recall the day, a few years in the past, when we sat with half a hundred others in a steam-heated, window-closed, gas-lighted room, squeaking with soapstone on a spit-greased slate; sitting, those of us who were short, with feet dangling above the floor, and those who were long, with knees bent against the desks in front. It is not difficult to remember how we peered from dark corners of the room, straining to read the writing that dazzled with a thousand reflections from the distant blackboard. We who were nearsighted remained in our rear benches, while the smart boys with their emmetropic eyes, heads of the class, occupied the front benches. Others of us who were mouth-breathers and failed in our lessons were kept back and called dunces, and at home had clothes pins fixed to our noses if we snored at night. We were a private, if not a public nuisance, and were tolerated more or less only because some day we would outgrow talking through our noses and breathing through our mouths. The lower classes had a recess of a few minutes in the forenoon, to be spent not romping in the sunshine, but going down narrow, stone stairways to a dark, foul-smelling toilet, and back again up four or five floors to the classroom once more, where the atmosphere had been bottled up carefully and preserved to be breathed again. The big fellows in the upper classes were able to withstand, of course, the many demands of nature, and needed no recreation or exercise until dismissal.

Even in those days we were taught a little hygiene, while we sat in a vitiated atmosphere. The evil effects of alcohol and tobacco were displayed before us on highly-colored charts, though we saw our fathers and our uncles, and even our teachers, hale and hearty, though drinking and smoking.

*Read at a public meeting held March 20, 1908, by the East Side Physicians' Association.

Slates have entered the limbo of desuetude. Blackboards, we pray, will follow. In most of the schools properly constructed desks and windows give comfort, fresh air, and light to pupils and teachers. Many of us have been fitted with glasses, by opticians probably, or have outgrown our enlarged tonsils and adenoids. The teachers have lost their fear of fresh air and sunshine. Reports of the Board of Education show a decrease in the percentage of truancy in the year 1907 over that of previous years. While this decrease is due largely to an increased efficiency of the truancy department, and a more thorough administration of the Compulsory Education law, I think it due also, to some extent, to more inviting and pleasant school surroundings. In many homes knowledge has entered, and the old fetiches—mufflers, chest-protectors, closed windows—are losing their pristine power. Recent-day physicians are responsible for this beneficent change both at home and at school. We no longer may be called bleeders and leeches, but apostles of fresh air and sunshine. And though this change from the old ideas of hygiene to the new has been most noticeable in the school, it had its beginning in the home, where the family physicians have been teaching for many years the dangers of darkness and bad air. In the schools the changes have been most marked because there the movement for the new hygiene has been organized. The old teaching of hygiene, that dealt with the evils of alcohol and tobacco, and neglected the evils of unsanitary surroundings, has been giving way rapidly before the new teaching that deals with the correct habits of health and with the relation of health to happiness and efficiency. We are learning that social and physical defects are more threatening to the welfare of children than alcohol and tobacco. Unsanitary homes and schools, dirty streets, and infected milk, breed defective bodies that crave the excessive use of these poisons.

A hue and cry recently has arisen over the physical defects of school children. They are looked upon by many as something entirely new, something that has appeared, Minerva-like, portents of the future degeneration of the American race. Though 12,000,000 school children of the United States have more or less serious physical defects, there is no cause for panic or pessimism. There are no reasons to make us think that the percentage of children suffering from physical defects is higher now than ever before, only that the unsanitary conditions and ignorance prevailing amid the crowded environment of a great city to-day aggravate their seriousness. To quote from the recent report of the New York Committee on the Physical Welfare of School Children, "the only new thing about the physical defects of school children is not their existence, but our recent awakening to their existence, their prevalence, their seriousness if neglected, and their cost to individual children, to school progress, to industry, and to social welfare."

The movement of human endeavor is like the pendulum of a clock. It is trite to say we rush to extremes, but it is an axiom that we must bear constantly in mind in this struggle for new hygiene. We have passed the point of utter neglect; we are approaching the up-curve of the movement of the pendulum, and there is a tendency to-day to attribute to physical defects all those weaknesses of human nature that prevent us from reaching the ideal. Much backwardness in study, truancy, incompetence, crime, no doubt are due to physical de-

fects that prevent proper physical and mental growth; but, if there never were such things as physical defects, these human weaknesses still would exist. We must bear this in mind or our broth will be spoiled by too much handling. We must not expect to create ideal conditions by eradicating defects, but we must expect to lift to a higher and better physical and mental life many thousands of human beings, who would otherwise remain a barrier to the progress of civilization.

Briefly, then, the problem is this: At various times the Department of Health has declared that about one-third of the public school population is suffering from some one or more physical defects, that inhibit not only physical but mental growth. How can we correct most quickly and cheaply these defects, and, at the same time, prevent or at least curtail their prevalence in the future?

To attain this result we must learn in the beginning what are the causes of physical defects among children, and what conditions at school and out of school tend to aggravate them. At the start we must remember that many physical defects are congenital, and that others are aggravations of normal conditions. We must expect, therefore, to find them amid all classes of life, from the very poor to the very rich, among the country as well as among the city dwellers. We are born myopic, hypermetropic, and astigmatic; unsanitary surroundings aggravate these conditions, do not manufacture them. Adenoids and tonsils are normal tissues, necessary to the functions of the body. Follicles are normal in the conjuntiva. Only when unduly hypertrophied do these tissues become a menace to the health of the child. Other defects there are also, which we call acquired, such as enlarged glands, cardiac and pulmonary diseases, bone diseases, malnutrition, and, above all, defective teeth, which are caused directly by unhygienic school, street, and home surroundings.

The conditions that tend to cause or to aggravate physical defects fall naturally into two groups—unhygienic conditions at school, and unhygienic conditions outside of school, particularly at home. To prevent, as well as to cure physical defects, we must study these errors of school and home environment and correct them.

I wish to bring before you a few of the many practical facts obtained by the Committee on the Physical Welfare of School Children, in its study of the home conditions of 1,400 defective school children of the City of New York. The cases have been taken from schools both old and new; schools representing not only poverty-stricken and crowded districts, but also those well-to-do and spacious. Surprising as it appears, low incomes do not monopolize physical defects. Only 8.4 per cent. of the cases reported belong in families having an income less than $10 per week; 59 per cent. have more than $15; 43 per cent. have over $20; and 15 per cent. over $30 per week. Of the 1,400 cases only 145 are reported for malnutrition, in the face of the crusade for free meals at school. Though 50 per cent. go without milk, cereal, meat, or eggs for breakfast, only 2.8 per cent. report no eggs or meat during the day; and only 0.7 per cent. claim to have nothing for breakfast.

The housing conditions, however, especially among those of low incomes, were found to be highly unsanitary, so much so that we would expect to find amid them a larger number, and more serious defects than reported. Defects cannot be corrected by nourishment alone, nor will exercise in the open air outside of school and home counteract the results of bad ventilation and bad light within school buildings and homes. Plenty of food will not prevent bad teeth and bad air from causing adenoids, enlarged tonsils, indigestion, and malnutrition.

The number of sleeping hours has been found adequate, but more evils will result from a vitiated atmosphere in sleeping rooms than from loss of sleep. Diseases of early childhood, while preparing the soil for physical defects, have been no more common among the cases studied than among children in general. Finally, two further and most significant facts stand forth: 1. Children receive inadequate medical care, only 60 per cent. of all examined using a private physician, and only 30 per cent. a dispensary. 2. Children receive inadequate dental care, only 27 per cent. of those examined employing at any time a dentist, though of the 1,400 cases 74.9 per cent. had defective teeth, a terrible menace to the health of the growing child.

These unhygienic conditions at home, bad as they are, are being remedied slowly. Many a crowded tenement can be made cheerful with light and air. The burden (it is a light one, surely) of the work rests upon the shoulders of the practising physicians. They touch more closely the lives of the people than do any others; and the Boards of Health and Education cannot eradicate physical defects until conditions at home are on a more sanitary level than they are to-day.

Conditions at school, that cause or aggravate physical defects, are being remedied, new schools being well lighted and well ventilated. It is a pity that each school cannot have an adjoining park as a playground, but at least the dark, foul-smelling, cellar playground of former days is disappearing. Much still can be done, however, not only in building construction, but also in correcting mistakes in school curriculum, number and length of school days, home study, and text books.

The sessions are too long for the growing children. No matter how good the ventilation, a room filled with many lungs soon has a vitiated atmosphere. Smaller classes, shorter sessions, more physical exercise and recreation during school hours, better books and less home study, a curriculum adapted to physiological, not chronological, age, will diminish the need of glasses, tonsilotomies and adenectomies.

Two measures for the eradication of physical defects we have, preventive and curative, that knowledge and experience gradually will perfect. To prevent physical defects we must eliminate all those unhygienic conditions at home, in the street, and in the school, that tend to create or aggravate them. To do this intelligently and properly the cooperation of the public, physicians and laymen, with the authorities of the Departments of Health and Education, is absolutely essential. The public must be educated by public lectures, by pamphlets, by advice of family physicians, by visits of municipal and private workers to make their homes sweet and clean, to cultivate the proper habits of health, to clothe, feed, and give medical attention properly to their children. The public must be educated to demand hygienic and sanitary schools, clean streets, clean milk, clean living quarters, in fact, to demand the correction of all conditions unsanitary and evil.

Strange as it may appear, we physicians need education, too. We are at a crucial point, and in this struggle must keep ourselves in the front ranks or we will lose our prestige with the people. There is far too much disinterestedness, and even antag-

onism, among physicians to this movement for new school hygiene, particularly where it relates to the examinations being conducted in the schools by the Board of Health. Parents and pupils are giving their cooperation more earnestly and more cheerfully than are the physicians. And this is due to the inexorable and selfish struggle for the almighty dollar. When a child is brought to us with a card from the Department of Health, calling our attention to a defect we ourselves may be unable to remedy, too many of us are prone to censure the Department for imposing upon our valuable time. This spirit must be banished from among us. We cannot better the physical condition of the American race unless everyone of us considers himself directly interested and responsible.

However, these methods are largely preventive, and physical defects are among us now in large numbers, and must be eradicated quickly, adequately, and in a cheap and practical manner. The first step must be a thorough physical examination and periodical reexamination of all school children. In this city the Department of Health has undertaken the work of its own initiative, and its success, while highly commendable, has been limited by its inadequate means and by a lack of concentrated organization.

Last term the Department of Health made 92,000 examinations, in which 48,778 defectives were found. There were 46,089 reexaminations, and among these 10,434 had received treatment. There were registered in the schools last term 695,614. In boroughs outside of Manhattan the examinations amount to a negligible quantity. Something must be done, and at once, to make this investigation more full and efficient.

This work is not only medical, in so far as the direct examination is concerned, but also educational, in so far as it teaches parents and pupils the need of physical well-being. The preliminary examinations are made in school buildings, and often, as in preliminary examinations for defective eyes, by the teachers, and it seems reasonable to think that under these circumstances, and because the work is one of investigation and education, rather than one of treatment, it is a function of the Department of Education. At present there is a tendency to a conflict of authority. However, the labor has been begun by the Health Department, and it may be hardly fair or advisable to change horses in the middle of the stream.

After the physical examination is completed, proper notification to parents should be made of those children needing medical care, and follow up notices and visits by those in authority, to inform or persuade parents to give this care, and, in recalcitrant cases, to force this attention under penalty of the law. When parents are unable to pay for medical attention, then private or public philanthropy or the State must assume the responsibility. Dispensaries and hospitals in New York City are equipped sufficiently to care for the needy poor, especially if from their doors are kept those who are able but unwilling to pay for medical and dental care. Until this is done, needy, defective children cannot be cared for properly in hospitals and dispensaries. Financial investigations are carried on, as a rule, spasmodically and ineffectually, and a change to stricter measures will not be initiated by hospital authorities, for they are more interested in increasing the cases treated and operations performed—these large numbers look well in print—than in caring properly for these children. The initiative must come from the city or State authorities.

Each physically defective child should be indexed, the statement containing a record of diagnosis, treatment and result, and kept on file for easy reference. Until a census of the physically defective children has been made, showing the adequacy or inadequacy of present methods of eradicating these defects, free meals, free eyeglasses, free operations and the municipalizing of the medical man are hasty and uncertain remedies.

Among the many defects of school children reported, defective eyes and hypertrophic tonsils and adenoids are of first importance. In many hospitals adenoids and tonsils are removed without general anesthesia, a cruel and inhuman procedure that should be stopped at once. Such an operation without an anesthetic produces a shock so profound upon the nervous system that its effects are more harmful, I believe, than the disease itself. While the final examination of defective eyes should be made under atropin and by an oculist, preliminary examinations can be made in the classrooms by the teachers. Snellen charts are cheap, and the method of their use easily learned. If this examination is made by the teachers the attention of the school physicians can be turned more fully to the detection of other defects. It must be remembered, however, that defective eyes may have perfect vision, a fact at present little appreciated by teachers, and indeed by physicians. The Snellen test will detect defective vision. Observation and attention to symptoms, such as headaches, backwardness in study, various nervous derangements, and congested and inflamed eyelids, are necessary on the part of the teachers to detect defective eyes that may have normal vision. I think, therefore, that lectures and conferences for the teachers might be given with great benefit upon the subject of the detection of physical defects, particularly of the eyes.

In hospitals and dispensaries equipped for such work special hours might be assigned for the treatment of physical defects, and a moderate fee might be paid to the young members of the clinical staffs to carry on this work. In that event competent men will be obtained, and school clinics, as has been proposed to be established, would be an unwarranted burden on the taxpayers.

A sub-department of hygiene in the Department of Health or Education might be established, not only in this and other cities, but in every rural district, under the sole authority of an associate superintendent, who shall be physician, and have full charge not only of the discovery and correction of physical defects, but of all school matters pertaining to the welfare of school children, embodying questions of properly-constructed buildings, of playgrounds, of books, curriculum, home study, and physical training. Under such a régime there will be no division of authority, the single aim being the physical welfare of the school children. Special appropriations should be made by the Board of Estimate for its furtherance, and this appropriation should be used for no other purpose. The department should not be, as the Board of Health now is, forced to live from hand to mouth, borrowing in advance to pay for work done in the past. To earn the confidence of the people, to do its work efficiently, this new department should show clearly what the needs of these defective children are, and should place squarely upon the fiscal authorities the responsibility for success or failure in this labor of "New School Hygiene."

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A PRELIMINARY NOTE ON THE DISINFECTION OF BODY CAVITIES BY INJECTION OF SUSPENSIONS OF LIVING NONPATHOGENIC BACTERIA.

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My purpose in this paper is to call attention in general to the use of living nonpathogenic bacteria as a means of combating infections. In particular I wish to suggest the use of suspensions of living lactic acid bacteria as a spray for the nose and throat, as an injection for the colon per rectum, and as an injection for cavities where putrefactive processes and other processes which may be inhibited by these bacteria are in progress.

The several methods of immunization which are now being practised are theoretically based upon natural processes.

The administration of smallpox vaccine is based upon the fact that an infection fatal to one species of animal may be attenuated in another, and in its attenuated form may be used to protect the more susceptible species.

The several antitoxins are obtained by the overproduction of chemical substances naturally released into the circulation by the reaction of normal tissues against toxins. The surplus antitoxin, artificially produced in one species, may be injected in another for the latter's protection.

The opsonic vaccines consist of suspensions of dead bacteria. Their injection into a healthy animal is claimed to cause a reaction which produces chemical substances favorable to increased phagocytosis in a focus of infection in the animal injected.

In any proper comprehension of the term "immunity" we are bound to consider all of the means, both natural and acquired, which contribute to the defense of an organism against attacks of pathogenic bacteria.

In the methods of natural and induced immunity enumerated above, the immunity depends upon certain changes which occur in the body tissues and body juices themselves. These may be spoken of as internal defences.

I wish now to present the claims of certain external defences of the body for recognition as playing an important part in the immunity of the individual from infection. Certain nonpathogenic bacteria, because of the function they naturally perform in defending man and other animals against infection, deserve, I believe, a consideration which they have not yet received.

That antagonisms exist between various species of pathogenic and nonpathogenic bacteria has for some time been recognized by bacteriologists. Such antagonisms are in line with those which exist all through biology between different living species of both plants and animals. The "survival of the fittest" is the natural result of competition between species dwelling in the same locality.

The importation of the English sparrow has resulted in driving away most of the song birds from our city parks. The boll-weevil, an insect which causes much destruction of the cotton crop in the South, is, I understand, now being fought by another insect, harmless to cotton, which is administered to the fields, under the direction of the U. S. Department of Agriculture.

When the bacteria of typhoid fever are placed in ordinary garden earth they disappear after a few hours and cannot be recovered by bacteriological methods. But if the garden earth be first sterilized by heat and then inoculated with typhoid bacilli, they may be found alive even after several weeks. Extensive experiments of this character made by a number of observers have brought them to the conclusion that typhoid bacilli are destroyed in a short time by the living bacteria of the soil.

The souring of milk delays the putrefaction of milk because lactic acid bacteria inhibit the growth of putrefactive bacteria.

But, while the existence of various antagonisms is apparent, little attempt has been made to make use of this fact in preventive medicine. That such use is possible is not a fancy, but is strongly suggested by Nature herself. The protection afforded by nonpathogenic bacteria against pathogenic forms is a thing which is already naturally established in all men and animals. Herter has drawn attention to the uniformity of the species of bacteria normally inhabiting the intestines of man. Extensive studies carried on by him and by other observers show the colon bacillus to be constantly found in the intestine of man and of almost all warm-blooded animals. It is impossible to contemplate the universal existence of such a phenomenon without being driven to the conclusion that its existence signifies the performance of some important natural function.

Persons in robust health are comparatively free from putrefactions and other irritations of the digestive tract. Examinations of intestinal fluid show that the tract of such persons is abundantly inhabited by nonpathogenic bacteria, chiefly colon bacilli, while in the intestine of those who suffer from putrefactions these bacteria are greatly reduced. Herter and other observers are convinced that the normal inhabitants of the intestinal tract afford a certain degree of protection against strange species of bacteria.

What is true of the intestine may also be true of other body cavities. The mouth, nose, ear, vagina, and urethra are all inhabited by bacteria. Some of the bacteria represented may be pathogenic, but the vast majority are probably nonpathogenic. The normal nonpathogenic inhabitants of all these cavities may be a constant protection against infection. It is not improbable that in some of the infections which we term "mixed infections" the advent of additional species of bacteria is really a blessing in disguise. In abscesses and sinuses it may be that the mixing of the infection actually inhibits the infectious process.

Such considerations as these have led me to form the opinion that the judicious administration of properly selected nonpathogenic bacteria as a means of opposing infections has a basis in reason.

If the immunity of any body cavity is largely dependent upon the integrity of its garrison of nonpathogenic bacteria, the question arises whether this integrity cannot be maintained and the personnel of the garrison even improved by trained reinforcements administered by the bacteriologist.

Metchnikoff and his followers have already made a beginning. They recommend the drinking of milk soured by selected lactic acid bacteria for the purpose of inoculating the intestines with these bacteria. Metchnikoff's statement that the shortness of human life is chiefly due to the absorption of toxins of putrefactions from the large intestine, and that longevity can be brought about by the prevention of these intestinal putrefactions, is perhaps one of the landmarks of recent medical literature. While there has not been any great enthusiasm

among medical men to accept his philosophy, still all bacteriologists and physicians who have investigated this subject are satisfied that lactic acid bacteria do exert a marked inhibitory effect upon the bacteria that cause putrefactions.

The medical literature of Europe and particularly of France during the last few years teems with articles concerning sour milk preparations and their favorable effects, not only in curing the intestinal putrefactions of adults, but also the acute summer diarrheas and dysenteries of infants and children. The growth of interest in sour milk as a therapeutic agent has been very rapid in the United States during the past two years. Sour milk beverages have multiplied on the market, and many physicians are prescribing them in their practice. It is noteworthy that thus far the administration of lactic acid bacteria destined to reach the colon has been by mouth and in coagulated milk as a vehicle.

Most of the lactic acid bacteria refuse to grow well in any other medium than milk. At the Lederle Laboratory studies of sour milk beverages and of lactic acid bacteria have been conducted under my direction for the past year. In connection with these investigations attempts have been made to obtain a medium other than milk which is favorable to the growth of these bacteria. One of my associates, Dr. Garside, has found such a medium in lactose broth. By its use it is possible to obtain an abundant growth of lactic acid bacteria in a clear fluid that is free from other solid material. Such suspensions as these possess special advantages for the purposes I have to suggest.

My first suggestion relates to the colon. Here the value of administration of lactic acid bacteria has already been demonstrated. Many persons rebel against the drinking of sour milk preparations. It is a long journey from the mouth to the colon, and many of the lactic acid bacteria administered in this manner undoubtedly fall by the wayside.

The direct route to the colon is through the rectum. The injection per rectum of a suspension of lactic acid bacteria in a fluid medium which is clear and free from other solid matter will bring these bacteria into direct contact with the walls of the colon and its contents without interference. I believe that after the lower bowel has been cleared by the usual saline enema, such injections, made high up and repeatedly, will be found to possess important advantages over the administration of sour milk beverages. Such injections in infant diarrhea seem to me likely to be particularly advantageous. They may also prove to be of service in chronic constipation, typhoid fever, acute and chronic diarrhea, and other intestinal inflammations. By this means lactic acid bacteria may be induced to take up their residence in the colon without laying any extra burden upon the digestive organs.

As a spray for the nose and throat and the adjacent cavities, I believe that suspensions of lactic acid bacteria are worthy of serious study. Mixed infections and putrefactions are common in these regions. If lactic acid bacteria can antagonize putrefactive bacteria in the intestine, it is fair to infer that they may do likewise in other parts of the mucous membrane.

The spraying of the mucous membrane of the nose or of any infected cavity with antiseptics and germicidal solutions is at best only a superficial method of disinfection. The structure of the lining tissue of cavities is usually one which includes numerous crevices and follicles, many extending deeply beneath the surface, wherein colonies of bacteria can find shelter. The most that can be expected of a chemical disinfectant is to destroy bacteria that may be lying on the surface. A biological disinfectant, on the other hand, such as the one suggested, may fight infection with its own weapons, for where one germ can penetrate it is conceivable that another germ can follow. If an infected nasal cavity can be sprayed and implanted with a suspension of lactic acid or other nonpathogenic bacteria which are capable of antagonizing the germs causing the inflammation, a novel and promising method of treatment is afforded.

In some of the body cavities—the middle-ear, the vagina, and the urethra, and in sinuses and abscesses—it may be that the natural antagonisms which exist between nonpathogenic bacteria and pathogenic forms can be of therapeutic use. The suspensions of lactic acid bacteria may prove to be of service in these cavities, especially where putrefactive processes are causing the irritation.

It would be unwarranted for me to make any positive claims at the present time as to the value of this method of combating infection. A large amount of experimental work in the laboratory is necessary and also much clinical work before any positive and precise statement can be made as to the preparation of these suspensions or regarding the results of their administration. The study of the effect of these suspensions has already begun. A number of cases of nose and throat inflammation have been treated with apparently favorable results. One case of chronic diarrhea has been treated with apparent cure. Enough has been done to convince me that these injections deserve a fair trial and that the field is a promising one. With the cooperation of some of the physicians of this city, studies will be continued during the summer in my department at the Lederle Laboratories, and the facts as secured will be published in a subsequent article.

Acute Syphilitic Aortitis.—An interesting case was recently shown by Fein to the Medical Society of Vienna, the patient being a young man of 20 years who had contracted syphilis six months before coming under observation and complained of cardiac trouble and loss of voice. Examination revealed stenosis and insufficiency of the mitral valve and a complete paralysis of the left vocal cord. The *x*-rays showed the presence of a dilatation of the heart and a pulsating broad vessel corresponding with the aorta but no other signs of aneurysm. There were no means of deciding whether it was the mitral disease or the dilatation of the aorta which was responsible for the loss of voice. Under a course of mercury the patient's vocal cord regained its normal motility, his voice returned, and his cardiac symptoms disappeared almost completely. In making the differential diagnosis the points relied on were that dilatation of the heart has been proved to produce compression of the recurrent nerve, and that the patient was suffering from either syphilitic neuritis or acute syphilitic inflammation of the aorta, with secondary dilatation and pressure on the nerve. The *x*-rays showed that simultaneously with the improvement of the voice the dilatation of the aorta diminished until no pressure at all was exerted on the recurrent nerve. If there had been no loss of voice the aneurysmal condition of the aorta might have escaped detection and in the course of a few months would have become permanent. The author was therefore induced to classify the case as one of syphilitic disease of the aorta. He was of opinion that in all cases of syphilis showing cardiac symptoms special attention should be given to those conditions at an early date after infection, for it was possible in this stage to avert the threatened danger by energetic antisyphilitic treatment.—*The Lancet.*

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AN EFFORT TO RAISE THERAPEUTICS TO A TRUE SCIENCE.

EMPIRICISM is to-day, despite the very real advances made in our knowledge of the nature and causes of disease, almost the sole basis of therapeutics. If we except a few drugs, not by any means all of the so-called specifics, we still give remedies because experience has taught us that they are "good" for certain diseases or symptoms. In the case of some we have learned, or think we have learned, why they are curative, but it is in the case of very few only that we are able to explain the how as well as the why. Practitioners in general accept the teaching of experience, or empiricism, and base their therapeutic endeavors upon that, preferring to cure their patients even if they are unable to explain how they do so; but some refuse to be guided by faith—"the substance of things hoped for, the evidence of things not seen;" they regard it as unscientific to use a remedy the action of which they do not know or do not think they know; and forgetting that "all true science begins with empiricism," they remember only the conclusion of Huxley's phrase that "all true science is such exactly in so far as it strives to pass out of the empirical stage." This is the foundation of therapeutic nihilism, and this conceit of the ultrascientific mind will no doubt continue, though perhaps in lessening degree, to exert its baleful influence upon medicine until the science of therapeutics shall have passed out of the empirical stage. That it is doing so now we have reason to hope.

There is one fact upon which both schools of medicine, the pessimists and the optimists, are agreed, and this is what our fathers called the *vis medicatrix naturæ*, nature's inherent power to overcome disease. We are learning more of that to-day, and the belief is growing that it is through the study of this protective and curative force residing in the cells and fluids of the body that we shall find an explanation of the action of drugs and other therapeutic agents, and so, by removing the stigma of empiricism, elevate therapeutics to the rank of a true science. The use of serums, of antitoxins derived from animals, is only a makeshift, and the treatment of disease will never be truly scientific and certain until we know definitely nature's method and learn how to assist the organism in its own way of combating disease. The opsonic method, the introduction of dead bacteria which stimulate the organism to the production of more protective bodies without increasing the number of noxious agents to be destroyed, is a long step in the right direction. But there are other diseases than those of microparasitic origin to be overcome, and we have yet to explain the action of drugs and of other therapeutic agents. That drugs do not, in many cases at least, act directly upon the tissues or organs to modify their action or restore their function is evident, yet that they do act in some way is equally evident. That they act by affecting the nervous centers in all cases is also an untenable assumption. We have learned that nature regulates the functions of certain organs by means of specific substances, hormones, secreted in one part of the body and carried by the blood to another part, conveying the message that it is time now for that part to act and to do its appointed share in the work of the economy. It is probable that something analogous to this occurs in disease and that drugs are hormones, or stimulants to the production of hormones, conveying the information that something is wrong in a certain part of the economy and calling upon the curative powers of the organism to exert their specific action in that direction.

This is the theory advanced and developed by Sajous in his work on "The Internal Secretions." Through a most ingenious process of reasoning this investigator has come to the conclusion that the pituitary body is the regulating organ of the economy. Its anterior lobe, he holds, contains a sensitive membrane which detects the presence of any foreign or toxic substance circulating in the blood and then notifies the posterior lobe, which is the nerve center of the adrenal bodies and the thyroid and parathyroid glands. Drugs exert a specific action upon this center, each influencing it in its own way. We cannot here develop this interesting theory or show how its author applies it to explain the action of tonics, alteratives, analgesics, hypnotics, etc. This is well done in Sajous' work above mentioned, and is summarized in a paper read at the recent meeting of the American Therapeutic Society and published in the May issue of the *Monthly Cyclopædia of Practical Medicine*. Notwithstanding the vast array of facts and the explanation of them in accordance with the theory of the interrelations of the pituitary bodies, adrenals, and thyroid, which Sajous presents in the two volumes of his work, much remains to be explained of the way in which these organs exert their selective action and render effective the specific action of the individual drugs. The theory is, however, a seductive one, and gives promise of raising therapeutics more nearly to the rank of a true science than it has yet attained through the empirical "provings" of experimenters.

HOSPITAL SHIPS.

THERE has been no naval war of sufficient magnitude since the evolution of the hospital ship really to test thoroughly the value of such an aid to the sufferers in marine actions under modern conditions. Hospital ships were certainly used in the Spanish-American, in the Boer, and in the Russo-Japanese wars, but it can hardly be said that any true conclusion as to their utility was gathered from the results of these wars. That there is a future for vessels of this description cannot be doubted,

but many questions remain to be answered before any decided opinions can be given. Whether, for instance, specially constructed ships should be used or adapted commerce vessels, are points which as yet have not been cleared up. Probably there is room for both, and this seems to be the view taken by the majority of British authorities. In fact, during war time it is likely that most dependence will have to be placed on adapted commerce vessels, but for permanent hospital use the provision of a specially constructed ship is indicated.

Fleet-Surgeon E. B. Pickthorn, R.N., recently read a paper in London dealing with the question, in which he said the following ships were needed: (1) A stationary hospital ship would be useful in providing a base hospital until other accommodation was provided, the advantages gained being a certain dependable water-supply and easy disposal of sewage. (2) A ship for the transport of sick and wounded, such as had already undergone treatment in base hospitals or stationary hospital ships. (3) An ambulance ship that would attend upon fleets in action for the conveyance of wounded to home ports. (4) A ship to accompany a fleet in which medical and surgical treatment could be undertaken for as long a period as necessary. He also suggested the advisability of entering into an arrangement with a shipping line dealing with emigrant service with a view to constructing emigrant ships in the first place for subsequent conversion into ships for the transport of sick and wounded, or ambulance ships. The other classes of hospital ships, he thought, should be specially constructed.

The objection to specially constructed hospital ships is their expense, and it is probable that the British navy will rely for the most part on adapted passenger ships. This country, however, is in a somewhat different position. She has not a large number of suitable passenger ships flying her flag, which she could charter in time of need. The number of such ships, indeed, is quite small, therefore it would appear as if dependence must be almost wholly placed upon specially built vessels. Ships of this kind cannot be built in a day, consequently they should be built in time of peace. It may be argued that good hospital ships were soon forthcoming during the Spanish-American war, and this is to some extent true. On the other hand, the merits of these vessels were scarcely tested at all, and it must be borne in mind that if we are so unfortunate at any future time as to be involved in another naval war we shall undoubtedly have to meet a more formidable enemy than in the former war. Even granting that our naval authorities can command the services of some fairly effective adapted vessels, it still would be a wise step to have two or three specially constructed vessels. To be fully prepared for war is to be on the road to victory, and a navy can hardly be said to be fully prepared for war which has not made provision for the care of its sick and wounded. Besides, the dictates of humanity call for this provision.

SALOMON'S TEST IN GASTRIC DISEASES.

In 1903 Salomon published a test by means of which he claimed it was possible to make an early diagnosis of cancer of the stomach. After a day of non-albuminous fluid diet the patient's stomach is washed and emptied at night; the following morning the empty stomach is again washed with 400 c.c. of physiological salt solution and the return fluid is examined quantitatively for albumin and nitrogen. Salomen found that in benign cases the nitrogen never exceeded sixteen milligrams per 100 c.c. of fluid and that Esbach's test showed no, or only slight cloudiness. In cancer cases on the other hand he always found from one-sixteenth to one-half a gram per mil of albumin while the nitrogen ranged from ten to seventy milligrams per hundred c.c. of fluid.

Since Salomon's publication the test has been tried in many cases and recently J. Witte published reports of twenty-seven additional cases, together with over two hundred collected from the literature, in the *Zeitschrift für klinische Medizin*, Vol. 65, Nos. 1 and 2. His findings were similar to those of other observers and while they substantiated Salomon in general, they proved that the test was not infallible, as benign cases at times showed high figures and cancer cases at times low ones. In cases of healed ulcers the nitrogen figures were always low and Esbach's solution showed only a trace of albumin at the most. Open ulcers never showed more than twenty-one milligrams of nitrogen per hundred c.c. of fluid, the highest amount of albumin found having been one-eighth of a gram per mil, even when a trace of blood was present microscopically. Blood in appreciable amount makes the test useless. Cases of chronic gastritis, without or with very much mucus, never presented more than a slight cloudiness with Esbach, the nitrogen figure always remaining below 13.3. In differentiating cases of gastrosuccorrhea and myxorrhea from carcinoma Salomon's test is liable to lead to errors of diagnosis. In these cases the amount of nitrogen was at times found to be as much as twenty-eight milligrams per hundred c.c. of fluid, while the albumin reached one-eighth of a gram per mil. In the great majority of carcinoma cases the clinical diagnosis was substantiated by Salomon's test, though in one case of nonulcerating carcinoma the nitrogen value was as low as nine and eight-tenths. At times high values of nitrogen were accompanied by only a trace of albumin and vice versa, high values of albumin then being of greater significance than high values of nitrogen. Witte believes that nitrogen amounts of over thirty milligrams per hundred c.c. of fluid together with measurable quantities of albumin positively point to malignant disease. Several cases in which a clinical diagnosis was doubtful showed high figures of nitrogen and albumin, operation having later revealed a carcinoma.

From Witte's observations we can but conclude that the test, though not infallible, is of practical value and should be made in all gastric conditions of doubtful diagnosis.

Weak Labor Pains.

The normal process of child-birth so frequently assumes a pathological aspect in the case of many women illy fitted to bear the physical burdens of maternity that a modern physician usually shares the anxiety of the patient when the end of pregnancy approaches. "Weak pains" is the untoward phenom-

enon most often observed in child-birth, and to the consideration of its causes, varieties, and treatment, Dr. W. A. Freund devotes an article in the *Deutsche medizinische Wochenschrift* of May 14, 1908. He defines as absolute weak pains those which are not sufficient to propel a normally developed child through a normal pelvis; relative weakness of the pains is made evident, on the other hand, by their inability to overcome any increased resistance to the birth of the child. Both varieties are frequently met with in the so-called infantile type of women, whose physical development is below par in every respect indeed, but is especially insufficient in the organs of reproduction. In such cases prophylactic treatment is of more value than interference in the presence of a fully developed case of uterine inertia: rational hygiene in adolescence, careful avoidance of all disturbing factors in pregnancy, encouragement of the prospective mother are the means of preventing the appearance of exhaustion and of inability to complete the act of birth. Manual or instrumental interference, too, must not be long delayed in cases of necessity, the indication for their employment being sought not in the mere duration of the labor but in the presence of any possible danger for the mother or the child if things were allowed to take their own course. Other means of treatment consist of the administration of strong coffee, of hot bouillon, and the direct stimulation of the uterus by massage and even by the use of electricity. Of drugs, the use of ergot is indicated not exactly in the presence of weak pains but in the failure of the uterus to contract firmly in the third stage of labor when the placenta has been expelled and the most serious danger, that of hemorrhage, becomes possible. Recently the extract of the adrenal gland has been used for the same indication and is always to be thought of when very prompt action upon the uterine muscle is desired. In very rare cases the only procedure offering hope in the presence of a severe hemorrhage which cannot be stopped by the usual packing of the uterine fundus lies in the immediate extirpation of the organ.

The Value of X-ray Pictures in the Diagnosis of Tuberculosis.

The older methods of early diagnosing pulmonary tuberculosis by means of percussion and of auscultation have received assistance in recent years from carefully taken *x*-ray pictures of the lung apices. Elsewhere in the present issue of the Medical Record we abstract an article of Albers-Schöneberg recounting the more frequent findings in such cases and warning against the many sources of error. Writing in the *Deutsche medizinische Wochenschrift* of May 14, 1908, Dr. Schlayer gives the clinical results of using *x*-ray pictures in diagnosis. Of 350 cases, which were observed for a sufficient period of time, 280 or 80 per cent. were suspected of suffering from incipient tuberculosis in the early examinations; 300 of them, or 85 per cent. showed evident changes in the apices in the *x*-ray pictures. Of these, the existence of active tuberculosis was proved by means of various clinical methods and the injection of tuberculin in about 58 per cent. In 28 per cent. long observation of the patient justified the conclusion that the *x*-ray findings were due to the existence of healed or, at least, inactive lesions. In 6 per cent. of the 350 cases examined, though the *x*-ray findings were negative, tuberculous infection was proved by prolonged clinical observation. These figures show the value of the new procedures in strengthening the diagnoses made by the older clinical methods. On the other hand, they serve to emphasize the truth that most of the recent direct methods of diagnosis are not to be looked upon as more final and infallible in most cases than the older methods in which inductive and indirect reasoning had to be more often employed. The newer procedures have certainly added very much to our diagnostic possibilities; but the results of them are only single, more or less valuable signs pointing to the correct interpretation of the patient's condition, but not naming directly and absolutely the disease from which he is suffering.

Breast Feeding and Development.

It seems obvious that infants who have been breast-fed should enjoy better health than artificially fed children. It is not as obvious however that the development of the child fed artificially should be more backward than that of the infant nursed at the breast, even in regard to such a function as walking, which is usually learned after the nursing life is over. That such is the fact, however, is shown by the data published by Dr. Nagel in the *Münchener medizinische Wochenschrift* of May 19, 1908. His tables show that a great proportion of the children breast-fed not at all or only for a short time are backward in the development of the teeth, as well as in learning to walk. The greatest cause for the latter failure is found in the frequency of rickets among artificially fed children. The remedy for the evil the author finds in the propaganda of the value of nursing, the spread of correct ideas in reference to rational feeding of infants and to the general hygiene of childhood, and the support of all organizations that attempt to help the women of the poor in the difficult task of bringing up their children.

News of the Week.

Army Medical Department Examinations, 1908.—The Act of April 23, 1908, reorganizing the Medical Corps of the Army, gives an increase in that corps of six colonels, twelve lieutenant-colonels, forty-five majors, and sixty captains or first lieutenants, and establishes a Medical Reserve Corps as an adjunct to the Medical Corps. Under this recent act, the lieutenants of the Medical Corps are promoted to captain after three years' service instead of five, and the increase in the higher grades insures promotion at a reasonable rate all through an officer's military career. Furthermore, applicants who are found qualified in the preliminary examination are appointed first lieutenants of the Medical Reserve Corps and ordered to the Army Medical School in Washington, D. C., for eight months' instruction.

The Medical Corps. Preliminary examination for appointment in the Medical Corps will be held on August 3, 1908, and formal applications should be in possession of the War Department prior to July 1. The applicant must be a citizen of the United States, between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and must have had at least one year's hospital training or its equivalent in practice. The examination will be held concurrently throughout the country at points

where boards can conveniently be assembled, and due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. The examination in subjects of general preliminary education may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools, or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School. The large number of vacancies created in the Medical Corps by recent legislation makes it certain that all successful candidates will be recommended for a commission for several years to come.

The Medical Reserve Corps. It is desired to obtain and maintain a list of qualified medical men all over the country who are willing to serve as medical officers in time of emergency, and to such men the President is authorized to issue commissions as First Lieutenants, Medical Reserve Corps. It is recognized that it will be necessary to place only a limited number of these officers on the active list in time of peace, and it is hoped that young medical men throughout the country and medical officers of the militia of the various States may be sufficiently interested to secure positions on the Medical Reserve Corps list. An applicant must be between twenty-two and forty-five years of age, a citizen of the United States, a graduate of a reputable medical school legally authorized to confer the degree of doctor of medicine, and must have qualified to practice medicine in the State in which he resides. Examinations will be held in the near future and will embrace the practical medical subjects. Full information concerning the Medical Corps and the Medical Reserve Corps may be procured upon application to the Surgeon General, U. S. Army, Washington, D. C.

Red Cross in Japan.—The sixteenth anniversary of the formation of the Japanese Red Cross was celebrated in Tokio, on June 1, by a meeting held in Hibiya Park in the presence of the Empress. The society has a membership of 1,414,225, and the value of its property exceeds seven million dollars. On its medical staff are 212 doctors, 143 pharmacists, and 668 male and 2,701 female nurses. Since the war two large hospital ships have been added to those already in use.

Babies to be Cared for.—Systematic work to insure that the infants of this city will be properly cared for during the coming summer has already been begun. In response to a request from the Health Department many societies and institutions will cooperate in the work. Milk depots are to be established, instructions to mothers will be issued, and nurses will be employed to visit at the homes. The plans for the campaign are being laid by the Conference for Hot Weather Care of Babies, of which Dr. William H. Allen, secretary of the Bureau of Municipal Research, is chairman, and Dr. John J. Cronin, medical inspector for the Board of Health, is secretary. An executive committee of seven has been appointed. Cards of instruction and information as to how to feed, clothe, bathe, and provide fresh air for the baby, will be sent out by the thousands. They will state the whereabouts of milk depots, recreation piers, and playgrounds and hospitals, and furnish other useful information. The organization of the work under a central board will permit of the division of the city into districts, with a special corps of physicians and nurses in each, and will prevent much conflict and duplication of efforts. Among the institutions represented in the Conference are the Children's Aid Society, the Trinity Dispensary, the Seaside Hospital, Bellevue Hospital, Gouverneur Hospital, Bureau of Municipal Research, St. John's Guild, the Hackley Diet Kitchen, the Presbyterian Hospital, the Children's Seaside Hospital, Roosevelt Hospital, the Junior Sea Breeze, and the Babies' Hospital.

Low Death Rate.—The Board of Health of the City of New York reports that the death rate for the week ending May 30 was the lowest for any week since 1895. The number of deaths was 1,335. The rate was 15.75 per thousand, against 16.36 for the same week last year. There were twelve deaths from typhoid fever during the week, against five for the same week last year, and 149 deaths from heart disease, against ninety-two for the same week last year. For the week ending June 6 the rate was still lower, the lowest indeed in the sanitary history of the city, being only 14.41 per thousand. The death rate for the corresponding week last year was 17.46.

Plague.—Owing to the prevalence of bubonic plague in Venezuela, the Cuban ports, with the exception of Mariel where there is a quarantine station, have been closed to vessels from that country. In Ecuador the plague seems to be well under control, though between May 8 and June 3, forty-two new cases developed. Five fatal cases have been reported from Trinidad, and every precaution is being taken to prevent its spread. President Castro has declared La Guayra free from plague and open to navigation, yet in spite of his assertion the plague continues to claim new victims daily.

Antivaccination.—The antivaccinationists of Omaha, Nebraska, have scored a victory for smallpox in the repeal by the city council of the regulation requiring compulsory vaccination in the public schools. It is stated that the enforcement of this regulation has kept out of school, during the past four months, one thousand children who will now be permitted to return. From an educational standpoint the Omaha schools have for some time been considered to have a very high standing.

Woman Ambulance Surgeon.—Dr. Mary Merrit Crawford, a graduate of Cornell Medical College, and an interne at the Williamsburg Hospital, is now on the ambulance service of that institution. Dr. Crawford is said to be the first woman to serve in this capacity in Brooklyn, though Manhattan has long since grown familiar with the sight of a medical woman on the ambulance.

Early Use of Tuberculin by the Nonfebrile Method.—The signature to the letter on this subject, in the MEDICAL RECORD of June 6, 1908, p. 949, was accidentally omitted. The letter was from Dr. F. Frémont-Smith of Washington, D. C.

Marriage Licenses.—During the five months since the first of the year, when the new marriage licence law went into effect in New York City, a total of 17,032 licenses were issued in the entire city, an average of more than 112 licenses a day. Of these, 12,715 were issued in the Borough of Manhattan.

X-ray Injury to the Eyes.—Dr. F. P. Baetjer of Baltimore was compelled to undergo an operation for the removal of one of his eyes, injured in *x*-ray work, a short time since. Dr. Baetjer began his studies on the physiological effect of the rays ten or twelve years ago, shortly after they were discovered by Prof. Röentgen. Trouble with the eyes in connection with the *x-rays* seems to be

unusual, although it is known that the eye is sensitive to the rays.

A Research Fellowship.—The graduating class of the Department of Medicine of the George Washington University, numbering 45, who received the degree of Doctor of Medicine at the commencement exercises, June 3, 1908, has announced to the university authorities the establishment by the class of a research fellowship. This fellowship will be known as the "Class of '08 Fellowship," and will have an annual fund of not less than $300.

National Association for the Study and Prevention of Tuberculosis.—The fourth annual meeting of this association was held at the Auditorium Hotel, Chicago, June 5 and 6. The scientific work was divided into sections. In the afternoon of June 5, the Association listened to a symposium on State Sanatoria, and on Saturday afternoon to a series of papers on the prevalence and prevention of tuberculosis in charitable and correctional institutions.

The Rockefeller Institute for Medical Research.—The following appointments have been made to the staff of the Rockefeller Institute for Medical Research: P. A. Lewis, Assistant in Pathology; A. I. Kendall, Assistant in Bacteriology; A. R. Dochez, Fellow in Pathology; A. O. Shaklee, Fellow in Physiology and Pharmacology. The following promotions have been made: John Auer, Associate in Physiology and Pharmacology; Don R. Joseph, Assistant in Physiology and Pharmacology; Alexis Carrel, Associate in Surgery; J. W. Jobling, Associate in Pathology; Benjamin T. Terry, Assistant in Protozoology; Donald D. Van Slyke, Assistant in Biological Chemistry; Walter A. Jacobs, Assistant in Biological Chemistry; Bertha I. Barker, Fellow in Pathology; R. V. Lamar, Fellow in Pathology.

Gifts to Hospitals.—By the will of Mary Ann Astor Woodcock of Bedford, N. Y., the Methodist Episcopal Hospital of Brooklyn receives five thousand dollars to be used for the relief of widows and orphans of clergymen and of aged and infirm clergymen.

International Medical Congress.—The American delegation to the international medical congress to be held at Budapest next year has been appointed. The list is headed by Dr. Joseph D. Bryant of New York, and includes Dr. Herbert L. Burrell of Boston; Surgeon-General Robert M. O'Reilly, of the army; Surgeon-General Rixey, of the navy, and Surgeon-General Walter Wyman, of the Public Health and Marine Hospital service.

American Gastroenterological Association.—At the eleventh annual meeting of this Association, held at Chicago, Ill., June 1 and 2, 1908, the following officers were elected for the ensuing year: *President*, Dr. Julius Friedenwald of Baltimore; *First Vice-President*, Dr. David L. Edsall of Philadelphia; *Second Vice-President*, Dr. Wm. Gerry Morgan of Washington, D. C.; *Councilor*, Dr. John P. Sawyer of Cleveland.

American Gynecological Society.—At the annual meeting of this society, held in Philadelphia, May 26, 27, and 28, 1908, the following officers were elected: *President*, Dr. J. Riddle Goffe, New York; *First Vice-President*, Dr. Howard A. Kelly, Baltimore; *Second Vice-President*, Dr. Malcolm McLean, New York; *Treasurer*, Dr. J. Wesley Bovée, Washington; *Secretary*, Dr. LeRoy Broun, New York; *Members of the Council*: Dr. George T. Harrison, New York; Dr. J. Montgomery Baldy, Philadelphia.

American Medical Editors' Association.—At the annual meeting of this association in Chicago, May 30 and June 1, the following officers were elected: *President*, Dr. T. D. Crothers of Hartford, Conn.; *Vice-Presidents*, Drs. W. A. Young of Toronto, Canada, E. W. Taylor of Boston; *Secretary and Treasurer*, Dr. Joseph MacDonald, Jr., of New York; *Members of the Executie Committee*, Drs. J. J. Taylor of Philadelphia, W. C. Abbott of Chicago, and W. A. Jones of Minneapolis.

The Rhode Island Medical Society, at its annual meeting on May 26, elected the following officers: *President*, Dr. Frank B. Fuller, Pawtucket; *Vice-Presidents*, Drs. Eugene Kingman, Providence, and Augustus A. Mann, Central Falls; *Treasurer*, Dr. George S. Mathews, Providence; *Secretary*, Dr. Stephen A. Welch, Providence. The library committee reported that the library now numbered 22,000 volumes, and that from July 1, 1907, to May 12, 1908, there had been 1,173 visitors to the library.

The Connecticut State Medical Society, which held its one hundred and sixteenth annual meeting at New Haven during the last week in May, elected the following officers for the ensuing year: *President*, Dr. Selden B. Overlook, Pomfret; *Vice-presidents*, Drs. Irving L. Hamant, Norfolk, and W. L. Barber, Waterbury; *Secretary*, Dr. W. R. Steiner, Hartford; *Treasurer*, Dr. Joseph H. Townsend, New Haven.

The Middlesex East District (Mass.) Medical Society held its annual meeting on May 13. The following officers were elected: *President*, Dr. Charles Dutton, Wakefield; *Vice-President*, Dr. Philip Hammond, Winchester; *Secretary*, Dr. Frederick R. Sims, Melrose; *Treasurer*, Dr. Josiah P. Bixby, North Woburn; *Councillors*, Drs. Corydon W. Harlow, Nom. Councillor, Melrose; Roscoe D. Perley, Melrose; Daniel C. Dennett, Winchester; *Censors*, Drs. Daniel C. Dennett, Winchester; Charles F. McCarthy, Winchester; Ernest C. Fish, Melrose; George F. Dow, Reading; Ernest D. Richmond, Reading; *Auditor*, Dr. George W. Nickerson, Stoneham; *Commissioner of Trials*, Dr. Ernest S. Jack, Melrose.

Obituary Notes.—Dr. Horace George Miller of Providence, R. I., died suddenly at his summer home in Camden, Me., on May 29, at the age of 68 years. Dr. Miller was a graduate of Harvard Medical School in the class of 1865, and had made a special study of diseases of the eye and ear. He was president of the American Otological Society from 1900 to 1902, and also served for two years as president of the New England Ophthalmological Society.

Dr. A. J. Pettis of West Branch, Mich., died on May 21 at the Harper Hospital in Detroit following an operation. Dr. Pettis was 38 years of age, and was a graduate of the University of Michigan in 1903.

Dr. John Carroll Irish of Lowell, Mass., died on May 29, from an acute attack of indigestion, at the age of 64 years. Dr. Irish was graduated from the Bellevue Hospital Medical College in 1872, and in 1877 was appointed medical examiner for his district, an office which he held at the time of his death. He was a member of the surgical staffs of St. John's and the Lowell General hospitals, and of a number of medical societies.

Dr. E. A. Deane of Montague, Mass., the oldest member of the Franklin District Medical Society, died on May 31, aged 83 years. He was a graduate of the Berkshire Medical College in 1853.

Dr. George D. Emerson of South Berwick, Me., died at his home on May 23, aged 44 years.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described, with remarks on their appropriate treatment.

VI. Education of a Mentally Defective Child.

Rochester, N. Y., Oct. 30, 1904.

My Dear Doctor:

I am writing you to ask when it will be convenient for you to see the little girl, whom, you will recall, I sent to you for an opinion concerning her condition four years ago. Although she has made considerable progress in the right direction since you saw her, it is not so great as I had anticipated in view of the sanguine position that you then took in regard to her physical and mental development. I must say, however, that the parents have done very little to carry out the plan of treatment which you outlined. They realize that it is necessary to have something done for their child and are willing, I believe, to carry out any suggestions that you make. She is now seven years old and her physical peculiarities and her attributed feeble-mindedness are making her a marked individual among their intimates and friends.

From the time of her birth, which occurred when her mother was forty-two years old, the child has always been "nervous." The mother had been ill with some kidney trouble while she was carrying the child and this illness continued after the birth so that she was unable to nurse it. During the first year the baby is said not to have slept at night except for brief periods. It was restless and in almost continual motion. When she was a year old she could not crawl or even move from the reclining position. Placed upon her belly upon the floor she could move her arms and legs but the movements were incoordinated and jerky. She began to walk when twenty-six months old, not having previously crept, but capacity for secure locomotion came very slowly. She tripped and fell even when there was no apparent obstruction or obstacle in her way. When she was three years old, I had Dr. ——, of your city, see her because of this difficulty in walking and of the jerky movements, particularly of her head, face, and upper extremities. He made a diagnosis of muscular dystrophy and gave a bad prognosis. She was then taken to Baltimore to consult Dr. ——, who interpreted her condition as a form of cerebral infantile palsy and gave a gloomy prognosis. It was soon after that I sent her to see you. Although she could then walk alone it was impossible for her to go upstairs without holding the banister, and when lying on her back she could not help herself to arise. Her speech was unintelligible. Its striking feature being lack of articulation, evident inability to coordinate the movements of the tongue, lips, and breathing to produce articulation, and almost constant grimacing, twitching of the head, blinking the eyes, and contorting the upper part of the body.

At that time she was apparently a well developed child physically. She was tall for her age, the muscles of her arms and her legs were well developed, but her chest was flat and her shoulder blades jutted out from the back. The only striking feature of her appearance was due to her eyes. They were round and small like those of a Mongolian, the internal canthus being narrow and adherent.

She has not learned to talk save a peculiar gibberish which the family are able to understand but which is unintelligible to me. She walks more securely but she has so much choreic like movement of her hands that she is unable to do anything satisfactorily, such as feeding and dressing herself. When she attempts to talk she screws her eyes, her face becomes contorted, the shoulders shrug, the body wriggles, and then she emits this peculiar inarticulate speech. She has never learned to play either by herself or with other children. I have done everything I could for her in regard to her diet and general health and I think I may say she is in fairly good conditions in these respects. The operation for removal of the adenoids has not yet been performed, but I hope to be able to persuade the mother to have it done this autumn. My chief object in sending her to you now is to get specific instructions as to how to develop her mentally. She has many qualities of mind which are as well developed as the average child of her age. She is obedient, affectionate, and docile. She knows the difference between right and wrong and although she apparently forgets very readily what she has been told they have been able to train her to a certain kind of conformity to the ordinary occurrences of daily life, but practically no real start has been made with her education. I shall be glad to get detailed instruction from you what to do.

Believe me,

Yours very sincerely, ——.

New York, Nov. 3, 1904.

Dear Doctor ——:

It is convenient for me to see your patient a week from to-day. I shall be glad to see her, even though she does not exhibit as much improvement as I anticipated, after my first examination, she should now manifest. Possibly she has not had "a square deal" from us and from her parents. These unfortunate patients are often treated by the family physician and by the neurologist alike, as dogs do the Nile. Either the parents are told that the case is hopeless or they are advised to get a teacher, whose work, pedagogical or hygienic, the physician is not fitted by training or inclination to supervise. Often the parents are warned so successfully against overstraining the child, that they do almost nothing toward disciplining or toward providing material for intellectual development. In many other instances the parents are told that the child will outgrow its present condition. Whichever attitude is taken, it is based upon an insufficient study of the existing conditions, and in the majority of instances the result is that the child reaches maturity a mental and physical defective.

I find nothing to marvel at in the fact that the majority of us are unable to supervise the training of these children and that so many of us leave to nature what properly belongs to the expert trainer. As a matter of fact, such expert trainers, as a class, have yet to be developed in this country, and in no department of pedagogy are we so far behind the procession as we are in making application of the well recognized fact, that children who do not conform to the average standard require individual instruction in order that they may properly develop. The successful trainer of mentally defective children should have unusual force of character, intelligence, insight, originality, knowledge of articulation work, such as is given to deaf mutes, and a familiarity with the modes of application of massage, baths, and calisthenics. In addition to this the trainer must be a vicarious mother and the supreme authority for the child.

You will recall that when you first sent the child to me I recommended simple exercises which could easily have been carried out by the mother, tonic baths, careful feeding, weekly weighing, and the removal of adenoids. When the child got to be five years old I suggested that it be sent to a training school for backward children, and that this school should be selected with great care, meaning thereby that it should meet the requirements of this particular case. Instead of following this advice, I am told that the mother employed a kindergartener as a governess. She could not have found one less fitted for the kind of work which was required for this child. The fundamental motive of the kindergartener is sympathy. What is needed for children such as ——, is intelligence, capacity to discipline, and sufficient insight into character to recognize that though a thing may be done advantageously in one way to-day, it must be done in a different way to-morrow.

My diagnosis of this child's condition is that she is suffering from an agenesis, or lack of development of the brain. The brain is, as you know, the central and dominant organ of the human economy which presides over the symmetrical functional development of many portions of the body. On the other hand its growth is favored or hampered by the state or condition of other fundamental parts of the body, such as the alimentary tract, the circulatory apparatus and the respiratory system, but the chief avenues of brain development are the sense organs leading to those areas of the brain which preside over the production and regulation of bodily movements. If the child cannot see, hear, smell, taste, or feel properly, it cannot acquire an adequate control of the movements of its body. On the other hand if there is some obstruction to motor expression or externalization which prevents the child from walking, running, from using the arms and hands dexterously, from moving the lips, tongue, and larynx coordinately, there is bound to be retardation in the development of its sense perception which will retard the growth of intellectual process and which will be manifested especially in disorder of attention.

You will observe that I appear to be going from the confines of medicine into the fields of education. My justification is the fact, that it is through education that neurology and psychiatry are bound to produce their best results. This child is not feeble-minded in the sense that there exists a congenital mental defect based upon an irremediable brain defect, in other words she should not be put in the category of idiotic children, although it may be thought from superficial observation of her that she is feeble-minded. It is only from the skilled diagnostician, who is acquainted with cases presenting psychological aspects similar to this child, that we can expect a differential diagnosis between inherent irremediable brain defects and those deficiencies which are the result of obstruction and deprivation.

A similar skill to that which the internist acquires from long experience with diseases and which permits him to say that such a case will recover with appropriate treatment and such a case will not, is what is demanded of the physician who essays to interpret and to treat the kind of case that we are considering. We are beginning to recognize that many states of mental and nervous exhaustion result from most trivial causes when the general vitality falls below a certain line. That which immediately precipitates this fall is oftentimes comparatively trivial. It is always the last straw that breaks the camel's back, but taking off this straw or indeed taking off the entire load will not cure the camel. The balance of the nervous system once upset is regained but slowly and no item of the patient's economy is too trivial to be disdained.

The same thing is true for these children. They are not feeble-minded, but they are psychasthenic in the narrow sense of the word. When we examine their mental and physical characteristics we can find no one thing that adequately explains their physical and mental deficiencies. Many children have larger adenoids than this child and yet their capacity for articulation is good. Still this child may remain unable to articulate until its adenoids are removed. In the same way an ordinary child possessing very little capacity of attention may learn easily without much time spent on physical exercises. This child has very defective powers of attention, inadequate control over the movements of her limbs and organs of articulation, and she will not be able to make mental progress until her attention has been first strengthened through the training of her motor powers. This can be accomplished by physical exercises, singing, articulation drill, and in other ways which will suggest themselves to the skilful trainer.

In other words, to develop this child's mind successfully, it is necessary that there should be a close cooperation of the physician and the pedagogue. The child must be under constant medical supervision, if the foundation for successful mental training is to be established and maintained. The adenoids should be removed immediately. This will enable the child to breathe through the nostrils and keep the mouth closed. This in time will remove a great deal of the idiotic expression of the face. You should carefully supervise her diet, which should consist of easily digested and highly nutritious foods. Tonic baths should be given daily. She should sleep in a well ventilated but not too cold room, and should sleep alone. It is important that she should get the full measure of sleep. The trainer naturally will see that a proper amount of rest is had during the day. If it is possible to procure satisfactory massage, she should be given some massage daily. This should be applied not only to the limbs, but also to the neck and spine. If there is any constipation, which I believe exists, this should be watched carefully and provided against through the selection of food and through abdominal massage, rather than through a resort to medication.

The educational treatment should be conducted by some skilled psychologist who has devoted his attention to this kind of work, and it should be carried out in such a way that the child is called upon to exert the best measure of energy which it possesses and still avoid overstrain and fatigue. I do not profess to have had such training myself, and I am therefore going to ask Professor Witmer of the University of Pennsylvania to examine this case with me. I shall advise that his interpretation of the pedagogical side of the case be accepted, and that his suggestions regarding the training of the child be carried out. I hold the opinion which was apparently first popularized by Apelles, that a shoemaker should give no opinion beyond the shoes.

My own experience has been that children such as this one should be taken away from home and placed in a training school where there are a few similar children. You say that the mother is not willing to have the child go to such a school, and we shall therefore have to send a trainer to her. Under the circumstances the trainer will have to

display as much diplomacy and tact in dealing with the mother as in training the child. Usually these children lack discipline of mind and conduct. They have been humored because of their defect, and they have not failed to take advantage of it. They are allowed to do pretty much as they please. In this case I learn that the child is docile, obedient, and of almost exemplary conduct. We have no reason, therefore, to look for active resistance. This will considerably lighten the task of gaining control over the child's mental capabilities. Discipline of mind is somewhat more difficult to obtain than discipline of conduct. These children show a lack of discipline through their inability to give attention to what the mother or trainer may desire them to do, through inability to do things repeatedly, whereby they become automatic, and through inability to become insensitive to distracting occurrences around them, or through complete absorption in their own meager train of thought. To give proper mental discipline and at the same time to gain the obedience and affection of the child, is an important part of the work of the trainer. She must exact that obedience which "makes slaves of men and of the human frame a mechanized automaton," for it is such a transformation that we wish her to induce. The child must recognize the trainer as the dominant influence of its life. There must be no questioning of what she does, nor of the wisdom or legitimacy of her demands. Complete, absolute, implicit obedience is her due. The child must be rendered as incapable of offering passive resistance, as she is unable to think of offering active resistance.

The trainer must realize that she is dealing with an individual and not a class. She must know that while there are certain general principles which apply to the education of these children, it is nevertheless the insight into the particular needs of the moment that affords her the best opportunity. She must know that what may be done to-day with benefit, cannot be done to-morrow, that the child may be kept at an allotted task for fifteen minutes on one occasion, when under other circumstances three minutes may suffice to bring on injurious fatigue. The capacity of the child must be carefully measured, and the trainer must appreciate that this capacity is a variable quantity. The trainer must also have a definite idea of what is the next most favorable step of progress for the child to take, and the best mode of inducing the child to make this forward movement. We cannot expect her to have a comprehension of the physiology of the nervous system, but it is not too much to ask that she shall know the physiological mechanism of movements of all sorts, and that she should attempt to apply to the individual needs of her charge the best that is known concerning the physiological and mental antecedents and concomitants of all purposive movements.

In work of this kind it is always necessary to resort to some form of physical education. This is not only beneficial to the body, but is also absolutely essential for the training of the powers of attention. All physical and mental exercises intended to train the attention and the will should be given by the trainer herself, and no part of them—it matters not how simple or elementary, or how often repeated they may be—should be delegated to others or to the child itself. To execute a movement exactly requires a definite mental image of the movement which it is desired to imitate, and a considerable exercise of the power of attention. It is extremely important in the beginning that some movement should be selected which the child can easily carry out at command. From a few simple movements of this work, the trainer should then proceed to new and more complicated movements. It is from relatively simple movements, performed with precision and at command, that the greatest mental discipline may be expected. In addition to these simple movements of precision, there should be others that are performed more freely and rather by way of amusement. These include many rhythmical exercises, which I hope eventually will overcome the incoordinate movements which this child now has. Some forms of play, in which the child may happen to be interested, should be encouraged, and used as a basis for further development, that is to say, her play should be cultivated to reach progressively higher levels. In this class come such movements as are involved, for example, in cutting out paper figures with a pair of scissors. This will not only amuse and rest the child, but will also tend to steady the movements of the upper extremities and will play an important part in training visual attention. The cutting out of various objects may also be employed as a means of training the child's imagination, or used as a medium for imparting much information.

In these general considerations I can only point to the necessity of having the work stand in some definite relation to the child's mental and physical status. Thus, every child needs coordinate physical exercises, but this child is marked out especially as having an incoordinate gait, the movements of her arms are excessive, and the articulation is very imperfect. Naturally, we desire to control these movements and perfect her articulation. Consequently we will select such activities as will not only develop will power and train the attention, but also improve coordination of the limbs and organs of articulation. That is to say, the child will first be taught to walk, then to run, to hop, skip, jump, and dance; with the hands to catch a ball, to throw, to use chalk, to hold a pencil in her hand, and, finally, to write; with the organs of articulation, first to open and shut the mouth, to move the tongue to and fro, up and down, to breathe properly, to gain voluntary control over the breathing process in association with the emission of vocal sounds, and, finally, to take the positions appropriate for perfect articulation. If the child is musical, the task is going to be a much easier one, and it should be early determined whether the child is responsive to melody, rhythm, and pitch, and has a good singing voice.

Most children like to make up and make believe. I have heard through a member of the family that this child has a great interest in dressing up in fancy clothes and pretending she is some other person. This is a natural inclination, which the trainer will undoubtedly make good use of. She will teach the child how to play better, and through her interest in "make believe" may get the child interested in stories, drama, or opera, and from this lead the child on to an interest in acting, declaiming, in people and events in the world about her, and in history.

I cannot lay too much stress upon the importance of a continual appeal to the child's aptitudes and interests. Any special aptitude which may disclose itself, as in singing, for instance, supplies a great lever. These children need encouragement. Here is a girl of eight years of age who all her life long has found herself unable to do the things which ordinary children of her own age accomplish with ease. She has found herself completely out of the

running. To bring her into competition with ordinary children will require her to pass through a very lengthy course of training, which is tedious and often discouraging. The inspiring influence of some one aptitude wherein she is better than other children, may serve to lighten the task immensely. It should be taken hold of immediately, as a means of development, for it will give her confidence and self-respect, and stimulate her ambition.

You are doubtless desirous of knowing the amount of progress that this child may be expected to make as the result of training. Considering her present condition, you will probably suspect me of excessive hopefulness and optimism when I inform you that I see no reason why this girl should not be developed into an entirely normal young woman. By that I do not mean to imply that when she reaches the age of eighteen she will have the robust health of mind and body that will enable her to commit the many indiscretions in the direction of over-eating, late hours, and excessive exercise which so many young women to-day permit themselves during the period of adolescence. She will probably always be required to be careful to avoid the excessive strains of life. Barring this, I believe that in station and gait, in conversational abilities, in ripeness of intellect, in accomplishments, and in physical appearance, she will be indistinguishable from her associates. The most difficult factor to combat is the choreic movements. These undoubtedly can be made to disappear in the legs, and with more difficulty in the arms and face. It is my belief that skilful training will enable this child to learn how to control these forced movements. The training must have due regard for the sensory as well as the motor side. What we observe are the forced movements. What we cannot observe but is probably nevertheless existent is a feebleness or weakness of sensations received from these movements. If the trainer will have due regard to the development of the perception of the sensations received from these automatic movements, she will lay the foundation for inhibitory control. The capacity of the child to gain this inhibition will depend to some extent upon her intelligence. The more intelligent the child is, and this will be developed as a result of training, the more confidently I should expect these movements to be overcome at an early period. I see no reason for believing that there is any mental enfeeblement present. We must therefore regard her as at the present time having a normal intelligence, which is unable to manifest itself owing to the many physical difficulties with which she is burdened. Open the avenues of the intellect, and we shall probably find her possessed of normal intellectual capacities. Given these, it is my belief that in from three to five years these movements should practically disappear, to recur from time to time only at moments of excessive fatigue or unusual emotional excitement. They will disappear first from the lower limbs, then from the face. The most difficult to control will probably be the movements of the arms, but it will be necessary that such control shall be gained in order that the child be enabled to write properly.

A very favorable prognosis of intellectual development can be given. The child is young enough to respond instinctively and imitatively to the suggestions of the trainer. With a skilful appeal to whatever special mental qualities reveal themselves, there can be little doubt that this child's mind will unfold year by year unexpected capabilities. The mother, I understand, asks at the present time little more than that the child be able to sit at table without being virtually a specter at the feast—in other words, she wishes her to escape notice among her friends. A great deal more than this can be done for her. In my experience it is much more common to unearth unusual mental capacity than it is to find these children to be more seriously limited than was at first supposed. The development naturally will be slow. In the first month probably very much will be accomplished. This will give rise to exalted hopes, and the first year will perhaps be spent in doing little more than making steadfast such progress as was indicated in the first month's work. The home environment is always a great difficulty for the trainer to contend against. I should estimate that this child's progress would be very nearly double what it would be if she were trained away from the influences of the home, but even with the home environment I believe that at the end of three years we shall find this girl practically normal, and with very positive indications of the kind of young woman into which she may be made to develop. I am, of course, assuming that we shall have in this work the entire cooperation of the family in carrying out the medical treatment, in making necessary changes in climate, and in following out the suggestions of the trainer. If we do not have this, we shall, of course, fall short of my expectations. My prognosis is based upon what can be accomplished under the most favorable conditions.

Yours sincerely.

Correspondence.

VISION AND MORALS.

To the Editor of the Medical Record:

Sir:—He who plants a valuable idea in the minds of his fellow men, and watches it long and weeds and waters it faithfully, though he may never live to see it as a tall and glorious tree, nor, himself, gather ripe fruit from its branches, yet has he that true satisfaction which is beyond and above the loudest plaudits and golden rewards of the world.

It has taken a long time for the idea of "eyestrain" as a major factor in many diseases to grow in our minds, and one man above all others has labored long and unselfishly to stimulate that growth. But, where once he looked in vain over the field to see the tender leaves piercing the ground, now the spreading branches are everywhere and we hear them sway and sigh in the breeze of recognition.

That much admired and much maligned book "Concerning Lafcadio Hearn," just issued from the press, deserves to be read and pondered by every live practitioner, as the latest bloom, the subtly scented flower of the seed planted long ago by one earnest member of our profession. Less direct in its lesson than his well known "Biographic Clinics" it appeals in a different way to the professional reason and understanding; it gives us a picture, graphic beyond description, of the silent, subtle, yet overpowering influence of eyesight on a man's character and work. By reason of limited vision Hearn was what he was—wonderful in a wonderful way—limited on the one hand—boundless in his ability to use the English tongue, on the other. His very lack of imagination can be traced to his lack of vision. What eye hath not seen the mind cannot conceive. No wonder he was vacillating, shiftless, uncertain in his friendships as in his purposes, for he had never come into actual, everyday, visual contact with his fellow-men, as most of us do. He never *saw* them. The flitting emotions and impulses mirrored on the faces of those around him conveyed no meaning to his semiblinded eyes. Like the totally blind, he was ever suspicious, from want of knowledge of men.

And what occurred in him may occur in many. Clear vision gives clear judgment—defective vision in its varied manifestations gives different warps and bents to the minds of its unfortunate possessors. Can we blame men for their misfortunes of birth? Can we wonder at their warped mental attitudes when their physical vision shows them only a warped and distorted world?

So the first great question concerning defective sight is its bearing on reflex disease, and this makes it incumbent on us all to think of this cause *first* in looking for causes—not last—as we too often do. And the second great question is the relation of vision and its defects to character and morals, and the problem to solve is, can we by early correction of visual defects *convert* the growing child into the straight path that leads to moral worth and soundness of intellect?

Edward Willard Watson, M.D.

Philadelphia.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THERAPEUTIC NOTES — NEGLECTED REMEDIES — RHEUMATISM AND CHOREA—SALICYLATES—THE BLACKWATER FEVER EXPEDITION—ST. MARY'S HOSPITAL—SIR G. KEKEWICH AGAIN.

London, May 22, 1908.

The proposed bureau in London for collecting and distributing information with regard to sleeping sickness may now be considered as an accomplished fact. On Monday the Colonial Office announced that the Government, with the cooperation of the Royal Society and the Government of the Soudan have appointed the honorary committee, consisting of Sir West Ridgeway (as chairman), who is also chairman of the advisory committee on the Tropical Diseases Research Fund; Sir Patrick Manson, Sir Robert Boyce, Dr. Rose Bradford, Col. D. Bruce and Messrs. Clarke, Read, and Lobb of the Foreign and Colonial Offices.

The bureau will be administered by a paid director, Dr. Bagshawe of the Uganda medical staff, and its main function will be to collect information respecting the disease from all sources, to collate, condense, where necessary translate, and distribute that information as rapidly and as widely as possible among those at work on the subject. Two categories of publication will be issued—(1) scientific for those engaged in research work or in carrying out medical administration in infected districts, and (2) less technical publications for the use of Government officials, missionaries, and others whose duties require residence in such districts. One important work will be to produce a map of the whole of tropical Africa, showing the distribution of sleeping sickness and of the blood-sucking insects which are suspected of conveying it. This map, showing how far the distribution of the disease coincides with that of the different species of insects, is expected to supply valuable information to scientific investigators and to give guidance to different administrations by indicating the lines of advance of the disease and the districts which require special protective measures.

The Royal Society will provide accommodation for the bureau at Burlington House, and the Soudan Government will contribute one-fourth of the cost of upkeep.

Dr. Seymour Taylor has called the attention of the West London Society to some old remedies which he considers are too much neglected. Fashion is not altogether without influence, but it may be well to protest against interested vendors of drugs or special modes of preparing them. Pharmacists have too easily made themselves the instruments of interested persons and so far lost position as the right hands of prescribers. Dr. Taylor, in commending neglected remedies, did not confine himself to drugs. In fact, he put external applications in the foreground of his recommendations. Thus he was convinced that a seton judiciously applied in epilepsy could render the fits less frequent and less severe. Then venesection, so rarely resorted to nowadays, he has found, as is generally believed, very useful when the right heart is embarrassed. Bleeding was also useful in many cases of pneumonia, in chronic bronchitis with cyanosis, and acute edema of lung from mitral obstruction. The indication for this measure is from the heart rather than the lungs. He mentioned a case of suicidal hanging in which the external jugular was opened and life prolonged to the third day, with a suggestion that if adopted earlier the remedy might have resulted in recovery. A blister to a rheumatic joint gave great relief, and this treatment had been revived for pericarditis. Turning to drugs, Dr. Taylor said arsenic was often as good as iron in chlorosis, but must be persevered with. If it acted as a mild purgative, so much the better. He thought arsenic useful in some skin affections, but its chief use was as an adjunct to iodides in syphilides and nodes. In primary syphilis Plummer's pill, freshly made, was valuable. Pulvis basilicus or royal powder was a good febrifuge for children with gastrointestinal symptoms. In the profuse or fetid expectoration of chronic bronchitis guaicum, ammoniacum, and even copaiba, might be utilized. In acute affections of the respiratory tract antimony deserved more attention. Musk he had known to save a life which seemed to be sinking in typhoid. Dr. Seymour Taylor did not suggest that these remedies were quite discarded, but he thought most of them might be more frequently prescribed. I suppose no one will deny that in the crowd of other newer claimants they are rather out of fashion.

Let me contrast the remarks of Dr. Taylor with some statements made in the Therapeutical Section of the Royal Society of Medicine. At the last meeting Dr. Leonard Guthrie read a paper in which he maintained that the salicylates are palliative—not curative—in rheumatism and chorea in children. Large doses he found were not devoid of danger. He was told that sodium bicarbonate was an antidote, but he thought it questionable practice to give poison and antidote together. Rest in bed, isolation, and nutrition were the remedies for acute chorea—in very severe cases hypnotics. He could not recommend arsenic on the intensive method. Gastrointestinal symptoms and neuritis were too frequent. The average duration under the treatment he advised was four or five weeks. Cases running to three months were not good testimonials of treatment.

Dr. Cecil Wall endorsed Dr. Guthrie's views and referred to statistics he published in 1905. (Transactions of Therapeutical Society), and which showed little difference in results under arsenic, salicylates, and other drugs—except acetosalicylic acid, which gave a shorter period before discharge from hospital. As to aspirin, gastric disturbances would be prevented if it were only given after meals—never on an empty stomach. Further, it should be given in powder only—never in tablet form. Very large doses, such as he would never prescribe, he had known to give rise to hematuria. In severe cases, he thought sedatives useful. Chloral or chloralamide lead bromides he considered injurious. They had been known to produce mania. Any such depressant increased the condition.

So far the dangers or limits of the salicylates. Now turn to the replies put forward. Dr. D. B. Lees advocated in both rheumatism and chorea very large doses of sodium salicylate and believed they were better tolerated if double doses of bicarbonate were given at the same time. He said if unpleasant symptoms appeared, the dose should be diminished—not omitted. It was not difficult to educate a patient up to tolerating three or four times the dose that first produced disagreeable symptoms. The local use of ice in pericarditis had given him extraordinary good results. Dr. Gordon Sharp argued with Dr. Lees as to the value of large doses of salicylates, and declared he had never known them give rise to depression. He expressed astonishment, too, at the opinion against arsenic, which he had met with in London. In the North of England it was regarded as a most valuable remedy. He suggested a peculiarity in the London constitution. Dr. Gray Duncanson supported him in this, as in Scotland they found arsenic very successful. The differences might perhaps be due to differences of environment.

News has been received from the Blackwater Fever Expedition, sent out by the Liverpool School of Tropical Medicine last August. A despatch, dated Blantyre, reports that the work is progressing satisfactorily, and states that already the mechanism of blackwater fever has been put on a different footing to that which it has heretofore occupied. Drs. Barrett and York are recording their work as they go on, but it is not proposed to publish results until they return. They have not at present seen many patients passing black water.

A three-day fête at St. Mary's hospital has been held, in order to raise funds to enable the Memorial Clarence wing to be fully occupied. It was opened on Tuesday by the Princess Henry of Battenberg; on Wednesday by the Lord Mayor and Lady Mayoress. St. Mary's has always enjoyed the support of the royal family. The original foundation stone was laid by the late Prince Consort, sixty-three years ago. Twenty years later, the King (then Prince of Wales) laid the first stone of an enlargement (1865). The next extension was opened by Princess Louise. The first stone of the Clarence wing, in memory of the Duke of Clarence, was laid by the King in December, 1892. Two floors, in which the fête has been held, have so far remained unoccupied. It is hoped these wards will now be speedily furnished and used for patients.

The history of this, like that of many similar institutions, shows how ready committees are to undertake building before they have obtained the money to meet the cost.

Sir George Kekewich seems inclined to dispute the

claims of Mr. Stephen Coleridge to the leadership of the antivivisectionists. I gave you last week a sample of his slanders. He presided over a meeting last night, in which he said the association was "not a hysterical and half-crazy body of old men and women, or a lot of wishy-washy, weakminded sentimentalists." He declared they had made "full investigation," and meant to "abolish entirely the terrible cult." By way of showing how fully he has investigated the matter, it is only necessary to say he said, instead of benefiting the human race, vivisection had injured it, notably in connection with the plague in India, which could have been stamped out in seven months, but had been prolonged to eleven years by the use of serums. Just think of a number of people listening to and approving such stuff! Among his supporters, too, are members of both Houses of Parliament, etc.

The proposal to organize an International Society of Tropical Medicine has been well received. Already the German society devoted to the subject has appointed two delegates to attend the meeting to be held in London during the coming summer or autumn.

Progress of Medical Science.

Boston Medical and Surgical Journal, May 28, 1908.

A Case of Intravesical Cyst of the Ureter.—In the case reported by E. A. Codman, the chief symptom was a urine turbid from pus and bacteria. The three-glass test showed that the pus came from the bladder or kidneys. The cystoscope showed a cyst at the site of the left uteral orifice. Calculi were detected by the *x*-ray in the left ureteral region and they lay at different times in different relative positions. By an operation combining the technic of suprapubic cystotomy and pyelonephrotomy, the stones and cyst were removed. One year later there was no evidence of reformation of stones or cyst, but there persisted a mild degree of bacteriuria, phosphaturia and alkalinuria. The patient was a Russian male twenty-four years of age. The author does not regard the condition as severe enough to demand operative intervention like drainage of the kidney pelvis in the loin or even frequent lavage of the renal pelvis through the ureteral catheter. Such treatment might do more harm than good. Full details of the operation and of the chemical and microscopical examinations in the case are given in the original paper.

New York Medical Journal, May 30, 1908.

The Management of Self-Limited Disease.—W. B. Konkle says that the term "management" indicates direction rather than coercion; influence rather than usurpation; promotion of recovery rather than cure. It is not exclusive of the idea of specific treatment of disease. In every case of self-limited disease rest and sleep should be given careful attention. To this end pain of a degree that is distressing and exhausting should be controlled. Of course the heart should be assiduously, untiringly watched. A consideration of vital importance is the efficient performance of their functions by the emunctories—this cannot be overemphasized. Nutrition should be looked after; but here again natural indications should be closely studied—we should be careful not to say eat when nature says fast. Water will be the indispensable food. It is a serious matter to administer a really active dose of a potent drug. To do it intelligently is eminently proper. To do it at random is eminently reprehensible. In the management of a case of self-limited disease, immediately after the requirement of an adequate acquaintance with the natural history of such disease, comes the obligation to see that this natural history be normally developed. The single but solemn duty of the doctor here is to have the disease keep its due course, or maintain its symmetry. He can do no more than that; he should try to do no more. His province includes no less than that; he should aim at no less. As a corollary of his obligation to see that these diseases hold their course stands the further obligation to not interfere when that course is being followed. Symptom tinkering is extremely pernicious, can do naught but harm, where a proper balance or proportion between the symptoms already exists. In illustration take temperature. Not so long ago it was thought good practice to depress exalted temperature, regardless of its relationships; now it is coming to be considered a useful factor, and its deficiency within bounds is deplored.

Gonorrheal Rheumatism Cured by Seminal Vesiculotomy.—E. Fuller has performed the operation of seminal vesiculotomy 101 times without a death. Of these operations 23 have been done for the relief of gonorrheal rheumatism. In all the operation has had a profoundly beneficial effect on the rheumatism. Histories of 8 cases are given in detail. In all the 23 cases referred to above there was a seminal vesiculitis to account for the focus from which the systemic absorption originated. Of this group of cases 17 were cured as a direct result of the operation and were well when last seen. Of the remaining six two recovered and remained well until they contracted a fresh gonorrhea. Rheumatic symptoms then reappeared. Two more remained well until they indulged in sexual excesses, but when the effect of the latter passed off they again became well. Two very chronic cases relapsed, but they were a class exposed to destitution and poor living. In the acute bedridden cases the effect of the operation is most marked. In twenty-four to thirty-six hours the pain in the joints disappears, and by the fourth day the swelling. Some stiffness and some atrophy of the muscles are of course left after the rheumatic process has disappeared in these acute cases, requiring massage and passive movement. In the chronic cases pain disappears in a week or ten days, and at the end of two weeks massage can be prescribed. In the very chronic cases it may take two to three months of massage and exercise to limber up the joints which have been robbed of their function.

The Kidney in Acute Infections.—J. B. Huber enumerates the diseases in which the kidney may become infected, describes their gross environment and structure, refers in a general way to their physiology, and summarizes the symptoms of their involvement by the various infections, together with the pathological changes occasioned thereby. His experience as Coroner's physician has impressed on him the fact that patients can live with extensive destruction of organic tissue, and that the average quantity of the urine, as well as the normal quantities of its various constituents, may be greatly reduced without any visible detriment. He utters a caution against the excessive use of water on the "flushing out" principle. Certainly the patient should drink as much fluid as he desires and can comfortably dispose of, but to force it on him in unlimited quantities is certainly a mistake. For this extra work is laid on the kidney and heart. We should ease up these organs by acting on the skin and bowels. In excessive erythema, the skin cannot perform its functions, and diaphoretis then are not available.

Extraction of Cataract in the Capsule.—Three cases are summarized by W. R. Marple. Contraindications to the operator are the following: (1) Even when from its character a cataract is suitable for this operation, it is contraindicated if, after section and iridectomy, the tension of the vitreous is high or the patient is unruly. (2) In cataracts which have been ripened by Förster's method, it is best not to attempt to extract in the capsule, since the latter is very tightly stretched by the swelling of the lens masses, and is apt to rupture if such an attempt is made. (3) Cataracts which have been ripe only a short time, and have ripened quickly, as in the course of a few months, should not be operated on after this method, as the capsule has not attained sufficient strength compared to that of the zonula. These cataracts are swollen, and are said to be in the stage of imbibition. In the cases reported the indications for operation are hypermature cataract in two, and dislocated cataract and presentation of the vitreous after section or iridectomy. As to the advantages of the operation, the author notes that the vision secured in the manner followed by him is permanent, for there is no capsule left behind to subsequently wrinkle and cause deterioration of sight. The best possible vision is secured, the pupil is clean, and a secondary operation is not necessary. As to disadvantages, it may be said that there can be no doubt that loss of vitreous occurs by this method far more frequently than when the capsule is left behind. Pagenstecher operated on seventy-four cases in which the cataract in one eye was hypermature, and in the other eye simply mature. He extracted the first seventy-four with the capsule and the last seventy-four without the capsule.

The Lancet, May 23, 1908.

A Method of Suturing the Lateral Recti to Insure Greater Mobility of the Stump After Enucleation of the Eyeball.—E. Clark's method is as follows: The conjunctiva is opened all round the sclerocorneal margin and freely separated from the globe. The two lateral recti are then separately hooped up and thoroughly isolated from their attachments, clamped with a Prince's forceps, and finally divided close to the eyeball; the other muscles are divided close to the eyeball and the globe removed in the ordinary way, but especial care is taken to remove the eye as cleanly as possible. One of the lateral recti is then sutured with catgut to the lower lip of the conjunctival opening on the opposite side and the other rectus to the upper lip of the conjunctival opening on its opposite side.

A thickish silk suture is passed through the margins of the conjunctival opening in the center, and not tied, but simply twisted. This twisted thread, although enough to keep the lips of the conjunctiva in apposition, allows the egress of any blood which may accumulate within. The bleeding of the stump should be prevented or arrested by a few drops of adrenalin solution and by very firmly applying a sterilized pad. The bandage can be loosened and the dressing changed six hours after the operation, and then the socket need not be redressed for twenty-four hours. At this later dressing the conjunctiva is pulled forward by the twisted suture and the parts gently bathed with a weak carbolic or some other antiseptic lotion. The twisted suture is entirely removed on the third day. If catgut is used for the suturing of the muscles they will require no further attention. The resulting stump forms a firm bed for the artificial eye, and its lateral movements are very extensive.

The Acute Suffocative Catarrh of Laennec and Other Conditions from Which It Should Be Distinguished.—S. West says that Laennec's catarrh is a peculiar and characteristic affection, rare especially in the adult, and not generally recognized as a clinical entity. It has to be distinguished from capillary bronchitis and disseminated postbronchitic — that is, secondary bronchopneumonia. More closely resembling it are primary bronchopneumonia —that is, disseminated pneumococcal pneumonia, and, possibly, an acute pneumococcal or other bacterial bronchitis. In association with it may be placed (1) acute pulmonary edema, developing in the course of chronic heart obstruction or of acute heart failure; (2) collateral fluxion or of pulmonary failure, and (3) pneumonia which commences with widespread pulmonary congestion. A careful examination should be made in all cases, of the sputum. The author's paper is an elaboration along the lines indicated, and several illustrative cases are given. Autopsy in fatal cases shows little change. The lungs are somewhat congested and the tubes contain more or less frothy mucus. According to Laennec, the urgent symptoms are due to the rapid tumefaction of the mucosa of the medium and small bronchi. They are surprisingly like those following the inhalation of such vapors as iodine and bromine.

Malarial Cirrhosis of the Liver.—E. F. Gordon Tucker refers to a condition not uncommon in India. It is a complex state, of which the hepatic disease is the terminal event. Ascites is late, and, maybe, only slight. In the early stage, the organ is a little enlarged, and in the last stage not very small. The finely granular surface is quite distinct in appearance from hobnailed liver. The cirrhosis results from repeated attacks of malarial hepatitis and capsulitis, associated with perisplenitis and a plastic peritonitis. The adhesions resulting from the latter along with the dragging of the enlarged spleen produce extreme deformities of the stomach. There are accompanying degenerative changes in the kidneys, involving both the interstitial tissues and the renal epithelium, and the nephritis may accelerate the fatal issue. Three case histories are given. In all these cases there is invariably found a history of ill health and progressive enlargement of the spleen has extended over several years. There have been repeated attacks of remittent fever with intermissions of fair health. After two or three years of this condition the patient notices the enlargement of the spleen, which is subsequently to become so extreme. By the time this organ has reached the level of the umbilicus or has filled up the left side of the abdomen, he is suffering from all the symptoms of a profound secondary anemia, with shortness of breath after exertion, languor, and, sometimes, slight puffy swelling about the ankles. Later still there is profound emaciation, and the abdomen still further distends from the collection of fluid in the peritoneal cavity.

British Medical Journal, May 23, 1908.

Recent Advances in the Surgical Treatment of Syphilis.—D'Arcy Power presents the following conclusions: (1) Experimental evidence has shown that syphilis is due to infection with spirocheta pallida, an organism which lingers for a short time at the seat of inoculation and then rapidly spreads through the body. This organism transmitted from parent to child is the cause of inherited syphilis. (2) Many forms of arthritis formerly classed as syphilitic are due to other infective agents acting upon tissue modified by the action of the syphilitic virus. (3) Syphilitic changes in the bones, joints, tongue and other parts may occur as a result of inherited syphilis much later in life than is usually recognized. They are then the result of accidental causes, and they are often the only evidence of the inherited taint. (4) The modern treatment of syphilis consists (*a*) in the more careful administration of mercury, which is now given to cure the disease itself, and not merely to relieve the symptoms, as has hitherto been the case; (*b*) in a recognition of the limitations of the absorptive power of the iodides; (*c*) in a freer use of surgical methods to remove the products of syphilitic inflammation before the iodides are administered.

The Absorption of Ointments.—R. L. Rutton's experiments seem to indicate that lard, simple or benzoinated, and pure goose grease, are the most quickly absorbed of all the substances commonly employed as ointment bases. Petrolatum penetrates poorly unless applied with friction. Lanolin alone is absorbed very slowly, but if mixed with a more fluid material, like olive oil, it enters the skin readily. The addition of a little oil of cedar wood considerably increases the rapidity of absorption. The author's experiments were conducted on guinea pigs and white rabbits. In order to get more direct results, various tissue stains in the form of aniline dyes, were employed. These were thoroughly mixed with diverse vehicles and applied to the bare skin, the hair having been carefully clipped off. In some instances friction was used, in others the fluid or ointment was simply painted or smeared on. After the lapse of a certain period, varying from fifteen minutes to several hours, the patch was excised under anesthesia. The pieces of tissue were at once blocked, frozen, and cut, the sectioning being done in a direction parallel with the hair shafts and from below upward, in order to prevent the stain from being carried further into the tissues by the microtome blade. For the same reason the knife was cleansed with ether after each stroke. The sections were immediately placed in a filtered mixture of honey, glycerin, and water, later being mounted and examined in the same media.

Treatment of Puerperal Eclampsia with Nitroglycerin.—J. M. McCarthy analyzes fifteen cases which have come under his personal observation, together with two epileptic cases, and one of tuberculous meningitis during which labor occurred. Of the eighteen mothers, twelve were saved. Of the fifteen puerperal cases, five mothers died out of the fifteen. Standard works state the mortality to be long ago from 40 to 50 per cent., and more recently from 20 to 25 per cent. His own cases approximate 33 per cent., but if we divide the mortality into three classes, having respect to the use or otherwise of nitroglycerin, as follows—(1) cases in which it was not used, (2) used only internally, (3) used hypodermically—we get the following results: Without nitroglycerin, 5 cases, 3 deaths; with nitroglycerin, internally only, 2 cases, 1 death; with nitroglycerin hypodermically, 8 cases, 1 death. The mortality among infants was four out of fifteen, or about 26.7 per cent. And here, by the way, it may be noted that, in selecting the treatment to be employed in any particular case, the life of the infant should have careful consideration; what effect, for instance, is a prolonged period of convulsions in the mother likely to produce on the life of the infant, and, if not on its life, on its future? In the case of a patient of the Roman Catholic persuasion the first question would be a very important one. The author enumerates the various drugs which have been employed in times past. In his own hands, nitroglycerin has been the remedy giving the best results. He admits that it is quite possible that the series of cases reported, with its results, may be only a coincidence, and he urges a more extensive trial of the drug under the conditions considered.

The Internal Use of the Oil of Turpentine.—Eustace Smith says that the most palatable way of giving this remedy is to rub it up with almond mixture, sweeten the whole, and flavor with a little oil of cloves. Caution must be used with reference to the kidneys. Large doses are aperient, and so pass off mainly through the bowels. Small doses do not irritate the kidneys. The remedy is of value as a hemostatic, as in purpura, and here it must be given in aperient doses. In hemophilia, an aperient dose will often bring about a cessation of the bleeding after all other remedies have failed. Smaller doses are good for such bleedings as hemoptysis, the melena of typhoid, etc. For uritis in the adult, both syphilitic and rheumatic, it may be given in dram doses thrice daily. One of its most valuable uses is its internal administration in small doses as an antiseptic and sedative in cases of flatulent colic and unhealthy states of the intestinal mucous membrane. Also in hiccough it may be used in combination with spirits of nitrous ether. It is useful in the removal of hepatic concretions. The curative value of turpentine when given by the mouth may often be supplemented and enforced by its internal use in enema. In cases of threadworms the vermicidal action of the remedy is strikingly manifested, and it has only a salutary influence upon the mucous irritation which is a constant accompaniment of ascarides if these be numerous. It has been employed, too, in cases of catalepsy. One ounce of the oil well mixed with a pint of thin gruel and thrown slowly into the bowel acts as an

energetic stimulant to the torpid nervous system; and the injection, if followed by vigorous frictions along the spine with a strong irritating liniment, is said to be attended with very satisfactory results. In flatulent colic a terebinthinate enema, if given hot, is a welcome addition to the use of remedies by the mouth, and will often bring a severe attack to an immediate close. In the seizures of this kind which have been before referred to as common in infants the derangement is a cause of so much suffering that nothing which tends to shorten the attack should be neglected; and the injection of a dram of the oil in five or six ounces of hot barley water thrown slowly into the bowel will often put an end to the distress and send the child into a quiet sleep.

Berliner klinische Wochenschrift, May 18, 1908.

Disinfection of Stomach Tubes.—Fuld says that disinfecting stomach tubes by boiling them in water very soon damages the rubber. He has found a safe method of disinfection in keeping the tubes in 50 per cent. glycerin at 70° for twenty minutes. The rubber is made fully sterile by this method, and the tube does not seem to be harmed by the heating. It may be kept in the same fluid after the disinfection, and introduced directly without being rinsed in water.

Periosteal Fibrosarcoma.—Nunokawa describes a case of periosteal fibrosarcoma involving the left ilium. At the autopsy it was found that the numerous metastases seemed to be confined to the bones alone. The explanation of the path taken by the cells responsible for this dissemination of the neoplasm was found, however, in a number of very small neoplastic nodules in the lungs. These lung metastases were of abortive character, and could be easily overlooked with the usual autopsy technique; they were important in forming the connecting link between the primary tumor and the numerous bony deposits. The author thinks that small metastases in the lungs are a frequent source of origin for the generalized dissemination of a new growth throughout the body.

Münchener medizinische Wochenschrift, May 5 and 19, 1908.

Proteolytic Property of Sterile Pus.—Hertz has produced foci of suppuration in dogs by the injections of turpentine, kreolin, silver nitrate, and mercury. In all cases the pus obtained by such means proved to be sterile. He further tested its proteolytic activity by the method of Müller and Jochmann which consists in placing drops of diluted pus upon Löffler's serum plates. Pus due to injection of turpentine had no proteolytic action, while pus following the injection of the other chemicals possessed such action even in high dilutions. Microscopically turpentine pus consisted of lymphocytes, the pus caused by other injections contained polymorphonuclear leucocytes. The author, accordingly, corroborates the statement of Müller and Jochmann that polymorphonuclear leucocytes alone possess a proteolytic property.

Hot Irrigations in the Treatment of Chancre and Chancroid.—Zinsser irrigates venereal ulcers three to five times daily, using a strong stream of postassium permanganate in the solution of 1:4000 for this purpose. Four or five liters of the solution are used at a sitting, the temperature being raised from 45°C. in the beginning of the treatment to 50° later. Such treatment leads to discharge of the necrotic masses, disappearance of the offensive odor, and great improvement in other local as well as general symptoms. The favorable action of such irrigations is due to the mechanical cleaning of the sores, the bactericidal action of the hot antiseptic solution, and the hyperemia.

Gelatin and Salt Solution in Typhoid Hemorrhage.—Witthauer has used subcutaneous injections of gelatin and of salt solution in this condition and considers them of great value. He recommends that gelatin should be used every day or every second day while the salt solution may be injected even oftener if needed. The injections are to be discontinued after two days have passed without bleeding. Sterilized gelatin sold in glass tubes is best used for the above purpose.

Antibodies in Typhoid Bacilli Carriers.—Schöne says that the immunity of the chronic bacilli carriers must be explained by the production of antibodies which protect the mucous membranes from the bacilli. In the blood of two out of three bacilli carriers he has succeeded in showing the presence of complement-binding antibodies. None were found in persons that had had typhoid before, but did not harbor the bacilli. Schöne thinks that the demonstration of these specific antibodies may help the discovery of bacilli carriers, in some of whom neither the agglutination nor the excretion of bacilli are constant phenomena.

Pathology of Recurrent Fever.—Rabinowitz examined the organs of forty-five patients, in thirty-five of whom the diagnosis at autopsy was recurrent fever, in eight "biliary typhoid," in two Weil's disease. Microscopically, the first two groups showed similar appearances. Most characteristic changes were seen in the spleen in the shape of hemorrhagic infarcts, karyorrhexis, and deposits of fibrin. The kidneys showed parenchymatous changes, and the cells of the liver and of the heart stained badly. Free and intracellular spirilla were found in the patients dying in the first and second crisis of the fever or in the first apyretic period, being distributed through many organs. The organisms were oftenest observed in clumps and foci, and in the spleen such clumps were found near the areas of fibrin and of karyorrhexis. Their number was diminished in the second paroxysm, and after it they could be no longer demonstrated.

Von Pirquet's and Moro's Tests Compared.—Emmerich has used Moro's tuberculin ointment for the diagnosis of tuberculosis in 241 patients, in 121 of whom the v. Pirquet cutaneous test was also applied. He concludes that fewer patients, clinically free from tuberculosis, give a positive reaction with Moro's ointment than with v. Pirquet's test; that the ointment test is much easier applied; that it fails to produce a reaction in progressive tuberculosis much sooner than the cutaneous test; that latent foci cause a positive reaction with the ointment, which is, therefore, of little use in adult patients.

Deutsche medizinische Wochenschrift, April 29 and May 14, 1908.

The Practical Uselessness of the Ophthalmotuberculin Reaction.—Klieneberger has tried the Calmette test in fifty-two cases of tuberculosis, in which bacilli were demonstrated in the sputum. In nineteen patients, or 63.5 per cent., reaction was observed, the greater number of negative results being given by patients in the third stage of the disease. Of the one hundred and twenty-three persons with suspected tuberculosis sixty-eight, or 44.7 per cent., gave a positive reaction; of the 239 persons in whom no tuberculous infection could be diagnosed clinically, fifty-six, or 23.5 per cent., gave a positive reaction. The author thinks the ophthalmoreaction has no prognostic significance; that a positive reaction is not a sure sign of the existence of tuberculosis; that negative results are of still less value. He prefers the cutireaction of v. Pirquet, because it is not dangerous and is less liable to error. Of seventeen tuberculous patients of his series, fourteen gave a positive cutaneous reaction; of eighty-six suspected cases forty-five gave a positive reaction; of twenty-three cases in which no tuberculosis was suspected, sixteen reacted.

Prophylaxis of Syphilis.—Uhlenhuth and Weidanz say that they, with other authors, have succeeded in showing that the arsenic preparation atoxyl is both a curative and a preventive remedy in syphilis, the latter action being demonstrated on apes inoculated with the disease. They have further compared the relative value of atoxyl and of mercury as preventives of syphilitic infection by many experiments on rabbits. With the use of atoxyl they were able to prevent a specific keratitis in any of some thirty or forty animals used, though the controls showed the virulence of the material employed. No such action could be satisfactorily demonstrated in the case of mercury and its value as a prophylactic remains undecided. The authors disclaim any intention of claiming that their results deny any possible preventive value of mercury in human infections with the virus of syphilis, but are of the opinion that the work of Metschnikoff, Salmon, and others show that atoxyl even here is a better remedy than mercury.

Apex Tuberculosis in "X"-ray Pictures.—Albers-Schöneberg says that the small foci of infiltration may be discovered at a time when they give no physical signs on percussion, and few or none on auscultation. Normally, the apex presents a black shadow with whitish streaks made by the vessels. The pathological findings may be as follows: There may be well-marked diffuse shadow without the blood-vessel streaks; the shadow may be evident only in the upper portion of the apex and present a linear demarkation from the rest of it; cloudlike, often confluent spots may be seen; distinct, separate, lenslike foci; distinct, deep shadows, probably due to calcified spots; unilateral white border running parallel to the lower edge of the second rib. The sources of error are found in pictures showing no contrast; in over-exposed plates, which show the vertebra very distinctly, while the apices appear as very dark shadows without vessel streaks; in under-exposed plates, where bone and lung tissue cannot be differentiated; in lack of sharpness in the pictures. Other sources of error are found in the local changes of the tissues overlying the lungs, and in the bad position of the patient during the process of taking the pictures. Only technically perfect *x*-ray pictures are useful in the diagnosis.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-ninth Annual Session, Held in Chicago, June 1, 2, 3, .. 4, and 5, 1908.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 968.*)

HOUSE OF DELEGATES.

Wednesday, June 3—Third Day.

Report of the Reference Committee on Sections and Section Work.—Dr. LEARTUS CONNOR of Michigan, Chairman. The resolution presented at the previous day's session to provide for the establishment of a section on the science and art of diagnosis was reported upon adversely. The report was adopted.

Report of the Reference Committee on Legislative and Political Action.—Dr. C. S. BACON of Illinois, Chairman. The committee reviewed the work of the Committee on Legislation during the year. Under the head of national legislation it recommended the adoption of a resolution providing that, in view of the great importance of the duties of the dental corps in both branches of the military service of the country, action should be taken, in accordance with the views of the Secretaries of War and of the Navy respectively, to obtain legislation at the next session of Congress looking to the establishment of these corps on a commissioned basis. The resolution was adopted.

The resolution presented at Tuesday's meeting providing for a special committee to seek such a modification of the patent and trade-mark laws as to prevent the acquirement of proprietary rights in pharmaceutical preparations was favorably reported on, and was adopted by the House.

The draft of a model law for registration of births and deaths was recommended to be approved and communicated to constituent bodies with a view to its adoption by such States as now had no provision for keeping vital statistics. The recommendation was adopted.

The proposition for the establishment of State legislative committees to act in connection with the Committee on Medical Legislation was recommended for approval, and was adopted by the House.

The resolution presented at Tuesday's session by Dr. Sanders of Alabama, to seek a national charter for the Association, did not have the support of the committee, in view of the fact that repeated efforts in the past toward the same end had been futile. This adverse report was adopted.

Report of the Reference Committee on Hygiene and Public Health.—Dr. W. N. WISHARD of Indiana, Chairman. On the question presented by the Board of Public Instruction in its report as to whether articles for the instruction of the laity, under the authority of the Board, should or should not be signed by the author, the Reference Committee recommended the adoption of a resolution expressing the sense of the House of Delegates that the name of the writer might be published at the discretion of the Board, but that neither his place of residence nor positions held by him should appear.

Dr. J. F. PERCY of Illinois was convinced that the medical profession had gone too far in its fear of self-advertising. He considered that the articles under consideration provided an ethical way of reaching the public. So far as the main purpose of the effort was concerned, undoubtedly the names of the authors should be published with the articles, and he did not think the fear of advertising an adequate argument against such publication.

Dr. WILLIAM T. SMITH of New Hampshire believed that articles should either be signed by their authors or should be indorsed by the Board of Public Instruction. On the suggestion by a member that the matter of publishing the names be left altogether to the discretion of the Board, it was pointed out on behalf of the Committee that the Board wished a definite expression of the sentiment of the House as to whether the names might be published. The Board would still retain discretion in the matter.

Dr. A. K. WEST of Oklahoma thought that the designation of the positions held by the writer should certainly be given. The name of a leading man talking to the people of his State would have much more weight than the mere publication of an unsigned paper.

Dr. OLIVER T. OSBORNE of Connecticut asked why the committee thought the name only and not the title of the writer should be published. Explanation was made that the committee, realizing the great differences of opinion which existed in the profession upon the subject, made this recommendation in the nature of a compromise between extreme views. The committee desired to approve the main question, and to leave the matter of amendments along the line of signature to the House of Delegates, expecting that the matter would be the subject of considerable debate which would develop the sentiment of the Association. After considerable discussion, the question was recommitted to the Reference Committee for the formulation of a new resolution, which was later reported to the House and adopted, as follows:

"Resolved, That it is the sense of the House of Delegates of the American Medical Association that the papers authorized by the Board of Public Instruction shall bear the statement of such authorization by the American Medical Association, and may be signed by the author."

The Reference Committee recommended that the report of the Committee on Ophthalmia Neonatorum be adopted, and that the committee be continued for another year, to carry on its work as outlined in its report. The recommendations of the Reference Committee were adopted.

Report of the Reference Committee on Constitution and By-laws.—Dr. GEORGE W. GUTHRIE of Pennsylvania, Chairman. The committee reported favorably an amendment to the By-Laws providing that the Sections on the Practice of Medicine, Surgery and Anatomy, and Hygiene and Sanitary Science should elect the orators on medicine, surgery, and State medicine, respectively. After the addition on the floor of the House of a proviso that the annual addresses on the above-named subjects should be delivered by the orators before their respective sections, the amendment was adopted.

Report of the Reference Committee on Miscellaneous Business.—Dr. STUART MCGUIRE of Virginia, Chairman. The committee had given consideration to the report of the Committee on the Davis Memorial and to the supplementary statement presented at Tuesday's session by the chairman, Dr. MARCY. The question of an appropriation toward the memorial fund had previously received the careful attention of the Board of Trustees, who had considered that to make such an appropriation would establish a dangerous precedent and hence be unwise. The Reference Committee recommended that the Board of Trustees be upheld in its decision, and the recommendation was adopted.

On the question as to whether the Association should request of State societies that they adopt a policy identical with that of the *Journal* to exclude from their organs all advertisers whose products had not been indorsed by the Council on Pharmacy and Chemistry, the committee recommended favorable action.

Dr. WALTER CHEYNE of South Carolina advised delay, saying that for the present the matter should, he thought, be left to the Association of Medical Editors, and that the House of Delegates should let the matter go over for another year.

Dr. MCCORMACK pointed out that almost this iden-

tical resolution had been adopted a year ago, except for the formal communication of the recommendations to the State societies. It was a matter of such vital importance that if the State societies should not accede to the sentiment of the association thus expressed, the House of Delegates should next year, he thought, instruct the State bodies to obey its injunction.

Dr. Oliver T. Osborne of Connecticut said if the action was one which should be taken at all it should be taken now.

Dr. A. K. West of Oklahoma said that the work of the Council had been conservative; that its purpose had been to assist, not to break down, legitimate business, and to attack only dishonesty. The recommendation of the committee was adopted by the House.

Dr. G. Lane Taneyhill of Maryland submitted resolutions whose purpose was to divert the contributions thus far made to the Davis memorial fund from the original purpose of a monument and to establish therewith a fund to be used in the encouragement of scientific medical research, thereby establishing a greater and more lasting memorial to Dr. Davis than one of stone. The resolutions were referred to the Reference Committee on Miscellaneous Business.

A resolution adopted by the Section on Obstetrics and Gynecology was presented to the House of Delegates requesting that that body appoint a standing committee to be called the National Committee on Criminal Abortion, whose duty should be to investigate the laws of the United States and of the several States bearing on the matter of criminal abortion and to seek to bring about the adoption of uniform and adequate legislation upon this subject. The resolution was referred to the appropriate reference committee.

Another resolution from the same section recommended to the House of Delegates the advisability of establishing some system of instructing the youth of the country on sexual subjects. Discussion brought out the fact that the Board on Public Instruction favored the presentation of such information only through the attending physician. The resolution was referred to the Board on Public Instruction.

Dr. H. L. E. Johnson of the District of Columbia presented to the House a number of matters bearing on the practice of medicine in the District of Columbia, discussed the need of a general revision of the medical practice act so as to exclude from the practice of medicine in Washington all who were not properly qualified professionally and ethically. He mentioned the effort which had been made by the two chiropractic operators to have established a board of examiners in their art, which effort had so far been successfully checked. These matters were referred to the Reference Committee on Medical Legislation.

Dr. William H. Welch of Maryland called attention to the fact that no action had been taken upon the invitation from the American Association for the Advancement of Science that the American Medical Association appoint two of its members to become members of the Council of the former body. Dr. Welch pointed out that the American Association for the Advancement of Science represented for all sciences save medicine just what the American Medical Association represented for medicine. He therefore urged the acceptance of the invitation. The House thereupon took favorable action.

Dr. L. S. McMurtry of Kentucky presented a resolution endorsing the candidacy of Dr. Charles A. L. Reed for the United States Senate. This resolution was received with much enthusiasm, and was adopted by a unanimous standing vote of the House.

Dr. J. N. Hall of Colorado presented a resolution commending the Public Health and Marine Hospital Service for its services against plague and yellow fever in California and Louisiana, and recommended that the functions of that service be so amplified as to cover all matters which should come within the province of a department of public health.

Dr. W. T. Sarles of Wisconsin offered to the House a resolution adopted by the Northwestern Alumni, at the instance of Dr. John B. Murphy of Illinois, expressing the sense of that body that the time had arrived when a department of public health should be established by the United States Government. This and the preceding resolutions were referred to the Reference Committee on Legislation and Political Action.

On behalf of the Section on Hygiene and Sanitary Science a resolution was introduced recommending that ophthalmia neonatorum should be classed with contagious diseases and so treated by health authorities. The resolution was referred to the Reference Committee on Hygiene and Public Health.

Dr. C. S. Bacon of Illinois presented a resolution providing that the chairman of the Committee on Organization should be associated with the Committee on Medical Legislation and at its request should represent the latter committee in the advocacy of medical legislation before various legislative bodies during the ensuing year.

Thursday, June 4—Fourth Day.

Election of Officers.—The following officers were elected: *President,* Col. Wm. C. Gorgas, U. S. Army; *First Vice-President,* Dr. Thomas Jefferson Murray of Montana; *Second Vice-President,* Dr. John A. Hatchell of Oklahoma; *Third Vice-President,* Dr. Thomas A. Woodruff of Illinois; *Fourth Vice-President,* Dr. E. N. Hall of Kentucky; *General Secretary,* Dr. George H. Simmons of Illinois; *Treasurer,* Dr. Frank Billings of Illinois; *Trustees,* for the term ending 1911, Dr. Wisner R. Townsend of New York, Dr. Philip Mills Jones of San Francisco, and Dr. Wm. T. Searles of Sparta, Wis.

Atlantic City was selected as the place of meeting in 1909.

SECTION ON ANATOMY AND SURGERY.

Tuesday, June 2—First Day.

Local Applications in Surgery.—Dr. James E. Moore of Minneapolis read this paper. Most wounds healed by the unaided efforts of nature. Local applications had for many years been used without proof of their usefulness. A failure on the part of the profession to accord to nature the credit for cures which they unjustly ascribed to themselves and their medicaments had done much to encourage and justify in the eyes of the public at least the developments of such cults as Eddyism, Dowieism, etc. Even the value of dressings had been greatly overestimated. Too much meddlesome surgery had been practised in the case of suppurating wounds. Irrigations, even if unirritating, tended to stop the development of granulation tissues. Ninety-five per cent. phenol followed by alcohol in two minutes was the best treatment. The use of heat and cold had been much abused. Misplaced faith in local applications as a substitute for operative intervention had lost many precious lives.

Dr. H. A. Royster of Raleigh said he believed that there were certain well defined uses for local applications which were shown to be free from harm.

Dr. Ochsner of Chicago said that the value of most harmless applications lay in the fact that they kept the applier from doing something worse. Whatever benefit might be ascribed to them undoubtedly came from rest and hyperemia.

Dr. J. B. Murphy said that stress should be laid upon the desirability of leaving wounds alone, there being no worse instance of the failure of doing so than the milking of abscesses.

Dr. R. F. Weir of New York said that wounds required rest and cleanliness. Personally he said that he considered painful swellings required for their successful treatment

moisture and heat. It might not do good for the inflammation but it helped the tingling nerves.

Dr. A. B. Bevan of Chicago could not agree with the German pathologists as to the entire uselessness of bland washes. He thought that wet dressings improved the drainage and gave comfort. He was also coming to the occasional use of ointments for the relief of pain.

Dr. Jackson of Kansas City said that the prime element in moist heat was not its hyperemic action but the fact that it exercised a selective static action upon the lymphatics. This could be proved in a homely way by the fact that the first action of heat upon the skin was to blister. Heat produced in other words an outward flow of lymph. Heat was an emphatic phenomenon and was therefore indicated in infections but contraindicated in contusions.

Bier's Hyperemia.—Dr. J. F. Binnie of Kansas City read this paper. He said that granulation tissue was the first element in resistance and that hyperemia was the second. Prolonged research had given him much faith in the Bier's treatment and the results were gratifying. An important point was that the suction of the cups should not be sufficient to cause stasis. Formerly the pain of inflammatory swellings was supposed to be due to the mechanical stretching of the tissues. The fact that Bier's cups stopped it suggested that pain was due to the high specific gravity of the exudate. The specific gravity of the pus in an acute abscess was very high while that of the pus in a so-called cold abscess was not very different from that of plasma. This further suggested that pain was largely due to the difference in specific gravity.

Dr. M. G. Seelig of St. Louis said that cups were less dangerous and more successful than tourniquets.

Dr. Eisendrath of Chicago said that the Bier treatment was particularly successful in certain forms of acute arthritis. In tuberculous arthritis the results were equally good. In acute streptococcic infection the treatment had little effect. It had, however, a profound effect upon the healing of fractures, and lastly it was of distinct value in preventing infection after crushing injuries.

Dr. J. B. Murphy of Chicago said that Bier's treatment had been too little used and too often misused.

Wednesday, June 3—Second Day.

Lantern Slide Demonstration of Cranial Operations.—Dr. Harvey Cushing of Baltimore read this paper. It was not so long ago, he said, when the physician as the man of skill and intelligence directed the surgeon who was then simply the artist who could handle a tool. Modern surgery had done much to change this, and indeed in the commoner forms of surgery the great surgeons were all great diagnosticians. Cranial surgery was as yet in process of evolution. Until now it had occupied a position very similar to that held by old-fashioned abdominal surgery—the neurologist had furnished the brains and the science while the surgeon furnished the mechanical skill and art. A great change was taking place in that the neurologist of the future would of necessity no longer be a mere diagnostician but a neurological surgeon. As to the technique of cranial operations it was well known that the cardio-respiratory centers in the medulla were often impaired functionally by intracranial pressure. Some operators had advised the use of rectal anesthesia, but there had been elaborated at the Johns Hopkins Clinic a very complete method whereby all possibility of infection was done away with, the ether being given in the ordinary manner. Decompression operations done intermuscularly through the temporal muscle were proving satisfactory in two very important ways. Allowing as they did the protrusion of a large amount of the silent area of the brain, they gave in the first place not only relief from pain but allowed of restitution of functions subverted from the normal by intracranial pressure. At first it was thought that all one could hope for from the decompression operation lay in the mere palliative and temporary relief, but now that some of these operations had been done a considerable length of time ago it was beginning to be observed that a second and equally important outcome was to be expected of decompression in certain cases. Already there were returning to the hospital a number of decompression cases in which primary operations has permitted a hitherto unlocalizable tumor to develop sufficiently to give rise to definite focal symptoms. This diagnosis, now easy, was impossible at the time of the primary operation. A secondary operation enabled the successful removal of the growth. He called attention to the great danger of lumbar puncture in cases of brain tumor situated below the tentorium. After removal of the water pressure tumor pressure crowded the medulla down into the foramen magnum, and in one case at least so harshly as to stop the functions of the medullary centers and cause death.

Dr. Frank Hartley of New York City read a paper on the same subject. He demonstrated the special instruments which he was in the habit of using and in particular the direct-acting circular saw. This was capable of complete sterilization, and in the hands of one familiar with it proved a valuable addition to the armamentorium of cranial surgery. He then demonstrated by lantern slides the various bone flaps which he had found of practical value in entering the skull, and showed also the method of localization which he had found most constantly satisfactory.

Dr. C. H. Frazier of Philadelphia read another paper in which he considered the vertical position of the patient both as regards the control of hemorrhage and as facilitating the approach to the part as a point of great technical importance. He showed a great number of photographs of patients upon whom decompression operations had been done and stated that he felt reasonably sure that the release of pressure afforded by this measure might in some cases hasten and in others retard tumor growth. In one photograph shown the decompression tumor had grown at such a rate as actually to burst its bounds.

Intracranial Complications of Ear and Nose Diseases.—Drs. James F. McKernon and C. G. Coakley of New York City presented this paper. Dr. McKernon said that there was a very distinct classification of the complications in the order of their recurrence. By far the most frequent was pachymeningitis, epidural abscess being a close second. As to the symptoms, headache, which was exaggerated by exercise, was suggested, but the diagnosis was rarely made until the time of operation. The treatment consisted of the removal of all diseased bone. He regarded the differential blood count as very important; the leucocyte count furnishing only an index of the patient's resistance. Blood cultures he regarded as the most important of all laboratory aids to diagnosis and believed that this method would soon surpass all others.

Dr. Coakley said that cases of intracranial complications arising from rhinological lesions were very rare. There were three paths by which it was possible for infection to reach the brain from the nose and accessory sinuses, viz., by the blood-vessels, by the lymphatics, and by direct necrosis of the bony walls. Out of 200 cases he had observed but three in which the posterior walls of the frontal sinus were involved. The inferior wall, however, not infrequently suffered considerable bony destruction. In the ethmoidal cells there were three types of disorders, viz., suppuration, polyp formation, and cysts. One reason that the literature on the subject was so meager was because cases of painless sinus infection were not as a rule regarded either by the laity or by physicians as in any way as serious as a similar lesion occurring in the ear. Furthermore, the nasal cavities communicated with that portion of the encephalon which lay in the interior fossa of the skull. Not so the ear which communicated with the middle and posterior fossæ. It was well known how much damage could be done to the interior portions of the brain without symptoms and also how little could be done to the middle and hinder portions without serious symptoms at once

arising. As to operative technique, he preferred the so-called ethmoidal route which enabled one to work parallel to the floor of the cranium, as it seemed much safer than the maxillary route. The operation in acute cases should permit of absolutely no delay.

Dr. J. B. Murphy of Chicago said that ligation of the external carotid in middle meningeal hemorrhage would often be a life-saving procedure. The closure of the foramen of Magendie had a very important bearing upon atrophy of the optic nerve. It was possible to resect a V-shaped piece of the velum and reestablish the opening.

Dr. Jansen of Germany corroborated Dr. Coakley's findings, stating that in 1,200 cases of rhinological lesions only three developed meningitis, and in the entire series there were no cases of brain abscesses secondary to the nasal trouble.

Dr. Willy Meyer of New York said that the occipital fossa tumors were chiefly under discussion, and that it was gratifying to learn that so much progress was being made in the technique for successfully reaching the region, because of all tumors these were the easiest to localize on account of auditory and facial nerve involvement.

Dr. Robert F. Weir of New York said that from 1875 to 1880 he had entered hopefully and enthusiastically upon this field of surgery. At the end, however, of six years of discouraging failures he gave up cranial surgery, concluding that his energies might better be spent elsewhere. Most of the lesions seemed at that time to be either tuberculous or malignant. Three things of value were handed down from this period of work, viz., the rubber band for scalp compression, the celluloid plates, and the decompression operation.

Dr. Cushing said that the work was new and difficult to discuss. Some points, however, were sufficiently well fixed to justify great encouragement and hope for the future. What was to be done inside the skull case seemed to him of much greater importance than the mere technique of effecting the entrance. To this end a thorough knowledge of neurology was absolutely essential in those attempting to do cranial work.

Dr. Frazier said that the technique of operations for post-tentorium lesions was not yet evolved. The two-stage method of operation had evidently been abandoned. He warned against the danger of decompression operation taking place in injudicious hands of indicated radical tumor removal.

Observations on the Thyroid and Parathyroid.—Dr. Herman Tuholske of St. Louis read this paper. He said that even to-day certain authors still maintained the morphological and functional entity of these two glands. The vast mass of modern observations, however, forced one to the belief that they were separate entities and a part of the general glandular system of the body. It had been observed that if the thyroid veins were tied in dogs the glands, at first swollen, eventually underwent a certain amount of atrophy. Acting upon this observation he had ligated the veins in a man the subject of violent exophthalmic symptoms.

Dr. Charles Mayo said that living pathology, thanks to modern technique, could now be studied. The circulation of the thyroid was the most perfect of all organs save the brain. All glands had an associated function, the hormones being the interglandular messengers. The preservation of the parathyroids did not seem to him as vitally important as certain observations would lead one to think, because in over 700 operations upon the thyroid no case of tetany had as yet developed.

Dr. A. J. Ochsner of Chicago said that the problem relating to the surgery of exophthalmic goiter resolved itself into an interpretation of the double question, when and how. The two important technical points were to minimize the trauma and the shock.

Decapsulation of the Kidney.—Dr. Samuel Lloyd of New York read this paper. Chronic nephritis, he said, was always to be treated by decapsulation. The functional activity of the kidneys was always increased by the operation, and in about 33 per cent. this improvement was permanent.

The Diagnosis at Operation Between Chronic Ulcer and Cancer of the Stomach.—Dr. F. B. Lund of Boston read this paper. Even with the abdomen opened there were many cases of indurated ulcer of the stomach in which differential diagnosis between benign and malignant conditions was impossible. There were cases in which diagnosis of early cancer was important because it enabled thorough removal. There were, broadly speaking, two classes of cases. The first included indurated ulcers which were movable and which might be benign or malignant. In this type, even if benign, gastroenterostomy was often useless, partial gastrectomy being indicated. Indurated ulcers of the pylorus often extending from the duodenum and adherent to the pancreas or left lobe of the liver, formed the second class. These were usually benign, excision was difficult, gastroenterostomy was safe. In the first class excision should be done regardless of laboratory findings. In the second these were important and usually reliable.

Ulcer of the Duodenum.—Dr. William J. Mayo of Rochester, Minn., read this paper. Duodenal ulcer had been shown recently to be more frequent than gastric in a percentage ratio of 69 to 31. The difference in the sexes was marked, 77 per cent. of duodenal ulcers occurring in males, and 23 per cent. in females. The contents of the duodenum were relatively sterile. This might account for the fact that although there was a high percentage of perforations in duodenal ulcer the death rate was low. The perforating ulcer was divided into acute, subacute, and the chronic. The latter comprised more than one-half of the total number. The general operative mortality was 2.8 per cent.

Dr. A. H. Ferguson of Chicago said that as a rule diagnosis was made at the time of the operation; that abdominal surgery had now reached such a point of development that all patients having definite gastric symptoms should be explored early.

Dr. Parker Syms of New York emphasized the importance of early diagnosis and of early operation. He gracefully admitted the value of gastroneterostomy as practised by Mayo, but suggested that the views of Rodman as to the conservative use of the more radical operation, pylorectomy should be given more than passing heed.

Dr. N. B. Leggett of New York demonstrated a series of experimental gastroenterostomies which had been made on dogs at the Surgical Research Laboratory at Columbia University. These dogs had been fed a string to which a BB shot had been attached, the other end being made fast in the pharynx. A lantern-slide exhibition demonstrated the courses which these strings might take. They might obviously go in one of four directions, viz., through the pylorus and on into the gut; through the pylorus and back into the stomach, a direct cycle; through the stoma and on into the gut; through the stoma and back into the stomach again *via* the pylorus, a retrograde cycle. The position of the stoma, whether at the most dependent portion of the stomach or near the pylorus, had no practical effect upon the frequency with which it was used. About half the strings passed through the stoma, the other half through the pylorus.

Dr. Mayo said that, as Dr. Leggett had shown, the mere doing of a gastroenterostomy without first making a surgical diagnosis might do great damage to the patient. He emphasized the need of early operation and said that no form of medical treatment would ever cure a pylorus contracted from ulceration.

The Surgical Diseases of the Pancreas.—Dr. John B. Deaver of Philadelphia read this paper. He spoke of the pathology of chronic pancreatitis, stating that infection was the most important point in the etiology of pancreatic disease.

Pancreatitis in Its Relation to Gallstone Disease.—

Dr. W. D. Haggard of Nashville read this paper. The pancreas was involved in 6 per cent. of all cases operated upon for disease of the biliary passages. Eighty per cent. of all pancreatic diseases were the result of or coincidental with gallstones. The head of the gland was invoked seven times as often as the entire gland. Nearly two-thirds of the common bile duct was surrounded by the head of the pancreas. Swelling of this probably caused most cases of obstructive jaundice.

Is Death in High Intestinal Obstruction Due to the Absorption of Autotoxic Glandular Secretions?—Dr. J. W. Draper Maury of New York read this paper. He detailed a series of experiments which had been conducted during the past year at the Surgical Research Laboratory at Columbia University. The experiments had been made on dogs under ether anesthesia. Obstructions in the oral portion of the small intestine had given certain interesting results. The twine triangular ligature had been used to create a potential gastroenterostomy, and this gave in all cases drainage of the stomach in a uniform average time. Obstruction oral to the papilla to the vater did not kill the animals whereas obstruction just aborad to it did kill them. If the obstruction were made 35 cm. aborad to the papilla the animals would live. If the obstruction were made within the first 35 cm. just referred to and if in addition the bile were shunted by cholecystenterostomy, the common bile duct being cut and ligated, the animals would live. What was there in the length of the intestinal loop which saved the dog? What relation if any did the bile bear to the fatal outcome? Did a longer loop admit of certain detoxicating changes to take place? Was it perhaps true, as Mr. Moynihan had suggested, that the bile in itself was not the lethal agent? The studies of the essayist had opened up the question of metabolic changes in the alimentary canal to which attention had not previously been directed.

Dr. Arthur Bevan of Chicago advised the early exploration of the gland under gas anesthesia.

Dr. Rodman of Philadelphia said it was clear how difficult it was to differentiate the various lesions of the stomach even after laparotomy. Pylorectomy was often indicated but there was an element of danger in removing the gall-bladder because it afforded the only known channel for biliary drainage.

The Report of a Case of Chronic Peritonitis with Complete Obstruction Caused by Numerous Transverse Constrictions of a Previously Undescribed Character Throughout the Intestine.—Dr. M. F. Porter of Ft. Wayne, Ind., presented this case. He said that the intestine was found at operation to be covered by an organized false membrane which did not constrict the bowel, but which shortened it 80 per cent. The lumen was obstructed by infolding of all the coats. The etiology was in doubt, possibly the condition was the result of typhoid fever. No similar case had been recorded.

Dr. William H. Welch of Baltimore discussed the pathological findings of this rare case in detail and demonstrated the gross specimen.

Thursday, June 4—Third Day.

Artificial Respiration in Its Physiological Aspects.—Dr. Edward A. Schäfer of Edinburgh, Scotland, read this paper. He said that Benjamin Howard of New York, in 1868, was the first to publish any important statements on artificial respiration. Even at that early date it was pointed out that the reestablishment of the function depended upon the elasticity of the chest walls, and that this was particularly true in the resuscitation of the drowned. The position recommended at that time was practically the same as had been in vogue ever since, viz., with the patient supine and with the tongue dragged forward. Sylvester, who came later, had materially aided the subject, and frequently combinations were used of the two methods. The objection to them, however, was manifest, the principal one being that the patients were not prone, and, therefore, were not in suitable position to get the water out of the lungs. He was Chairman of the Royal Commission appointed to investigate the subject, and as a result of the many experiments studied by this Commission, with special spirometers and other forms of appliances, a very definite conclusion had been reached. It was this: That all patients upon whom attempts were to be made to produce artificial respiration should invariably be placed upon the belly. Pressure should then be made upon the loins and upon the lower ribs, the operator squatting or kneeling beside the patient. The operator's hands should be placed over the region referred to, the arms held rigid, and all the pressure derived from the forward and backward swaying of the body of the operator. For an adult, about sixty pounds pressure ought to be employed. The essayist presented a chart which showed the results of comparative experiments with all the known methods now in vogue, and showed that all except the prone pressure system caused a respiratory interchange that was insufficient. With the prone pressure method, an interchange amounting to several hundred cubic centimeters more than the normal interchange could easily be effected. This was a very far-reaching and important conclusion, and after it was brought to the attention of the authorities, steps were immediately taken to demonstrate the method before the accredited agents and instructors of the Royal Life Savings Service, and the prone pressure method was now in use throughout the United Kingdom for all cases of drowning.

Surgery of the Thoracic Cavity; Sauerbruch's Method of Preventing Pneumothorax.—Dr. F. Sauerbruch of Marburg, Germany, read this paper. He said that in his first experiments he had made use of positive pressure, but early in the work had come to the conclusion that negative pressure had many points to commend it. A very small amount of anesthetic was necessary, and no disturbance of any kind followed the opening of the chest wall. This was important in itself for delicate surgical work, even though it had been noted by many that in man at least, and certainly in an adult, one side of the chest could be opened without mortal danger. It was of great advantage in lung surgery to have the lung in normal motion, as it prevented suction of foreign matter into distant parts of the lung at the time of operation, and allowed of a coaptation of the lung to the side of the chest after operation without difficulty. He said that in cases of bronchiectasis, if not multiple, there was hope of cure by operation in the cabinet. He spoke of the rarity of carcinoma of the lung, and reported one case. As to the surgery of the thoracic esophagus, he said that he believed it had a brilliant future. His experiments showed that it was necessary to utilize some form of mechanical contrivance to coapt the surfaces, because, no matter how applied, stitches would leak. He said that a great many surgeons considered there was but little use for any form of apparatus designed to further the work upon the chest cavity, partly because the occasions for it were not frequent, and partly because one side of the chest had frequently been opened and reasonably good work done without any artificial pressure apparatus. He said, however, that unquestionably as the surgery of the part improved, and as more exploratory thoracotomies were done, the field would broaden with the increase of our knowledge of the subject. He demonstrated a very beautiful negative pressure cabinet, which was about 5 feet high by 5 wide by 6 long, which he had used for experimental purposes. The cabinet for operating upon the human beings was somewhat larger. This experimental cabinet was, however, a perfect model of the larger one, and of the large cabinet, twelve were now in successful operation in the German clinics.

Artificial Intrapulmonary Pressure; Application to Surgery of the Lungs.—Dr. Samuel Robinson read this paper. He said that there were obviously great objections to the use of a cabinet such as Professor Sauerbruch had

just described, and with which, as all who were at all conversant with the subject, knew he had done the most remarkable pioneer work. And for this work, the entire surgical community of the world should ever remain grateful, whether or not the positive or the negative pressure methods were eventually found to be the most practicable. From his own standpoint, the positive pressure had seemed to offer the greatest chances of the solution of the problem, and it had been in use in all the research work done at Harvard University. He had used the modification of the well-known method of Brauer, and was able to report that no fatalities could be attributed in their series to the use of the positive pressure. The fear of artificial emphysema, he thought, could now be justly considered groundless, because, after careful search for this lesion, none had been found. Indeed, it was of a difficult matter to produce it with a properly regulated overpressure apparatus, and nothing but the very grossest carelessness could produce this result. The various blood pressures had been studied, and they showed no variation if there was a properly adjusted air pressure. He considered the presence of an abundant air vent very essential in completing the flushing out of the alveoli of the lung. He showed a series of beautiful photographs, one of which showed the use of a pneumatic glass cone to cover the thoracic opening, and spoke of its application in case of removal of positive pressure apparatus.

Artificial Intrapulmonary Pressure; Application to Surgery of the Esophagus.—Dr. Nathan W. Green of New York read this paper. He briefly reviewed the literature of the subject, and referred to the classic work which had been done by Dr. Sauerbruch. He said that, so far as operations on the thorax were concerned, it was necessary only to apply a difference in pressure amounting to about 7 mm. of mercury. How this was applied seemed to the essayist of relatively little importance. It was hardly essential whether the pressure was a negative or a positive one. The practical point in the surgery of the chest was to find some easy method of obtaining the difference in pressure and of applying it. The work which he reported was done at the Surgical Research Laboratory of Columbia University, and all the experiments had been conducted with a positive pressure apparatus. He had not used any modification of the Brauer box, but had introduced the positive pressure, which, of course, was of an intermittent kind, directly into the lungs by an intralaryngeal tube. He said that unquestionably one of the most important factors favoring this method of applying the difference in pressure already referred to lay in the fact that, if for any reason the respiratory acts of the patient became lessened or ceased altogether, owing to any cause whatsoever, the patient could be resuscitated by the simple use of air unmixed with anesthetic. He spoke of the necessity of an uninterrupted pressure circle in coapting the serus surfaces of organs within the thorax, and stated that this was particularly true of any intrathoracic esophageal work. He agreed with Sauerbruch that stitches were of little avail in this sort of surgery, and that a mechanical device or appliance of some kind was necessary. Whether this increased difficulty in obtaining freedom from leakage after section of the thoracic alimentary canal depended upon the pumping motion of the diaphragm, or as was more probably the case, upon the negative pressure in the chest, or possibly upon inherent lack of cohesive power of the chest organs as compared with those in the abdominal cavity, these were subjects as yet to be worked out. He had done two types of operations upon the esophagus, viz., section and infolding of its termination with a transplantation of the end to another region of the cardia, which was brought up through an opening in the diaphragm, and a sidetracking operation, which left the normal orifice patent, and united the cardiac portion of the stomach to the esophagus above the opening. He said that particular care should be taken in securely fastening the stomach to the margins of the opening into the diaphragm, because failure to do this might result in a fatal prolapse of the abdominal viscera into the chest.

Dr. George Crile said that great credit was due Professor Schäfer in introducing this most rational and desirable method, and he believed that many lives, which would otherwise be lost by the older methods, would now be saved. He said that the effect of a small amount of air in resuscitating was wonderful. He said that, according to results obtained by studies in the Research Laboratory at Cleveland, excessive intrapulmonary pressure might give sudden death unless there had been an overtransfusion of blood prior to its application. This question of overtransfusion in cases of marked anemia was also being studied.

Dr. H. H. Janeway of New York said that he had experimented with both the negative and the positive pressure methods, and had found them equivalent in results. He spoke first of the extraordinary tendency to infection that existed within the chest, and, second, of the inadequacy of the suture method for intrathoracic work. He likened the intrathoracic conditions to an inverse Biers cupping device, and said that in his experience infection was almost certain to follow clean operative work in the chest, owing to this negative pressure. He had tested anastomoses made in the intestines with segments removed from the body and hung under hydrostatic pressure. He confirmed Dr. Sauerbruch's results as to the necessity of utilizing a button. He spoke of a modification which he had suggested might be applied to the Green intrathoracic button, which consisted, first, in covering the needle points by an elongated floating ring, and, second, by a broadening of the knives, so as to get immediate drainage. He showed photographs of the modification of the Brauer box, which he had used at the Surgical Research Laboratory of Columbia University, and drew attention to the electric lights in the box, which served the double purpose of lighting it and of warming the respired air. This he considered a very important point, because through its use, and also with the agency of an electric pad, which was applied to the outer surface of the body, a dog's temperature could be maintained throughout an intrathoracic operation of several hours' duration at a normal temperature of 101°.

Dr. Willy Meyer of New York spoke of the clinical side of the intrathoracic surgery. He said it was hard to discuss the subject, because it was still in its infancy, and only very crude work had been done clinically. There were very great technical difficulties in the development of this portion of the body, which was the last for the surgeon to invade. He thought that, although up to date the positive pressure method had been used by experimenters very largely in this country, there were great advantages in the negative chamber which Sauerbruch had devised.

Dr. Fell demonstrated that the familiar device which is associated with his name, and gave a history of a number of cases in which he had employed it continuously for artificial respiration extending over several days.

Dr. Smyth of New Orleans demonstrated the positive pressure appliance, which, in conjunction with Dr. Matas, he had elaborated at the Surgical Research Laboratory at Tulane University. He applied the overpressure through a laryngeal tube. There were two points of great importance in connection with this apparatus. The first, for which Dr. Smyth himself was personally responsible, and to which he had called attention several years ago, was the very ingenious application of a sliding valvular device attached to the cylinder of the pump. This rendered it possible to regulate the amount of air to be given from 1 to 800 cubic centimeters, and constituted the important, mechanical side of the apparatus. The second important point about this most admirable and convincing affair lay in its extreme portability. This was particularly marked

when contrasted with the more elaborate appliances which had been described by previous essayists. It could be packed in a very small valise, and the pump could be run by any one of ordinary intelligence. It was further arranged by a very simple device, so that either ether, chloroform, air, or oxygen might be employed alone or in conjunction.

Dr. J. B. Murphy of Chicago said that it was not the pneumothorax which did the harm, but the absence of respiratory exchange.

Dr. Martin Tinker of Ithaca said that for some years he had been in the habit of using a combination of the Sylvester and Howard methods of artificial respiration.

Dr. Sauerbruch, in closing, said that one advantage of the cabinet was that easy access was possible of the anesthetist to the patient. Further, that it should not be forgotten that healthy dogs had been used in the positive pressure work, and not sick human beings. That eleven dogs out of twelve, which had undergone esophageal resection, had recovered.

Dr. Robinson, in closing, said that he hoped in the next two years some simple form of apparatus would be devised which would further the surgery of the chest. He believed that some form of low-pressure apparatus would prove to be the thing of the future. Dr. Green, in closing, said that he agreed with Professor Schäfer that a small dose of atropine would be very valuable. The mediastinum was very movable in dogs and also in children. The rhythmical inflation of the lungs was a very necessary and valuable factor in his opinion favoring the intermittent positive pressure method.

The Surgical Importance of the Cervical Ribs.—Dr. John B. Roberts of Philadelphia said that the cervical ribs were probably very common, but that those which produced symptoms were relatively uncommon.

Dr. J. C. Stewart of Minneapolis said that an important factor in the recognition of cervical ribs lay in their tendency to elevate the scapula and slightly broaden the base of the neck. Every case of brachial neuralgia ought therefore to be subjected to the *x*-ray.

Dr. Brophy of Chicago demonstrated a number of patients upon whom he had operated for the cure of cleft palate.

Report of the Anesthesia Commission.—Dr. J. G. Mumford of Boston read this in abstract. He referred to the work which was in progress and the methods which the commission was employing in classifying its studies. Up to date, the general conclusion was that for the average practitioner, ether was the anesthetic of choice, although special methods, such as local anesthesia, rectal and spinal anesthesias, etc., certainly had a place in the hands of the skilled man. Nitrous oxide in major work probably had a very bright outlook.

Effects of Normal and Abnormal Variations of Peristalsis on Peritoneal Absorption.—Dr. J. L. Yates of Milwaukee read this paper. It was a final interpretation of studies which had been in progress during his association with Dr. Ochsner. The work had been done on dogs and had been conducted by the use of intraperitoneal injections of lampblack and solutions of snake venoms and normal salt solution. Postural studies had been made. The conclusions were that diffusion depends on physiological and physical phenomena and is restricted by maintenance of physiological inactivity. Morphine may limit it very markedly, soluble irritants are apparently effective, as is lampblack. Solutions spread more rapidly than suspensions.

Intestinal Anastomosis, Presentation of a New and Aseptic Method.—Dr. F. B. Walker of Detroit read this paper. He spoke of the need of cleanliness and demonstrated by preparations the new method. This consisted in tying the gut off, in resecting the part to be removed by the actual cautery, in placing Lembert's, and by the removal of the primary ligature which had been tied in a bowknot.

Gas Cysts of the Intestine.—Dr. J. M. T. Finney of Baltimore read this paper. He said that these cysts were first noted about 1825 in the intestines of a pig. About fourteen cases had been reported since 1876 in human beings. The cysts varied in size from the microscopic form to those about the size of a walnut. The condition was nearly always found when there had been associated circulatory trouble or intestinal obstruction. Careful analyses had been made of the contents of the sacs, but owing to the law of diffusion of gases, these were probably not very authentic. The most rational explanation was that they were a definite form of tumor, the cells of which possessed the ability to create gas. They were noninflammatory and for this reason were scarcely to be attributed to the ordinary action of bacteria. It was noted that the relief of the primary condition often cured the associated gas cysts.

Acute Diverticulitis of the Sigmoid.—Dr. George E. Brewer of New York read this paper. He made reference to an article which he read a year ago on left-sided suppuration. In this paper, he reported six cases of left-sided abdominal infection. Reference was made to a few instances in which these conditions had been found at autopsy, but in no case prior to the author's had the trouble been diagnosed antemortem. This in itself was sufficient proof that the condition was a very rare one. That its fatal outcome was rare was undoubtedly true, but it was rather undoubted that there were a great many cases of diverticulitis which passed for ordinary colic and which recovered in the ordinary course of treatment. He cited the history of a case operated upon by his associate, Dr. Flint, in which it was possible to diagnose the condition before operating. The diagnosis was greatly assisted by the fact that the patient was an intelligent man who had undergone an operation for a similar condition the year before. It was found impossible at the second operation to remove the diverticulum on account of the breadth of its base and the presence of many adhesions. It was therefore segregated peritoneally. The results were admirable.

Extirpation of the Rectum and Sigmoid for Cancer.—Dr. James P. Tuttle of New York read this paper. The careful study of a long series of cases of this nature was in the opinion of the author the only just means of reaching a definite conclusion. He had excluded all cases which had tended to make the report more favorable and felt that the percentages as given were very close to the truth as represented by the present study of the development of the technique. Everything depended on technique and judgment. Age was unfavorable for immediate results but most favorable for common recurrences. The site of the disease was most important. He did all his work through the perineal route, now having come to the conclusion that for small-handed people this was preferable to any other. He regarded the use of the Fowler position as confirmed. Pain was rare unless the margin and the skin was involved. Constipation was likely to be the cause rather than the effect of the carcinoma. Twenty per cent. of his cases were incontinent.

Dr. E. W. Andrews said the results in Dr. Yates' cases were conclusive. We were on the right track surgically when we invoked the aid of gravity in abdominal drainage.

Dr. A. J. Ochsner said that although twenty years of important clinical observations had been made, these must all be corroborated by animal experimentation. He considered Dr. Yates' contribution as exceedingly important and as corroborating his own clinical theories. As to the importance of Dr. Walker's technique, he said that patients died of conditions which were more often preoperative than those which resulted from soiling at time of operation.

Dr. Gregory Connell said that the necessity still existed for important technique in abdominal work. He thought that through-and-through stitches were necessary for strength, although the nominal absence of peristalsis

following for six hours after operation afforded ample time for sero serus union to take place.

Dr. Ransohoff of Cincinnati said that hemorrhage constituted the greatest danger in abdominal gunshot wounds.

Dr. Wathen of Louisville, in discussing Dr. Finney's case, said that it was certainly a pathological curiosity. These gas collections were usually associated with a palpable tumor.

Dr. Finney said that Dr. Welch would not commit himself as to the character of the tumor. An interesting point about it was its very wide dissemination.

Dr. Eisendrath said that we were indebted to Dr. Brewer for first calling the attention of the surgical community to these cases of diverticulitis. The chronic form was the common one and all were frequently associated with stenotic conditions.

Dr. Truesdale of Fall River, Mass., said that a vaccine virus from the colon bacillus had been used very satisfactorily to combat severe peritoneal infections due to this germ.

Dr. McArthur of Chicago said that he felt much encouraged by Dr. Tuttle's paper.

Dr. Evans of Dayton said that after hearing Dr. Tuttle's paper he believed that every case, even if apparently hopeless, should be operated upon. He advised the transplantation of the levator muscles.

SECTION ON PRACTICE OF MEDICINE.

Wednesday June 3—Second Day.

Dr. C. F. Hoover of Cleveland in the Chair.

High Arterial Tension of Nervous Origin; Diagnosis, Consequences, and Treatment.—Dr. Louis Faugères Bishop of New York read this paper. He said this form of high arterial tension resulted uniformly in an elevation of the blood pressure through increased output of heart energy. The origin of the hypertonia of the arteries was found in an increase in the natural tone of the involuntary muscles in the median coat of the blood-vessels. The condition was diagnosed by the high reading of the sphygmomanometer and the exclusion of sufficient causes outside of the brain. The recognition of hypertonia vasorum as the origin of these cases led to hopeful and successful therapeutics. Drawings were shown of hypertonia vasorum in arteries in which the various lesions were diagrammatically represented. The importance of a quick method of determining blood pressure so that all cases could be examined just as the pulse was felt, had led him to devise a hydrostatic instrument whereby he could quickly apply water pressure to the brachial artery to ascertain the pressure required to stop the pulse wave. This was what he termed a blood pressure detector. This instrument had already been described in the Medical Record. The treatment consisted in the hygienic modification of the pathological physiology and he suggested the principles upon which it might be successfully carried out. Every case should be treated upon its merits, and it was of the utmost importance that the physician should be in complete command and not only be an occasional advisor. The points he wished to emphasize were the immense clinical importance to the physiological element in cardiovascular disease, and its susceptibility of early recognition and successful treatment.

The Factors in the Estimation of Blood Pressure.—Dr. Joseph Eichberg of Cincinnati said that the first factor in the interpretation of blood pressure must be a satisfactory instrument; it should be of service for general work, be portable, quick of adjustment, and accurate, and these qualities were possessed in eminent degree by the tonometer of Recklinghausen. It did not detract from the achievement of Riva-Rocci that later modification had improved the technique. A notable advance in the Recklinghausen apparatus was found in the pump, and its ability to measure both systolic and diastolic pressures. The Erlanger instrument was suitable only for hospital or office use. The tonometer of Recklinghausen was the only instrument thus far devised that conveniently gave both data with certainty and promptness. The quantity and viscosity of the blood necessarily influenced the blood pressure. The most important factor in the control of the blood pressure was the nervous system. Passive movements, except those causing pressure on the thorax or abdomen might be performed for a long time without increase of pressure. Dyspnea increased the blood pressure very materially, not only in the acute suffocative conditions, but dyspnea of long standing. Contrary to what might be expected, acute infectious diseases had but little influence on the blood pressure. There had been found in typhoid fever cases a hypertension increasing with complications, parallel to the severity of the disease and to deepening intoxication. It should be remembered that hypertension, however, was not a disease. The general assumption had been that hypertension was in itself very dangerous, inasmuch as it led to alteration of the vessel wall, possibly to rupture, or induced cardiac hypertrophy and subsequent dilatation, so that in every case they should resort to baths, iodine compounds, and nitrites. This view was strongly combated by some. Many agents reduced the blood pressure. Warm, effervescent baths were of signal value. The functional capacity of the heart was increased by combining the baths with exercise. The effect of iodine in arteriosclerosis was perhaps to be explained by the control which it exercised over the polycythemia, and by reducing the viscosity of the blood, rather than to any influence on the anatomical change. It was, however, in the direction of prevention that they should most earnestly apply their efforts. He said the following conclusions seemed justified: (1) The routine interrogation of the blood pressure should constitute part of the regular examination of each case. (2) Both systolic and diastolic pressures were necessarily in the solution of the problem. (3) Systolic values of more than 130 mm. called for further study. (4) The most important feature of the study of blood pressure was found in its behavior under tests with measured amount of work. (5) Increase of blood pressure was often conservative, and then called for no interference. (6) A pressure that was at all times above normal might be the only, as it often was, the earliest, evidence of arterial sclerosis.

Dr. W. Forest Dutton of Pittsburg said that the study of hypertonic contraction and blood pressure was practically in its infancy, but they had certainly learned a few important facts from their investigations and observations. The etiology of hypertonic contraction readily resolved itself into two great factors or divisions, the influence of the nervous system, and the composition of the blood. He said he was not referring to the mechanical conception which would make the arteries mere elastic tubes, but he was referring to living tissue. He had been recently experimenting with methylene blue, administering it in large doses with marked retention of the drug in the tissues. This manifested itself by a diminished excretion, etc. Owing to disturbances of the renal function, a retention of the drug took place in the tissues. After a saturation of the tissues, every additional dose caused lessened functional activity, and this effect was most apparent in the arteries, causing at once an hypertonic contraction and hyperemia of the renal capillaries, as well as other pathological changes.

Dr. N. S. Davis of Chicago said he was particularly interested in the chart presented by Dr. Bishop because it brought out so distinctly the fact that a highly deseased arterial wall still retained its power of contraction, a fact that at the bedside physicians frequently overlooked. A general thickness with rigidity of the arterial wall was generally ascribed to disease in the arterial wall and not always correctly. Furthermore, many times a diseased wall

had a greater degree of tonicity, or was more easily stimulated to contraction than a healthy arterial wall. Another point referred to the size of the lumen of the artery; when one compressed the artery, to measure the degree to which you had compressed it, one not alone measured the compressibility of the artery's walls, but the pressure of the blood within the artery as well. These were factors that should be borne in mind.

Dr. Arthur D. Hirschfelder of Baltimore said the members of the section were greatly indebted to Dr. Bishop for demonstrating to them his instrument, a very ingenious and simple method for determining the maximum pressure. An apparatus that was portable was much to be desired. The instrument presented by Dr. Eichberg, that of Recklinghausen, was also a useful piece of apparatus but was only a little more pretentious in so far as it attempted to replace the apparatus of Erlanger which had been proven to be an accurate instrument by experimental control on animals. But like all other forms of apparatus which depended upon the spring of steel, it had to be frequently tested because there was only a certain life to its accuracy. It must be reexamined at the shops frequently, or sent back to Germany. Unless these tests were continually made, one could not be quite sure of the proper resistance of the spring. One of the great advantages of the Erlanger apparatus was in testing the variations in the pulse pressure (called by the Germans amplitude); this became a matter of great importance to be able to determine more or less infallibly the point of diastolic pressure; in this the Erlanger apparatus had a distinct advantage.

Dr. I. J. Wolf of Kansas City said he was much interested in what Dr. Eichberg said with regard to the mental influence on the rise and fall of blood pressure. The same phenomenon had been seen by Pawlow in diseases of the stomach; the influence of the mind on the gastric secretions was as great as the influence of food itself. This mental influence upon the rise and fall in the blood pressure was as great as the influence of work. Increase in the blood pressure was often a compensatory act, and then it was dangerous to interfere. For instance, there were cases of Bright's disease, or even arteriosclerosis with an hypertrophied heart; he had noticed a number of such cases that came under his observation with a failing heart and in which men called in consultation advised reducing the blood pressure with nitrites; when used these patients became much worse. It was only by using digitalis that improvement resulted. In these cases of failing heart it was not a question, in his opinion, of whether the blood pressure was 240 or 250; it was a question of what was the blood pressure before he was seen by the doctor.

Dr. Joseph L. Miller of Chicago said he wished to reinforce the statements made that cases of hypertension did not necessarily require treatment. He thought that all would agree that the most frequent cause of hypertension was a nephritis. Arteriosclerosis of the splanchnic vessels was also a cause. The question arose whether lowering the blood pressure in such cases would reduce the elimination from the kidney. There had been a great deal of work done upon this subject, the effect of drugs which lowered blood pressure, and the effect upon the elimination from the kidneys.

Dr. Wright of Akron, Ohio, called attention to the various kinds of pressure, that from business competition, social functions, etc. The modern house to-day had thermometers, barometers, adenometers, clinical thermometers, in fact, a small laboratory for use before the doctor was sent for. He compared the old-fashioned doctor with the doctor of to-day, as well as the farmer of one hundred years ago with the man of to-day. What he wanted, he said, was the old-fashioned doctor who, merely with his finger tips, gained some idea of the blood pressure. But it should be remembered that the old farmer of one hundred years ago was a hard-working man, who had muscles of iron and a constitution of steel, who got his eight hours' sleep, and who read only his weekly newspaper; that condition, however, was a different proposition from what it was to-day. All these things should be considered.

Dr. C. F. Hoover of Cleveland said that there were some cases of Bright's disease in which any attempt made to lower the arterial tension would cause a profound depression; the patients became weaker after the employment of the nitrites. He had seen a number of cases of chronic interstitial nephritis in which the elimination of urine in twenty-four hours was very small; these patients were given diuretin and caffeine without diuresis. Then lowering the tension would be followed by a profuse diuresis. He referred to an experience he had had in which caffeine and diuretin were used without effect until trinitrin was administered, thus lowering the arterial tension. He believed that Dr. Wright's point was good, but the doctor who could learn much of the blood pressure with his finger alone was not yet made.

Some Comments on the Physics of Physical Signs, with Special Reference to the Respiratory Murmur.—Dr. H. D. Arnold of Boston read this paper. He said that those were mistaken who assumed that medicine had already attained the rank of a science, for only a few steps had as yet been made in that direction. Unfortunately our knowledge of physical signs had lagged far behind many other branches of medical knowledge; it was far from deserving the term "scientific," and it had fallen into disrepute which was more or less deserved. One reason for the disrepute of physical signs was that physicians did not train their senses enough to keenness of perception. Again, they failed to fully appreciate that those signs were based on the laws of physics, and they were too often oblivious to the distinction between fact and fancy in their explanations. Recent textbooks on Physical Diagnosis were making some efforts in the right direction, but they were still open to severe criticism because they failed to discriminate between unfounded theories and established facts or well-grounded hypotheses. In order to illustrate these faulty methods he chose the respiratory murmur for consideration, although there were other topics which would make equally good examples.

Dr. Jack of Buffalo, Dr. Sewell of Denver, Dr. Scott of Iowa, Dr. Edwards of California, discussed the paper.

The Clinical Value of the Quantitative Estimation of Pepsin, with Special Reference to the Mette and Ricin Methods.—Drs. Clifford B. Farr and Edward H. Goodman of Philadelphia presented this communication, which was read by Dr. Goodman. In carcinoma ventriculi, achylia, and occasionally in chronic gastritis, the pepsin determination revealed values below the minimal normal, but as a rule in neuroses and chronic gastritis the pepsin was relatively but little affected in contradistinction to carcinoma and achylia, and this would seem to be of assistance in making a differential diagnosis between these conditions. They had found, as had others, that within normal limits there were wide variations without apparent relation to the acidity, but at present they were not in a position to draw and diagnostic or therapeutic conclusions from these observations. The results obtained with the ricin method corresponded with those shown by the Mette method, *i.e.* normal values and subnormal values more clearly shown, but the finer variations were not seen and when present did not correspond with the Mette results. This was true even when they had made allowance for differences in the Mette tubes by means of the controls referred to by them. Both tests were valuable as rough quantitative methods, and were carried out with equal facility. The Mette had the advantage of excluding variations due to differences in acidity without requiring any previous tritration. There had been no attempt to see whether the ricin method followed the law of Schütz, nor had there been any attempt made to bring the various tubes to a uniform acidity. The variation in the acidity of the five tubes seemed *a priori* to be fruitful of grave errors. This could probably have been

obviated by suitable dilutions with HCl, similar to those employed by Nirenstein and Schiff in their modification of the Mette method. These questions might form the basis of a supplementary communication. They had made very little therapeutic use of their knowledge. The wide variations in the pepsin values would suggest that the drug had been too much despised by stomach specialists, although this could not be said of practitioners in general. It would seem to them to be indicated in cases showing subnormal peptic values, with preservation of at least a fair degree of acidity. In chronic gastritis with low acidity and low pepsin, in achylia, and in carcinoma, it would be necessary to add HCl. In many cases it was doubtful if enough acid could be introduced except occasionally with a stomach tube, to allow of normal proteolysis. A practical expedient (Sailer) was to saturate meat or milk, before taking, with dilute HCl until free acid could be detected, after which a small dose of HCl would suffice. Pepsin should be given in sufficient amounts to make a 1-4 to 1-16 per cent. solution in the contents of the stomach—estimated in advance. It should be given with or followed by at least twenty minims of dilute HCl. Both might be repeated once or twice at short intervals to make up for the amount expelled into the duodenum. The normal gastric secretion of the dog, obtained through a Pawlow fistula, had been advocated by Frémont and others in doses of 100 to 500 c.c.

Dr. John H. Musser of Philadelphia, Dr. M. J. Lichty of Cleveland, Dr. Williams of New York, and Dr. Nathan Rosewater of Cleveland discussed this paper.

The Importance of Recent Studies Upon the Circulation for the Practice of Medicine.—Dr. Arthur D. Hirschfelder of Baltimore read this paper. He said that one of the most interesting and important results of physiological study had been the physiological analysis of the irregular pulses, which had led them to divide them into four groups. First, those which, either associated with certain phases of respiration or with meningitis, or in children, neurasthenics, convalescents from febrile diseases, were of neurogenic origin. These were not associated with any cardiac disturbances, disappeared temporarily under atropin, and sometimes disappeared under general tonic treatment, hygienic measures, and strychnine. Second, those due to diminished contractility, shown in the pulsus alterans, and in which, though the rate was regular, each alternate beat was small. This was most common in very rapid pulses and also in some cases of angina pectoris. It always showed that the heart was beating too fast and that its strength was insufficient. Third, they had to deal with the three varieties of heart block at the various sites along that inverted Y-shaped path of Purkinje fibers. Fourth, they had a group of irregularities due to the abnormal impulses, extrasystoles, which might arise either in the auricles, the ventricles, or the His bundle. Ventricular extrasystoles were often brought about by inability of the heart to empty itself. Regularity was then restored by digitalis. At other times there was too great irregularity, and digitalis would only serve to increase the arrhythmia. In paroxysmal tachycardia they also had to deal with a peculiar sudden change of rate, almost doubling and almost halving, sometimes associated with irregularity in the transitional stages but usually perfectly regular. Dr. Hirschfelder then considered the velocity of the blood flow in disease.

Dr. W. S. Thayer of Baltimore and Dr. G. W. McCaskey of Fort Wayne discussed the paper.

The Viscosity of the Blood and Its Clinical Significance.—Dr. G. W. McCaskey of Fort Wayne, Ind., read this paper and offered the following conclusions: (1) The determination of the viscosity of the blood was of distinct clinical value if made practicable for routine clinical use. (2) Approximate determinations were entirely sufficient for the purpose of clinical medicine, as there were considerable physiological variations in the same individual, depending upon the time of day, exercise, digestion, diet, etc. (3) Individual diseases did not change viscosity in any characteristic way except as they incidentally influenced the blood. (4) These changes depended largely on the number and character of the corpuscles, but also on the proteid content of the serum and on certain abstruse and unknown changes, such as those produced by the intravenous injection of the distilled water which curiously enough raised viscosity while normal saline solutions lowered it. (5) The determination should be made promptly before the corpuscles had time to settle. (6) Alcohol immediately raised viscosity whether introduced intravenously or through stomach or duodenum. (7) Accumulation of carbon dioxide in blood either by local or general asphyxia tremendously increased viscosity and burdened the heart. (8) This was immediately relieved to a certain extent by the inhalation of oxygen. (9) Venesection immediately lowered viscosity and the effect was very lasting. (10) Viscosity was influenced by diet and especially increased by the quantity of meat, which was possibly due simply to the increase of proteid, but might be the result of toxic constituents. (11) Viscosity was usually low in clinical Bright's disease, which was due to hydrema, but it was easily possible that there might be a preliminary stage of high viscosity before the clinical features of Bright's disease were produced. (12) The viscosity rose in a general way with the specific gravity of the blood, but there were numerous exceptions, such, for instance, as the high viscosities of fevers with low specific gravity.

Dr. S. P. Black of Pasadena, Cal., Dr. Henry B. Hemenway of Evanston, Ill., Dr. Goodman of Chicago, Dr. Nathan Rosewater of Cleveland, Dr. F. J. Hultgen of Chicago, and Dr. L. F. Bishop of New York discussed this paper.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Tuesday, June 2—First Day.

Dr. Walter B. Dorsett of St. Louis, Chairman.

Chairman's Address: Criminal Abortion in Its Broadest Sense.—Dr. W. B. Dorsett said the subject of his address should concern us, not only as obstetricians and gynecologists, but as citizens of a great republic. In law, no case could be prosecuted unless sufficient evidence was obtained from those who are in possession of it. That the surgeon is in possession of such evidence was known, for he sees every day the dire results of the work of midwives and abortionists. It was useless to expect ecclesiastical intervention. Many young married couples, for financial or social reasons, agreed not to become parents for two or three years after marriage—an agreement that necessitated either efforts to prevent conception, or the induction of abortion. Many of these young women, unfortunately, were relieved of their burden by the fashionable doctor, who readily induced abortion for them, because they were the victims of hyperemesis gravidarum, or because of suppression of menses, or because their urine was loaded with albumin! Any one of these conditions, of course, necessitated immediate abortion. The secular press, with its advertisements of abortifacients, would be slow to respond to a call to aid in the exterminating of the abortionists. Much had been said about the alarming increase of race suicide, but little had been done toward enforcing the laws now on our statute books. It had been estimated that in New York, 100,000 abortions were performed annually, while in Chicago, Dr. C. S. Bacon, in a paper read recently before the Chicago Medical Society, estimated the annual number at from 6,000 to 10,000. From 20 to 25 per cent. of all pregnancies terminated in abortion, and of these, fully half were criminal. The speaker offered some suggestions which he thought, if carried out, would go far toward ridding us of this evil. (1) Medical jurisprudence and medical ethics should be

made compulsory studies in our medical schools. (2) Inefficient laws should be properly amended, or good and efficient laws enacted.

Dr. Martin of Louisville said that in a moral, or in a pathological sense, no subject was of greater importance. From the pathological side it was easily appreciated by surgeons, who saw every day the results of the abortionist. From its moral side, it was repulsive to every honest doctor and citizen. It should not be considered a crime on the part of the woman any more than on the part of the man who performed the operation upon her.

Dr. Carstens of Detroit thought that this was a very difficult subject to deal with. There were laws against murder, still people committed murder; and there were laws against abortion, still people induced abortions. He thought that an important cause was the rapid rise from a lower stratum of society to a higher. Such people had not grown as rapidly morally as they had financially.

Dr. Helen C. Putnam of Providence had worked in the public schools, and had investigated to see what was being done in the matter of education in the physiology and hygiene of sex. Many teachers had expressed anxiety on this point, and a few, trained in biology, were capable teachers of this subject. The children varied in age from eight to fourteen. They were first taught the origin of life in plants and in the elementary animals. Later they were given a frank sex talk, in which the sexual relations of plants and animals were compared with those of the human family. Thus the children arrived at the subject naturally, without shock or surprise. This method, the speaker thought, was more efficient than laws.

Dr. R. W. Holmes of Chicago said that he had presided for three years over a committee on abortion in the Chicago Medical Society. He thought that the public did not want an attack made on abortion, and was convinced that what we needed was not more laws, but the enforcement of those that we already have. A female detective in Chicago visited 223 midwives, 22 per cent. of whom openly agreed to induce an abortion. The percentage was brought up to 33 per cent. by others who were manifestly willing to induce one, but who would not say so openly.

Dr. Abrams of Michigan had spent two years in the legislature of his State. Among innumerable bills which came before the committee on legislation, there was one in which the question was raised whether or not a woman upon whom an abortion had been performed should be considered a criminal. He was shortly called before the judiciary committee and asked whether he favored abortion. The lawyers of his acquaintance all assured him that to make the woman a criminal party would be to destroy all chance of obtaining evidence.

Dr. Henry of Omaha thought that back of the enactment of laws there must be education in the schools and colleges on two subjects—the physical evil of abortion and the moral evil of abortion. For instruction in the latter we should depend to some extent on the clergy, who should be taught that life is present before quickening is felt.

Dr. Denslow Lewis of Chicago endorsed what the last speaker had said on the subject of education. The education of the young in sex relations and in venereal diseases and their consequences was one sovereign duty. The girl must know that conception is apt to follow the sexual act. He felt sure that many girls of from twelve to fourteen years of age submitted to the sexual act without the least idea of the consequences.

Dr. August Martin of Berlin said that all agreed in condemning abortion. It was forbidden by law and by the professional code, but no laws had yet been successful in eliminating it. The German law made trouble by forbidding the doctor who treated the case subsequently to speak on the subject in court unless one of the parties interested gave consent. But unfortunately one of them frequently was no more. Many faults and errors in our profession had gradually disappeared since medical meetings had come to be so widely held and attended, and thus he believed that the frequent discussion of this matter in medical meetings would finally be productive of good.

Dr. Yarrow of Chicago said that the enactment of laws was comparatively easy, but their enforcement was difficult. We could not enforce a law with which the public was not in sympathy. Among the married poor there was very little danger of race suicide—it was the high-born American that must be instructed.

Dr. F. F. Lawrence of Columbus thought that we should never lose sight of the fact that moral problems could not be solved by statutory enactment. The public should be educated to know that a conception meant a human life, and its murder was as much murder as was the killing of the child after delivery. He offered a resolution urging the House of Delegates to attempt the education of the youth of the country by considering the publication of a lay journal.

Dr. C. C. Frederick of Buffalo offered the following resolution: "Resolved, that the address of the chair be referred to a committee, for the consideration of laws now in force, or the possible enactment of new ones. The committee will confer with State committees and with the attorneys general of the various States." Carried.

Abdominal Cervical Cesarean Section.—Dr. J. Pfannenstiel of Kiel, Germany, thought that our results had been better since we had learned to submit to cesarean section only such women as had probably not been infected by frequent examinations, prolonged labor, or attempts at instrumental delivery. In cases where infection had probably occurred, it had been suggested that they be delivered through an incision which did not open into the peritoneal cavity. But these methods were none of them a certain safeguard against infection of the peritoneum. Neither were the attempts to prevent infection of the peritoneum, by an already infected liquor amnii, in the course of the ordinary cesarean section. The author had been trying lately the introduction into the peritoneal cavity during the ordinary section of about 200 c.c. of sterile olive oil. His experience had not been wide enough, so far, to enable him to indorse it. Experiments on guinea pigs, however, had shown the procedure to be free of danger. He would not hesitate to operate on a mildly febrile case transperitoneally, with the use of oil. A technical description of the author's extraperitoneal operation then followed. The advantages claimed for it were that the mortality was diminished, the danger of ventral hernia excluded, and the patients were able to get up on the third day.

Cesarean Section, with Report of Two Cases.—Dr. J. M. Trigg of Shawnee, Okla., read this paper. He showed by statistics that the later in labor the operation was performed the greater was the mortality. He urged early operation on this account. A list of indications for operation, with a detailed description of the technique followed.

Abdominal Cesarean Section as Performed at the New York Lying-in Hospital.—Dr. Ross McPherson of New York read this paper. The indications for operation were given, with an accurate description of the technique employed by Dr. Asa B. Davis. The important points in this technique were, that the incision was made high up in the uterine wall, the uterus was not lifted out of the peritoneal cavity, and no compression was attempted for the control of the hemorrhage. Thirty mothers were lost, but when one subtracted the cases that died of postpartum eclampsia, paraplegia, carcinoma, and other causes, unconnected with the operation, the mortality was only 4.8 per cent. Nine who died of septic peritonitis were all proven by cultures to have had streptococci in the vagina before the operation was begun. These were all cases that had been treated outside before admission to the hospital. There were fourteen still births in the series.

Dr. Martin of Louisville thought that craniotomy on

the living child was no longer necessary. It was more difficult, and destroyed the life of every child and nearly every mother, whereas cesarean section saved nearly every mother and child. He expressed himself as in favor of cesarean section in nearly every case of placenta prævia.

Dr. J. B. De Lee of Chicago thought that there was more danger of peritonitis in abdominal operations on the pregnant woman than in the nonpregnant. To improve our results we must improve the conditions under which the operation is done. If we improved our obstetrics in general also we would save ten times as many children as would be saved by an improvement in operative measures.

Dr. H. D. Fry of Washington did not like the idea of a low incision, because the higher we went in the uterus the smaller the vessels became. He did not want to get his patients up on the third day. In reply to Dr. McPherson, he though vaginal cesarean section more suitable in eclampsia than the abdominal. He disagreed with Dr. Martin as to placenta prævia being an indication for section. He had delivered many successfully by the natural passage.

Dr. Watkins of Chicago thought that hemorrhage in these abdominal operations was due more to interference with the blood supply of the uterine muscles on the part of the clamp, and to a consequent impairment of their contractility than to any other cause. Also, he thought that any undue manipulation of the uterus tended to crowd the clots out of the sinuses. For this reason he did not advocate the removal of the uterus from the abdominal cavity.

Dr. Carstens of Detroit thought the Pfannenstiel operation excellent in a hospital, where the surroundings could be controlled, but only in such a place. He thought there was grave danger of infection through the lymph channels which were opened up in the cellular tissue. Vaginal cesarean section he considered to be the one single operation in eclampsia, for a child can be delivered by this method in three minutes.

Dr. Greene of Rome, N. Y., did not believe that the minor points made any difference. The one great thing was to be sure of the diagnosis and then to operate quickly. "Get in and then get out."

Dr. Frankenthal of Chicago said that he would hesitate to subject any of his patients to the extraperitoneal operation, for he believed that the peritoneum was very easily torn through.

Dr. I. S. Stone of Washington was opposed to the Pfannenstiel operation. He would rather trust the peritoneum to take care of a slight infection than to tear and crush the cellular tissue about the bladder.

Three Procedures for Entering the Abdominal Cavity.—Dr. E. E. Montgomery of Philadelphia thought that the vaginal route was the best in retrouterine collections, for explorations, for the treatment of diseases of the tubes and ovaries, for the discovery of a ruptured tubal pregnancy, or for hysterectomy, especially in very fat subjects. Its advantages were that drainage was better and restoration to health surer, hernia and adhesions being absent. Its disadvantages were that one worked blindly, injuries to the intestine might be overlooked, and extensive adhesions might not be recognized. The abdominal route had the widest application, giving, as it did, ready access to abdomen and pelvis. But there was more discomfort during convalescence, and drainage was not so good. The Pfannenstiel operation was then described in detail. It was convenient in operations about the bladder, especially in fleshy women, the chances of hernia were less, and the scar was obscured by the pubic hair, but the operation had a limited application.

Dr. Herman J. Boldt of New York took exception to the statement that convalescence was more rapid after the Pfannenstiel operation. He had gradually limited more and more the field of utility for the vaginal route.

Dr. R. B. Hall of Cincinnati was in favor of the vaginal route in opening collections of pus that might get into the peritoneum if opened by way of the abdomen. He would limit the application of the vaginal route to the evacuation of acute collections of pus in the cul-de-sac.

Dr. Betz was in favor of the vaginal route only in acute cases for temporary relief.

SECTION ON DISEASES OF CHILDREN.

Tuesday, June 2—First Day.

Dr. Edwin E. Graham of Philadelphia in the Chair.

Chairman's Address: Infant Mortality.—Dr. Edwin E. Graham of Philadelphia delivered this address, which was based upon a statistical study of the subject, and the results were summarized as follows: (1) Gastrointestinal diseases were the principal causes of the high death rate among infants. (2) The greatest mortality occurred during the summer months. (3) The most dangerous period was from the first to the third month of infancy. (4) The mortality was greater among the children of the poor than those of the well to do. (5) Unhygienic surroundings were responsible for a considerable number of deaths among infants. (6) Many cases of infanticide were caused by neglect on the part of the mother. (7) Coroners' inquests were not rigid enough. (8) Race suicide was not a theory but a fact. (9) Alcoholism in the parents was an important etiological factor. (10) Insurance companies and burial clubs increased the death rate. (11) Congenital debility was responsible for about 50 per cent. of the deaths within four weeks after birth. (12) A plea for the encouragement of breast-feeding was urged. (13) Infants' hospitals and day nurseries were upheld.

The Character of the Stools in Diarrheal Affections of Infants, with Special Reference to the Conditions of the Intestine.—Dr. J. H. Mason Knox, Jr., of Baltimore presented this subject. He said that his results were founded upon observations noted at autopsy of 100 fatal cases of diarrheal affections in infants. The macroscopic character of the stools with reference to the presence of blood, pus, and mucus was compared with the lesions found post mortem in the intestinal tract. He epitomized his remarks as follows: (1) Of forty cases noted with mucus in the stools, one-half showed that the lesion was in the small intestine. (2) Presence of blood indicated roughening of intestinal mucosa. (3) Pus alone in the stools pointed to an ulceration of the intestinal mucosa, especially of the large intestine. (4) Blood and pus were more frequently found after second week of illness.

Dr. J. A. Work of Indiana said that he was anxious to know the cause of the diarrheal affections in children.

Dr. T. W. Kilmer of New York believed that some cases of diarrheal affection terminated fatally, and no intestinal lesion was found at autopsy.

Dr. Charles G. Kerley of New York said that membranous colitis in infants showed normal stools, and some cases had terminated fatally.

Dr. A. Jacobi of New York complimented the writer of the paper, and said he wanted to learn something of the etiology, prognosis, and treatment of such cases, and hoped for a subsequent paper on the subject.

Dr. Knox, in closing, said that the cases studied were routine ones, and the children were all under eighteen months of age. He thought the membranous type of colitis was rarely found.

Studies in Infantile Digestion.—Dr. Alfred Friedlander of Cincinnati read this paper, which treated of the adaptation of Einhorn's digestive head method of studying gastrointestinal digestion in infants and young children. He stated that observations were noted in the study of 150 cases. He explained the method carried out in the experiments. Small pieces of various foodstuffs—raw beef, potato, catgut, mutton-fat, sweetbread—were tied

to small glass beads with pieces of silk. The beads were of different colors, and the foodstuffs were placed in small bags of gauze and fastened to the beads. These were administered to the little patient and later recovered from the stools. The mutton-fat was intended to test the fat digestion; the beef, the proteid digestion; the catgut, the fibrin digestion; the potato, the starch digestion, and the sweetbread, the nuclein digestion. The results were favorable in a large number of cases tried, except in case of the starch digestion.

Dr. J. P. Sedgwick of Minnesota suggested that an emulsified fat be substituted for the mutton-fat.

Dr. Arthur W. Fairbanks of Boston said that Dr. Friedlander's paper proved the uselessness of the potato in the dietary of childhood.

Dr. J. G. Allen of Chicago said that the experiments reported ware quite practical and interesting.

Dr. Friedlander, in closing, said that the methods he reported were not conclusive. He thought the substitution of emulsified fat in place of mutton-fat was a good idea.

Rachitic Erosions of the Permanent Teeth Associated with Visual Defects.—Dr. I. A. Abt of Chicago presented this communication, with report of a case. The patient was a boy, age 12 years. The family history was negative. At the age of 2 months he was placed on artificial food. No teeth were erupted until the second year. During the first year he suffered from convulsions. His skull was large and he was mentally dull. Dimness of vision was complained of, and, an examination of the eyes revealed a double lamellar cataract. The presence of the cataracts was partly explained by the fact that during the convulsive attacks the eyes were subjected to severe twitching movements which disturbed the fibers of the lens. The erosions of the teeth were caused by rickets, and were probably one of the sequellæ of that disease.

Dr. R. B. Gilbert of Louisville said that the erosion of the teeth was due to an insufficiency of lime salts.

Dr. J. M. Dodson of Chicago said he had treated several patients with erosion of the teeth and that they recovered on administration of tonics.

Dr. H. M. McClanahan of Omaha believed that rickets had increased among children.

Dr. Martin Wood of Illinois cited a case of pneumonia which showed erosion of the teeth but no signs of rickets.

Curative Effects of Rest in Children with Persistent Loss of Appetite.—Dr. Irving M. Snow of Buffalo read this paper. He said that the child so afflicted was underweight, nervous, petulant, and quickly fatigued. He believed these symptoms were associated with cardiac dilatation and anemia, and were quite distinct from anorexia nervosa. He found that tonics and change of air were of no avail in the treatment. His method of treating such cases was rest in bed for two weeks. Afterward the child was allowed perfect freedom. The results were favorable.

Dr. Arthur W. Fairbanks of Boston believed in absolute rest in bed for a longer period than two weeks. He stated that warm saline baths, massage, and, later, resistance exercises were of use.

Dr. T. D. Park of Alabama believed in stimulating the heart muscle in anorexia with cardiac weakness.

Dr. Charles G. Kerley of New York thought such patients did better with change of air.

Dr. Clarendon Rutherford of Chicago cited a case of tuberculous hip-joint disease which was benefited by the rest in bed.

Dr. W. E. Taylor of Buffalo said he had a patient suffering from loss of appetite who was not benefited by rest in bed and showed no gain in weight.

Dr. Snow, in closing, said that rest and perfect freedom were of great value in the conditions named. Dr. Taylor's patient, he thought, was somewhat nervous and required no treatment.

(To be continued.)

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 6, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	440	161
Diphtheria	268	25
Measles	1322	17
Scarlet Fever	498	22
Smallpox	—	—
Varicella	171	—
Typhoid Fever	45	7
Whooping Cough	25	5
Cerebrospinal Meningitis	7	5
Malarial Fever	—	—
Totals	2776	242

Health Report.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending June 5, 1908:

SMALLPOX—UNITED STATES.

		Cases.	Deaths.
California, Los Angeles	May 9–16	1	..
San Francisco	May 9–16	4	..
Florida, Jacksonville	May 16–23	1	..
Illinois, Chicago	May 16–23	1	..
Springfield	May 14–21	2	..
Indiana, Fort Wayne	May 18–25	1	..
La Fayette	May 18–25	3	..
Terre Haute	May 16–23	10	..
Kansas, Kansas City	May 16–23	7	..
Wichita	Apr. 18–25	6	..
Kentucky, Covington	May 16–23	5	..
Louisiana, New Orleans	May 16–23	4	..
Michigan, Detroit	May 16–23	1	..
Minnesota, Winona	May 16–23	1	..
Missouri, Kansas City	May 16–23	10	..
St. Joseph	May 19–26	16	..
St. Louis	May 16–23	4	..
Montana, Butte	May 12–19	1	..
North Carolina, Charlotte	May 16–23	1	..
Ohio, Cincinnati	May 15–23	3	..
Dayton	May 16–23	1	..
Texas, Galveston	May 15–22	3	
Virginia, Richmond	May 16–23	1	
Washington, Spokane	May 9–16	16	..
Wisconsin, La Crosse	May 16–23	6	
Racine	May 16–23	3	

SMALLPOX—FOREIGN.

Brazil, Manaos	Apr. 18–25	1	..
Rio de Janeiro	Apr. 19–26	163	59
Canada, Hamilton	Apr. 1–30	12	..
China, Hongkong	Apr. 11–18	23	18
Shanghai	Apr. 12–26	..	6
Egypt, Cairo	Apr. 22–May 6.	14	5
France, Paris	May 2–9	4	..
Toulon	Apr. 1–30	7	..
Great Britain, Glasgow	May 8–15	1	..
London	May 2–9	1	1
India, Bombay	Apr. 1–28		48
Calcutta	Apr. 11–18	..	28
Italy, General	May 2–9	39	..
Java, Batavia	Apr. 4–11	5	..
Mexico, Aguascalientes	May 10–17	..	2
Mexico City	May 4–11		16
Progreso	Apr. 1–30		1
Portugal, Lisbon	May 2–9	4	..
Russia, Moscow	Apr. 18–May 2.	45	25
Odessa	Apr. 18–May 9	20	..
Riga	Apr. 25–May 9	3	..
St. Petersburg	Apr. 18–25	5	5
Warsaw	Mar. 28–Apr. 18	..	14
Spain, Denia	May 2–9	3	1
Madrid	Apr. 1–30	..	1
Seville	Apr. 1–30	..	2
Valencia	May 2–9	21	..
Transvaal, Pretoria	Apr. 11–18	1	..
Turkey, Bagdad	Apr. 11–18	30	2
Constantinople	Apr. 26–May 20.	..	4

YELLOW FEVER.

Brazil, Manaos	Apr. 25–May 2	1	1
Para	Apr. 25–May 2	15	12
Mexico, Laguna de Terminos	May 30–June 2.	..	2

On Russian bark *Lembit*

CHOLERA.

India, Bombay	Apr. 21–28	..	5
Calcutta	Apr. 11–18	..	267
Madras	Apr. 18–24	..	2
Rangoon	Apr. 11–18	..	4

PLAGUE.

China, Foochow	Apr. 11–18	..	Present
Hongkong	Apr. 11–18	20	15
Egypt, General	Apr. 12–May 12.	268	150
Alexandria	Apr. 1–May 12.	4	1
India, General	Apr. 18–25	6,755	5,523
Bombay	Apr. 21–28	..	462
Calcutta	Apr. 11–18	..	118
Rangoon	Apr. 11–18	..	27
Turkey, Bagdad	June 2	..	Present

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Original Articles.

MILK-FREE FLUID DIET, AND RECTAL IRRIGATIONS IN TYPHOID FEVER.

A FURTHER REPORT.*

By A. SEIBERT, M.D.,

NEW YORK.

PROF. OF PEDIATRICS, NEW YORK POLYCLINIC; VISITING PHYSICIAN TO ST. FRANCIS HOSPITAL.

At the stated meeting of the New York Academy of Medicine, on March 16, 1888, the author reported on an investigation concerning the influence of the weather on the causation of acute gastro-enteritis in young children (MEDICAL RECORD, March 24, 1888). The meteorological observations of each day of ten years (1878 to 1888) had been compared with the number of cases (8,036) noted in the German dispensary, and with the mortality of this ailment in New York (31,638 deaths in children under three years of age in Manhattan and the Bronx).

The results of this comparison were:

1. Gastroenteritis in children becomes epidemic in this city as soon as the lowest atmospheric temperature of the day reaches 60° Fahrenheit and remains at or above this figure, usually from June 15 to October 15.

2. The persisting high atmospheric temperature permits the rapid growth of organisms, and thereby the productions of toxins in the milk during its transportation, and thus causes epidemic gastro-enteritis (summer-complaint).

The logical inference of these, then newly-established, facts was *to stop all milk-feeding in gastro-enteritic children until the infection of the alimentary canal had been disposed of,* a rule I have followed since.

In the treatment of typhoid fever patients suffering from diarrhea this same thought soon forced itself forward. Practical tests showed that typhoidal diarrhea stopped much more readily without than with a milk diet. But, furthermore, it was noticed that the fever and the remaining symptoms of systemic infection were lowered from day to day, but only while milk was withheld. On renewing the milk diet, the temperature, the pulse rate, the tympanites, and the diarrhea soon reached their former heights.

These observations tempted me to feed the next typhoid patients with strained soups and water, without milk. The results of these tests (made in the fall of 1889) were so marked that the writer came to the conclusion that milk could do but harm in typhoid fever.

Cantani had used regular irrigations of the colon with a 1 per cent. tannic acid solution during an epidemic of Asiatic cholera in Naples in 1861. At Mosler's clinic (in Greifswald) this method was tried later on in typhoid fever, and Backhaut (one of the assistants) reported favorably on this plan in the *Deutsche medizinische Wochenschrift,* July, 1889. The possibility of destroying the typhoid organisms by the tannic acid was questionable, as it could not reach the small intestine, but the removal of the feces by repeated irrigations of the lower bowel appeared rational. For this purpose plain warm water could do the same work, and even better. The success of the first trials of this plan proved the correctness of the supposition, for the rectal irrigations with plain warm water have proved themselves in my hands, since the fall of 1889, to be but the rational supplement to the fluid diet without milk in every case, for both reduced the amount of typhoid poison in the patient. At first rectal tubes were used, but were soon discarded. Typhoid ulcers may be present in the rectum, even in mild cases.

Since October of 1889 the author has been enabled to test the above plan of typhoid treatment in the first medical division of St. Francis' Hospital. The following rules were followed in all cases:

1. If nausea were present on admission, the stomach was washed out. Then two doses of calomel, each containing two grains, were given within two hours.

2. Rectal irrigations with three pints of warm water were begun at once. In severe cases every three, in milder ones every six, and in mild cases every twelve hours. Bowel hemorrhage, appendicitis, and perforations were the only contraindications.

3. During the first day of treatment nothing but cold water was given.

4. From the second day on, one-half pint of strained rice-, oatmeal-, or barley-soup, containing the extract of half a pound of meat and the yoke of a fresh egg, well spiced, were given every three hours, five times daily. During the night cold water alone was offered.

5. During the first three days of treatment the patients were not urged to swallow all of their soup, but were persuaded to drink cold water every hour by day and by night. From the fourth day on, strained pea-, lentil-, potato-, and tomato-soup with rice were added to the menu. The desire for more food, coming in uncomplicated cases not seldom on the fifth or sixth day, was met by giving the soups thickly made. The lower the fever and the more marked the hunger, the thicker the soup. To very hungry patients two or three zwiebacks were given with their soup at the end of the first week. Orange juice was given in water three times daily. Egg albumin was not given, on account of the possibility of forming toxins.

6. Before each meal fifteen to twenty-five drops of hydrochloric acid were given in one-half ounce of water.

Alcohol was given only to topers. Cold baths

*Read at the meeting of the German Medical Society, April 6, 1908.

were *never* employed, even in hyperpyrexia. Opium was used only in bowel hemorrhage.

During complicating pneumonia sixty to one hundred and twenty drops of 20 per cent. camphorated oil were injected hypodermatically, twice daily. No other medication was used.

The results of this plan of treatment were the following:

1. Nausea, headache, delirium, insomnia, tympanites, and diarrhea disappeared in most cases after two to three days, and did not recur later on.

2. In uncomplicated cases the temperature began to drop after twenty-four to forty-eight hours daily by ½° to 1° F., and reached 99° F. in the rectum on the morning of the ninth, tenth, eleventh, or twelfth day of treatment, irrespective of the duration of the attack before admission. In a smaller number of cases this occurred within the first week of treatment.

3. In cases admitted with complications (like pneumonia, nephritis, and phlebitis) the intestinal symptoms (tympanites and diarrhea), as well as those of systemic infection of the nervous system (delirium, headache, and insomnia) usually disappeared as readily as in uncomplicated cases, while the temperature, the pulse rate, and the respirations remained at the height characteristic of the local processes.

4. The complications disappeared more readily than under the former milk diet.

5. Later complications very seldom developed in cases admitted without complications.

Statistics are tiresome and will be here but briefly dealt with. The reports on three hundred and thirty-eight typhoid patients treated by the author during the last nineteen years in hospital and private practice are at hand. The report published seven years ago comprised one hundred and fifty-three cases, of which seven patients died in the hospital. Three of the latter were admitted in a moribund condition, and four suffered from bilateral pneumonia when treatment began (*Archives of Pediatrics*, September, 1900). Since then one hundred and eighty-five typhoids (showing positive blood tests) were treated, one hundred and thirty-nine in St. Francis Hospital, and forty-nine in private practice. Of these, six patients died in the hospital, none in private care. Adding the cases of my last report to those of this one, we have three hundred and thirty-eight cases with thirteen deaths, a mortality of 3.1 per cent.

A better insight into the action of this plan of treatment is furnished by the following figures: During September, October, and November of 1906 and 1907, sixty-one typhoid patients were treated, fifty-one in the hospital, and ten privately. Of these, nine cases reached the normal temperature within one week. Twenty cases reached the normal temperature within two weeks (of these, three had pneumonia, and three were sent in with bowel hemorrhage and therefore could not be irrigated). Eighteen cases (all complicatel) reached the normal temperature within three weeks. Eighteen cases (all complicated) reached the normal temperature within four weeks. Four far advanced cases reached the normal temperature within six and seven weeks. These last four cases were all septic on admission, and, aside from pneumonia and nephritis, presented such symptoms as singultus, hemophilia, and multiple abscesses.

Of the sixty-one patients, one died three days after admission. His complications were bilateral pneumonia, acute nephritis, and alcoholism.

This report proves that the majority could not be classed among the mild cases.

In view of the results of this plan of typhoid treatment, the following conclusions are submitted:

1. It abbreviates the attack and ameliorates the symptoms by the constant reduction of infectious material.

2. It prevents complications; and

3. It reduces the mortality.

The first report on this typhoid treatment was published by the author in the MEDICAL RECORD of September 12, 1891. Further reports were made in the *New York Polyclinic* of March, 1893, the *Medizinische Monatsschrift* of July, 1894, and the *Archives of Pediatrics* of September, 1900.

Since the fall of 1889 this plan has been recommended to the attendants at my clinic at the New York Polyclinic.

William Osler had mentioned the author's suggestion of irrigating the bowel in typhoid in his textbook on the "Practice of Medicine," published in 1896. Encouraged thereby, I sent a dozen typhoid histories from St. Francis' Hospital, with the accompanying temperature charts, to Baltimore, with the request to try this plan in a few cases. Osler's answer stated that he was so well pleased with his own results that he would not try this plan, and (verbally) "in hospital practice milk is by far the least expensive food in typhoid."

In his publication on Typhoid Fever in Baltimore (Johns Hopkins Hospital Reports, Vol. IV.), Osler said: "Milk is of all fluids the most susceptible for infection, and forms a culture medium of the very best kind, particularly for typhoid germs," and on page 229 he reports: "Milk is the staple article of diet (for typhoid patients) of which from three to four pints are given in twenty-four hours."

Strümpell, in the sixteenth edition of his textbook, published in 1907, on page 30 states: "The diet of typhoid patients must be fluid and yet nutritious. Milk is efficacious and must always be given, but, to my sorrow, is taken by but few patients with a relish on the long run."

On page 852 of the *Journal of the American Medical Association* of September 7, 1907, the following statement of William Hallock Park is mentioned: "Milk makes the bowel contents more suitable for the preservation of the typhoid bacilli, until passed externally."

In conclusion, but two questions:

1. Is it conceivable that after the primary invasion of the typhoid bacilli from the infected food into the intestinal tissue and the blood of the patient, further invasion ceases?

2. If such an assumption is preposterous, is it rational constantly to supply the bowel contents with the best possible food for the typhoid bacilli? Is this not pouring oil on a fire?

114 EAST FIFTY-SEVENTH STREET.

A MILK-FREE DIET IN TYPHOID FEVER.*

BY CYRUS J. STRONG, M.D.,

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VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

IN the treatment of a disease so prevalent, so widely spread geographically, so insidious in its invasion, and so treacherous in its course as typhoid fever, any method which promises prevention or amelioration of distressing or dangerous symptoms demands careful consideration. The advocacy of any diet in

*Read at the meeting of the German Medical Society, April 6, 1908.

typhoid which shall exclude milk is indeed radical, for milk has long been regarded as the sole or principal food, other articles being added to prevent monotony or because they subserved individual preference, emphasis always being laid upon the fact that in milk alone all the nutritive requirements are to be found in their most digestible form, yet the results obtained under the above plan seem to demonstrate the fallacy of this opinion.

We have all repeatedly noted untoward symptoms arising from the imperfect digestion of milk in typhoid fever, even when the patient was fond of it, while we find but few who manifest no distaste at any period of the disease, provided they retain a sufficiently normal mentality to express any preference. The facility with which bacterial activity occurs in milk should long ago have given warning of the dangerous complications almost inevitable under the conditions present in typhoid, and its continued use is, to my mind, simply another instance of the tremendous influence exerted by established usage in our profession.

I am convinced that in a milk-free diet we eliminate one of the principal sources of danger, and markedly modify the course of the disease to a milder type, less prone to complications. My conviction rests upon a much firmer basis since the reading of Seibert's reports, detailing the results obtained in a series of cases extending over a long period with uniformly satisfactory results.

When I entered upon my service at Bellevue Hospital last May, there were in the wards of the Fourth Medical Division five typhoids who had been given no milk since entering the hospital, this method of treatment having been adopted by my predecessor, Dr. Alexander Lambert, to whom, and Dr. Charles G. L. Wolf, who made all the determinations regarding nitrogen balance and nutritive equilibrium during my entire service, I am deeply indebted. The appearance and general condition of these patients in one ward (there were four in consecutive beds) differed so radically from that presented by any similar number of typhoids I had ever seen during the eighteen years of my connection with Bellevue Hospital, that, had I not seen the charts, a diagnosis would not have been possible from mere inspection. Three of these patients, though at the fastigium of the disease, required no medication or baths, being entirely free from the toxemia usually found at this period, yet having been admitted with high temperatures and other evidences of at least average infection.

Since that time all typhoids coming under my care have been treated as follows: On admission, calomel, gr. 3 to 5, in divided doses, followed by 1 dram of magnesium sulphate. Diet to consist of 8 ounces of some meat broth, prepared at a temperature below the coagulation point of albumin, in order that a minimum of bulk should contain a maximum of nourishment; soda crackers in hospital, zwieback or breakfast biscuits in private practice, with butter, if desired, alternating every three hours with 6 or 8 ounces of gelatin in the form of the so-called calf's-foot jelly, or the same amount of boiled rice, with butter and sugar added in varying amounts, depending upon the demands of nutrition and the condition of digestion. We thus meet the food requirements (proteid for cell repair, fat and carbohydrate in increased amount to maintain body weight) at a reasonable standard, and provide for the excessive metabolism, consequent upon prolonged illness with high temperature. Water was given freely throughout the entire course of the disease.

Much less objection was made to this diet than when milk constituted the major part of the nourishment, and by exercising a little care and not crowding the diet at first, the patients were better satisfied, and the complaint of having had "nothing to eat" was infrequently heard.

This diet differs somewhat from that employed by Seibert, but the variation is less than might appear at first sight. Enemata were not given as an integral part of the treatment, being used only to overcome slight constipation. Pepsin and hydrochloric acid also were given only when indicated. Cold baths, usually in the form of bed baths, were employed to keep the temperature below 103° F., but the necessity for their use was greatly diminished, some patients requiring but one or two during the entire illness. Stimulation, by either strychnine or alcohol, was seldom required, in spite of the fact that nearly every patient exhibited at some time fairly marked dichrotism of the pulse, which was, however, unaccompanied by any untoward symptom. For hemorrhage calcium lactate was given in 20 grain doses.

Patients under this treatment exhibited far less prostration; their faces lacked the dusky flush so characteristic of typhoid; the tongue soon became moist and clean, or remained but slightly coated at the base; no tympanites or marked diarrhea persisted except in one fatal case; loss of flesh was markedly diminished, and in every respect the patients presented an appearance so unusual as to cause comment on the part of those professional friends who visited the wards at my invitation.

Sixteen cases were thus treated in Bellevue Hospital, with three deaths, and one in private practice with recovery. The following is a brief report of the fatal cases:

Case I. Male, history of syphilis and marked alcoholism. Urine loaded with albumin and casts, tympanites and diarrhea persistent. Died on the tenth day in the hospital. Autopsy revealed necrotic areas surrounding the ulcerations. Kidney markings very indistinct.

Case II. Male, alcoholic history. He soon gave evidence of profound toxemia with persistent temperatures to 105° F., not yielding to baths. Cardiac action bad from the time of admission. Died on the ninth day. No autopsy permitted.

Case III. Female, markedly prostrated on admission. Heart action remained poor in spite of liberal stimulation. Peripheral neuritis in the lower extremities. Died on the eighth day. No autopsy.

Of the thirteen cases, one had a single, fairly profuse hemorrhage, one a general bronchitis, two suffered mild relapses. Convalescence in all cases was more rapid than usual, though I am unable to report that there was any shortening of the duration of the disease.

Through the courtesy of Dr. Alexander Lambert, who opened the discussion on Dr. Seibert's paper, I am permitted to report the results in twenty-six cases treated by him on the same plan, twenty-two in Bellevue Hospital, and four in private practice. Two hospital patients died with complicating pneumonia and delirium tremens. I may add that Dr. Lambert's advocacy of this method is most enthusiastic.

In conclusion, while I have thus treated but seventeen cases on the milk-free diet, even that small number has shown results which to me thoroughly justify its adoption, and a comparison of the two methods will, I am convinced, if tried simultaneously, lead others to the same conclusion.

60 West Seventy-fifth Street.

REMARKS ON MILK-FREE FLUID DIET AND RECTAL IRRIGATIONS IN TYPHOID FEVER.*

By ROBERT C. KEMP, M.D.,

NEW YORK.

VISITING PHYSICIAN FOR GASTROINTESTINAL DISEASES, RED CROSS HOSPITAL; CONSULTING PHYSICIAN MANHATTAN STATE HOSPITAL, AND GASTROLOGIST TO THE WEST SIDE GERMAN DISPENSARY.

During the past few years we may say there are practically three methods of diet advocated in typhoid fever, viz.: (1) the full diet method, if I may so call it; (2) the old method with milk as a standard, and (3) Seibert's method, fluid diet without milk, by means of strained soups.

Regarding the first method, I will briefly quote Ewald in an article from Von Leyden's *Zeitschrift für diatetische und physikalische Therapie*. "During recent years the opinion has repeatedly been brought forward that typhoid patients should be given, during the course of the fever, a food rich in albuminous substances. In this way, it is argued, the resisting power of the organism is increased, the course of the disease is made less severe, and the period of convalescence is shortened. Gornicki, Barrs, and Puritz have indeed gone so far as to recommend that at the height of the fever a diet consisting of hard boiled eggs, chopped up finely, cutlets, white and brown bread, and the like, should be given and claim that by such means they have obtained good results. My conscience as a practitioner would not permit me to follow this advice. If anyone examined, as I did, hundreds of typhoid intestines post mortem, and thus convinced himself that in an apparently mild and harmless course, there may be many and deeply penetrating ulcers, then he could not so easily take upon himself the responsibility of giving a typhoid patient a diet of such a solid character, which can by no means remain, so far as the mucous membrane is concerned, without disadvantageous effects. I cannot help thinking that it is particularly fortunate that the observers, whose names have been mentioned in this connection, have not had to contend with very grave consequences, and for my part I should never think of prescribing for my typhoid patients a so-called course of diet, viz., meat with its indigestible fibers and vegetables, at an earlier period than six or eight days after the fever had ceased." There is no mistaking Ewald's point of view.

Nevertheless, there are to-day some prominent physicians who still advocate the liberal diet; one of whom, I am informed by a mutual friend, first tried the method on his mother-in-law who made a prompt recovery. As Ewald remarks, they must have been particularly fortunate. I have had one experience from following suggestions as to giving a more liberal diet in typhoid, which resulted in a relapse and the death of my patient. This occurred several years ago and the experiment will never be tried again with my consent.

Regarding the second method of diet, the use of milk as a standard in typhoid fever, I would speak at greater length. Dr. Seibert has already called to your attention how readily organisms grow in milk and how rapidly toxins are developed; he also has referred to the views of Osler and Park, as to the susceptibility of milk to infection from typhoid and how suitable it is for a culture medium. Osler in his recent work on Practice, 1907 Edition, states that in milk the typhoid bacilli undergo rapid development.

*Read at the meeting of the German Medical Society, April 6, 1908.

There are additional reasons, moreover, against the employment of milk in this disease. During the active stage of typhoid, especially during the periods of higher temperature, there is marked derangement in the secretory function of the stomach —a diminution and at times an absence of free hydrochloric acid and a lessening of the pepsin and rennet ferments. This is all conducive to the production of fermentative and putrefactive changes in the milk. It will curdle, none of the digestive transformations will occur, and it will be either vomited or more frequently pass by the bowel as a mass of curds. I am cognizant of one case at least in which the autopsy demonstrated a greatly distended stomach, filled with a mass of curds, evidently the collection of several previous feedings.

This brings us to a second feature—the relation of the motor power of the stomach to milk—and to the various foods soluble in water, such as bouillon and strained soups.

In health, Leube determines the scale of digestibility according to the length of time the food remains in the healthy stomach, as under such conditions the secretory and motor functions generally go hand in hand. In disease, however, as in the case of typhoid fever, with diminished digestive function, the length of stay of the food in the stomach would bear more on the question of putrefaction, or fermentive changes.

In health, water and foods soluble in water, such as bouillon and strained soups, pass most rapidly from the stomach; 200-250 c.c. are evacuated in 1 to 2 hours. Equal quantities of raw milk take at least an hour longer for complete evacuation—as demonstrated by lavage. Boiled milk is passed more rapidly than raw milk, cooking altering the curd formation.

In dilatation of the stomach, the same rules hold good, but the periods are longer, depending upon the degrees of motor insufficiency.

In various experiments during my service at Ward's Island, we found that if the milk were diluted one-half with water, the residuum found at a certain period was just about half what it was when pure milk was used, and there were fewer curds. If diluted two-thirds with water, a correspondingly increased quantity was passed from the stomach into the intestine and a smaller residuum was found. In fact, as you know, this method of milk dilution is practised in infant feeding for obvious reasons.

It is therefore evident that in the acute stage of typhoid fever, with diminished digestive power, due to diminution or absence of free hydrochloric acid, especially as raw milk under normal conditions leaves the stomach quite slowly, what the results would be as regards fermentative and putrefactive changes.

Moreover, the motor function of the stomach is generally diminished during the acute period of typhoid, whether diarrhea or constipation be present. In New York we have quite a few cases of the constipated type and in these I have found the diminution marked. Stasis we know is extremely conducive to putrefaction.

During the recent Spanish-American War in Cuba members of the Red Cross Society, under the direction of Dr. A. Monae Lesser, treated all typhoid cases by strained broth, malted milk, and rectal irrigations, avoiding the use of milk, and with excellent results. This was in effect Seibert's method, though they did not then know of his experiments which antedated the Red Cross method

by some years. Dr. Lesser has to my knowledge carried on in the past numerous experiments as to the secretory and motor functions of the stomach in typhoid fever, so that my own observations are merely confirmatory of this work.

Having been reared on the "old milk diet" theory my "regeneration" has been a gradual "evolution," and from careful observation in numerous cases I can fully substantiate all that Seibert claims for his method—the abolition of tympanites, fewer complications, the more rapid reduction of temperature, etc.

My only modification of his method is in cases of complicating nephritis of active type, where beef broths are omitted; but the strained farinaceous gruels are kept up, and occasionally I use malted milk made up with hot water. Moreover, I have been employing of late in my gastrointestinal cases a sterilized milk albumin product containing glycerophosphoric acid, which is soluble in water and has been demonstrated by Ewald to have considerable nutritive value and to be readily absorbed in typhoid fever. In such cases I believe it would be of considerable value.

The use of rectal irrigations is one of the most important features in the treatment of typhoid fever, and this I have myself advocated since 1896. Personally, I have generally employed the short recurrent tube and normal saline solution. The only contraindications are hemorrhage and peritonitis. By the irrigations the small intestine is emptied out into the large intestine, and this in turn cleared out; absorption from accumulation in the rectum is prevented, and hence toxemia is lessened and the temperature is reduced; gas, if present, is removed from the bowel; the large intestine is kept clean, and elimination of the toxins, through the diuretic action of the injections on the kidneys, is promoted.

It may be of interest to you to learn that in the new Red Cross Hospital, a small but well-equipped institution with the present capacity of about fifty beds, the following routine treatment has been established for typhoid fever: Water *ad libitum*, rectal irrigations, *no milk*, strained soups and broths, dilute HCl, orange juice, no alcohol.

Camphorated oil, strychnine, digitalis, and caffeine are used only if indicated.

Whenever the temperature reaches 102.5° F. or over, *no food* is given, only water until defervescence below this point.

This method of diet has been employed for at least ten years. Sponging, or friction baths (Brand) are allowed, but have not been found to be necessary, when the above treatment has been carried out. The method employed by the Red Cross Hospital markedly corresponds to that originated by Seibert.

We know, of course, that new methods always meet with opposition, and that any man straying from the narrow path of prejudice and custom is often held up to unjust opprobrium and even to ridicule. It is the man of original ideas, and not the one "in the groove," to whom we owe our advancement in science.

In conclusion, let me assure you that the method described this evening by Dr. Seibert, the result of nearly twenty years of careful investigation, is based on sound scientific principles, and I venture to predict that the time will come when it will be taught as the proper method of treatment for typhoid fever, and due credit will be given him, to whom it properly belongs.

107 East Fifty-Seventh Street.

CLINICAL CHARTS OF A CASE OF QUARTAN MALARIAL FEVER OBSERVED IN WEST AFRICA, WITH COMMENTARY.*

By F. CREIGHTON WELLMAN, M.D.,

BENGUELLA, WEST AFRICA.

Infection with the quartan malarial parasite is a comparatively rare condition in the part of Portuguese West Africa studied by the writer, namely southern Angola. In a series of 531 cases of infection studied by me[1] only fourteen cases showed this form of parasite, all the remaining fevers being due to invasion by malignant parasites. Benign tertian has not yet been seen. In view of the local rarity of quartan fever the writer, some time ago, decided to observe carefully the progress of a case of the disease. The greater part of the working hours of one week were given up to the gathering of the data exhibited in the following charts. The case was observed for its intrinsic interest, the writer having no thesis to defend nor other aim than the first-hand acquisition of clinical facts regarding the disease as it exists in this district, from whence it had never been reported prior to a communication from the author of this paper[2]. Notes from a medical diary and a few additional observations in the form of comments have been added to the charts.

Case Notes.—Milemba, twenty-five years old, male, a Bantu, had always lived at a point about 1,300 meters above sea level. Being partially crippled he had never been into the more unhealthy lowlands along the coast. He had suffered from slight fevers from time to time all his life but never had severe ones. Was taken sick two days before I saw him.

When first seen the patient had a temperature of 103° F., pulse, 90; respiration, 28. The spleen was slightly enlarged and somewhat tender. The blood was slightly alkaline by Haycraft-Williamson's method and showed in benzol-chloroform mixture a specific gravity of about 1.055. As to its tonicity I only tested it by adding to it a 0.41 per cent salt solution which, however, gave no hemolysis. On microscopical examination, quartan gametes and a few small ring forms were seen, with one or two pigmented leucocytes. The erythrocytes were normal in shape and size and no nucleated red cells were seen. Counted by the Thoma-Zeiss method, the number of erythrocytes was 4,700,000; leucocytes 7,000, hemoglobin index by Gower 90. A differential leucocyte count gave the following percentages (about 500 counted): Lymphocytes, 33 per cent.; large mononuclears, 29 per cent.; polymorphonuclears, 27 per cent.; eosinophiles, 11 per cent. The patient was a plump, well made man weighing 154 pounds (English) and was 5 feet 8¾ inches tall. He walked with a limp, having lost the toes of his right foot.

Method of Study.—The following routine was followed throughout the observation. The temperature and pulse were taken twice daily, always at the same hour. The blood for microscopical examination was also taken twice a day as near as possible at the same hour each day. Two wet and two dry specimens were always made, the latter to be stained, one by Leishman's modification of

*Read by title at the fifth annual meeting of the American Society of Tropical Medicine, held in Baltimore, March 28, 1908.

[1]Atti della Societá per gli Studi della Malaria, Rome, 1907, pp. 29-58. 1 plate and 8 figures in text.

[2]Journal of Tropical Medicine, London, November 1, 1905, p. 319.

Romanowsky and the other with hematoxylin and eosin. The number of red and white cells was counted on the Thoma-Zeiss hemocytometer. On two occasions the result was compared with readings on the hematokrit. The hemoglobin index was taken by Gower's hemoglobinometer. The differential leucocyte counts were made on slides stained by hematoxylin and eosin. The patient was weighed daily at the same hour, and the amount of urine passed was measured and the number and size of stools noted. All the fluids ingested by the patient were measured and the solids weighed. No medicines were given or allowed.

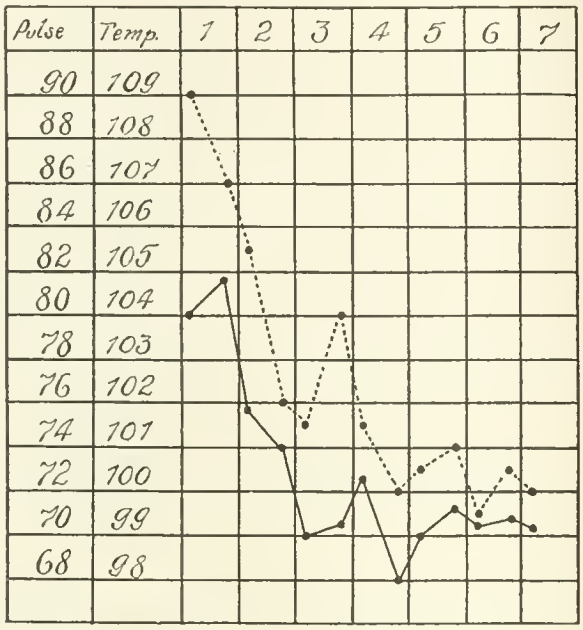

CHART I.—Pulse and Temperature. The continuous line indicates the temperature as taken in the mouth.

Commentary on Chart 1.—The temperature curve is very different from the classical quartan type.

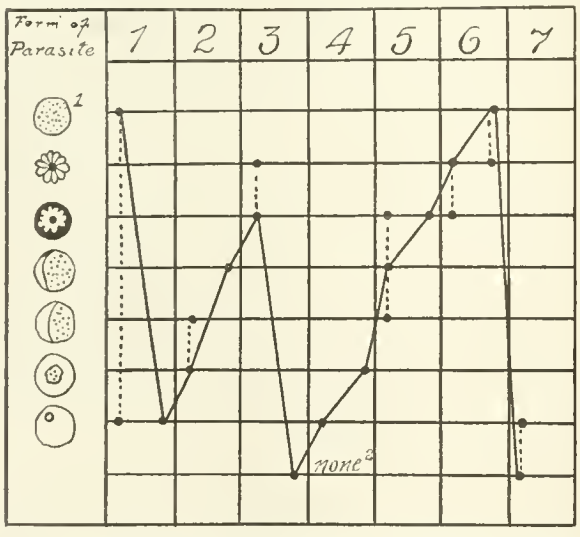

CHART 2.—The Shapes of the Parasite Seen in the Blood at Different Times. The line representing the parasites refers to the developmental stages observed and not to the abundance of parasites in the blood. The forms of the parasite are shown at the left of the chart. [1]Gamete. [2]A few parasites were found on the evening of the third day in a thick film preparation.

In other cases which I have seen in West Africa there was even slighter rise of temperature (not over 100° F.) and in one or two cases no elevation of temperature at all, although the developmental cycle of the parasite went on steadily and regularly in the blood. In the case before us there was not, I believe, a double infection. Of course this is hard to pronounce upon categorically, but the small ring forms (with which alone malignant parasites could be confounded) did not seem to be in excess of their usual proportion and did not appear at the time one would expect them in a tertian. Close search was also made for crescents and other signs of double infection. Rest in bed seemed to be the chief factor in calming down the clinical manifestations. The accelerated pulse and respiration slowed down as the temperature fell. After the first day the patient was quite comfortable and by the third day wanted to get up.

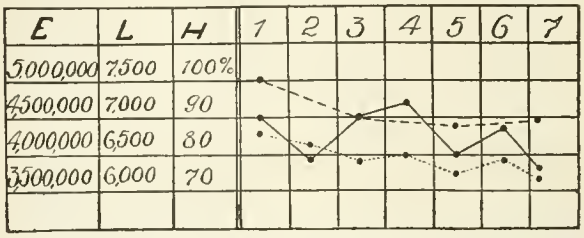

CHART 3.—Comparative Numbers of Erythrocytes and Leucocytes, with Hemoglobin Index. The continuous line indicates the erythrocytes (E), the broken line the leucocytes (L), and the dotted line the hemoglobin percentage (H).

Commentary on Chart 2.—It will be seen on comparing this chart with Chart 1, that the sporulation of the parasite went on without the slightest relation to the temperature and pulse. This chart does not show all the forms seen in the blood at any one time, but only the form which preponderated during each stage. I have tried with dotted lines, however, to indicate other forms which were numerous and to connect them with the chief form. For instance on the morning of the first day segmenting forms could be seen with the gametes as well as small ring forms and even a few larger ones. The time and sequence of the development stages of the parasite in this case were not so regular and typical as I have seen in cases in Europe.

Commentary on Chart 3.—This chart shows that both the absolute and comparative numbers of the red and white corpuscles remained practically unchanged throughout the period. It will be seen, however, by comparing the erythrocyte count and hemoglobin index that the oxygen-carrying power of the blood was rather lowered, probably as a result both of hemolysis and corpuscular deficiency. The leucocytes, already scant, as is often the case in malaria, fell a little. The further behavior of the leucocytes is shown in the next chart.

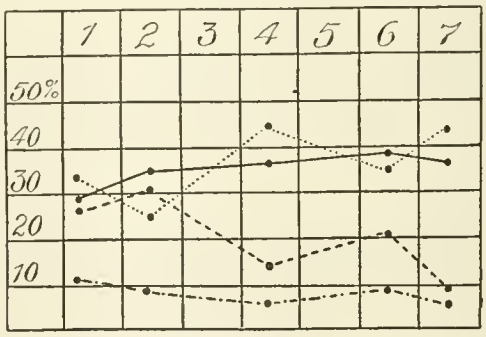

CHART 4.—Results of Differential Leucocyte Counts. The dotted line indicates the percentage of lymphocytes; the continuous line that of large mononuclears; the broken line that of polymorphonuclears, and the dotted-broken line that of the eosinophiles. About 500 were counted each time. N. B. The "transitionals" were always counted with the polymorphonuclears.

Commentary on Chart 4.—The differential leu-

cocyte count shows no marked phagocytic tactics. The increased percentage of large mononuclears is characteristic of a malarious country. The cosinophiles and large mononuclears appear to be the most constant, but food taking and other factors may very well account for the polymorphonuclear

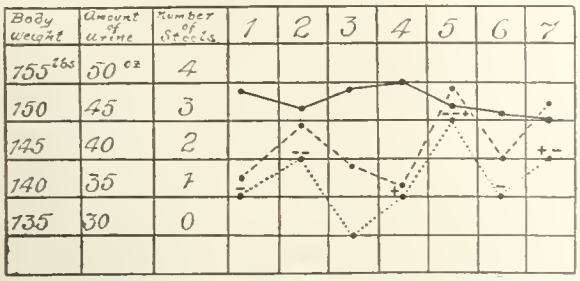

CHART 5.—The Changes in Body Weight Compared with the Amount of Urine and the Number of Stools Passed During the Period. The continuous line indicates the body weight in English pounds; the broken line the number of English ounces of urine passed in twenty-four hours; the dotted line the number of stools in twenty-four hours (+ denotes a large stool; − a small stool).

and lymphocytic variation. The number of eosinophiles is not unusual for natives of this country (where some sort of helminthiasis is almost universal). I have frequently seen as large a proportion in individuals apparently enjoying the best of health. Entozoal infection probably accounts for such conditions.

Commentary on Chart 5.—The body weight decreased but slightly during the attack. The smaller amount of urine passed during the first part of the attack is probably to be explained by the fact that the patient perspired more freely at that period than later. The urine became much lighter in color during the last three days of the observation. This chart should be compared with the following one.

Commentary on Chart 6.—The appetite increased as the patient grew better. The ingestion of liquids was the greatest on the first and fourth days of observation, and lowest on the second. The food and drink as a rule consisted of a fermented native gruel called "Ochisangua," made of meal from maize (*Zea mais* L.) and cassava (*Manihotutilissima* Pohl) mixed with water and the juice of a root called "Ombundi" (*Erioscma muxiria* Baker). For the last three days of the observation some solid food was taken with this.

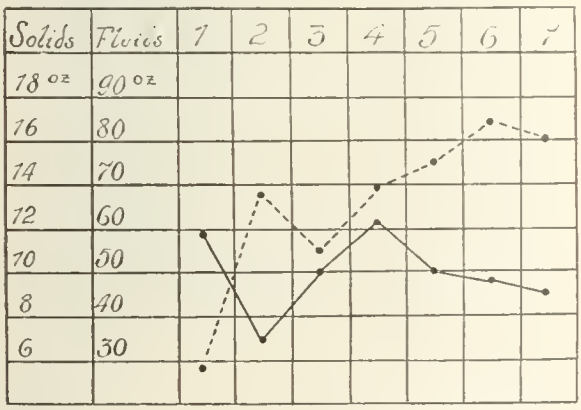

CHART 6.—Comparative Amounts of Fluids and Solids Ingested During Each Twenty-four Hours of the Disease. The continuous line indicates the fluids in English ounces; the broken line the solids in ounces.

General Commentary.—The foregoing is an attempt to add to our knowledge of the behavior of the quartan malarial parasite in tropical climates. Some points of interest brought out are: (*a*) the effect of warmth and rest in lowering the temperature and pulse rate; (*b*) the somewhat irregular sporulation of the parasite; (*c*) the relatively little damage done to the blood; (*d*) the constancy of the relative proportions of the leucocytes; (*e*) the small loss of body weight, and the general well-being of the patient without medical treatment; (*f*) the morphological identity of the parasite with the quartan parasite of other countries.

In conclusion, I may say that while the quartan fever of West Africa is the same as that of temperate climates, yet the mischief done is far less. It should be mentioned here that the patient declared himself perfectly well before he was discharged, and on his discharge immediately began manual labor. It would seem that in negroes of tropical climates who have acquired sufficient immunity to be generally fever-free in districts swarming with malignant malaria, such a benign disease as quartan (which in Europe gives rise to fevers quite severe enough) is a comparatively negligible factor.

THE RELATION OF TUBERCULOUS COWS TO TUBERCULOSIS IN CHILDREN.

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Two subjects closely related are engrossing the attention of scientific physicians and students of social economics. One is pure milk as food for children and adults; the other is tuberculosis which cuts short the life of both old and young. Tuberculosis causes about 120,000 deaths annually in the United States—that is more than one-tenth of the total mortality. If our entire army and navy should be destroyed in a year the numerical loss would not equal that caused so quietly by tuberculosis. Domestic animals, especially cattle, develop the disease in large numbers. Reports from the slaughter houses in Berlin (1892-3) showed that 15 per cent. of beef cattle were tuberculous. Dr. Veranus Moore of Cornell University estimates that there are now 440,000 such cows in New York State, and Dr. Smith (*Boston Medical and Surgical Journal*, January 18, 1906) says: "The herd of a public institution in Massachusetts that is not infected to a greater or less extent with tuberculosis is the exception and not the rule." The diseased cow is spoken of as the "chief manufacturer and disseminator of tubercle bacilli" and as being more dangerous even than the tuberculous man. We are not prepared to say whether this is proven or not, but it indicates the importance of the subject.

The etiology of tuberculosis in man and its relation to the same disease in animals have engaged students for many years. While Vogel was laying stress on heredity, Villeman, in 1865, was announcing tuberculosis as a specific infection, which he proved by inoculating rabbits (Blackader). Chanreau, 1868, fed calves with milk containing sputum and tuberculous flesh, causing them to become tuberculous (Blackader). This seems to have been the first of ingestion experiments. Blackader (*Boston Medical and Surgical Journal*, Vol. 114, No. 25, p. 665) gives an instance of ingestion origin in the case of the daughter of Dr. Gosse of Geneva. She was seventeen years old and spent each Sunday in the country where she drank freely of warm milk. She died after ten months' illness. Four of the five cows on the farm were found to be tuberculous and two of them when killed had

tuberculous udders. Unfortunately man has been directly inoculated at autopsies, notably Prof. Jensen of Copenhagen and Dr. Thomas Walley of Edinburgh. In 1882 Koch declared the specific cause of tuberculosis to be the bacillus with which

Fig. 1.—From a Case of Tuberculous Glands. *a.* Scars after removal of tuberculous glands; *b.* Pigmentation three weeks after tuberculin inoculation; *c.* Twenty-four hours after inoculation with tuberculin; *d.* Puncture not inoculated.

we are now too familiar. Since that time veterinarians and physicians have made countless observations. Sputum contains quantities of the germs and they are daily coughed into the air by the poor victim. The immediate family are most in danger because the bacilli are moist and virulent. Fortunately many lose their virulence by drying and by exposure to sunlight—otherwise the number of persons infected would be greater than it now is. Cadéac (*Le Bulletin Médical*, September 5, 1906) says that dust ground from tuberculous sputum is harmless both to the digestive tract and respiratory passages. This is reassuring to those who live in dusty cities.

Young animals are very susceptible to the bacilli, and children are included. Botz, quoted by Walsham, made 2,576 autopsies upon children, finding 27 per cent. of them tuberculous. At Escherich's clinic in Vienna 40 per cent. of the children coming to autopsy were tuberculous. The proportion in America is lower, at least in New York, for in a series of 726 consecutive autopsies at the Foundling Asylum tuberculosis was found in 8 per cent., *i. e.* 58. Of 319 consecutive autopsies in the Babies' Hospital tuberculosis was found in 44 or 14 per cent. (Holt, 1896).

Bacilli may gain entrance to the body by inhalation and go directly to the lungs. It was formerly supposed that the majority of cases of infection occurred in this manner, but recent animal experiments throw some doubt upon it. Schroeder and Cotton (U. S. Dept. Agriculture, Bulletin 93) produced pulmonary tuberculosis in a calf and three hogs by inoculating them with bacilli in the tail. All autopsy records of animals or persons tend to show that the lungs and bronchial glands are the favorite seat of development of tubercles without regard to the port of entry. Those taken into the digestive tract pass into the lymphatic vessels, thoracic duct, subclavian vein and thence directly through the heart to the lungs. Here they are filtered out and remain to develop tubercles in tissue most favorable to their growth. The frequency of the occurrence of tubercles in the intestine or mesenteric glands of children has forced the belief that they at least are primarily affected by bacilli in their food.

The certainty of infection depends partly upon the quantity of bacilli received and partly upon the resisting power of the individual. The first proposition has been well demonstrated in feeding and inoculation experiments. (See Bulletin 7, Animal Industry, U. S. Dept. Agriculture.) The latter statement is borne out by observation of many men with large experience in autopsies. Many bodies contain tuberculous glands that showed local infection and more extensive lesions often recovered from. It has been demonstrated that bacilli do not exist in milk properly drawn from cows having tuberculosis elsewhere than in the udder. Cows do not cough out but swallow the sputum brought up from their lungs and hence have abundant bacilli in the intestines. The feces of tuberculous cows are therefore as full of infective material as the sputum of persons. Schroeder and Cotton have demonstrated by inoculation and feed-

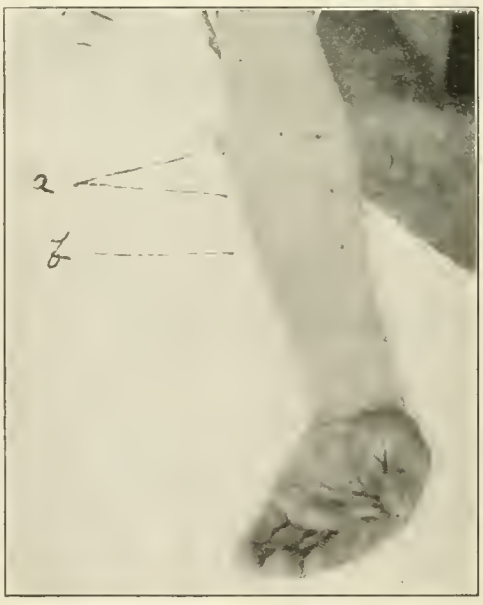

Fig. 2.—From a Case of Tuberculosis of the Hip. *a.* Twenty-four hours after inoculation with tuberculin; *b.* Puncture not inoculated.

ing that there is danger from this source (Bulletin 99). One does not need to go far among dairies to see that fecal matter often contaminates the milk. The cow keeps her tail switching about in warm weather and often lies upon a filthy floor at night.

An unusual opportunity has arisen for studying the relation of the milk of tuberculous cows and

children at the New York City Children's Hospitals on Randall's Island. This institution is located on an island of sixty acres lying practically in New York Harbor. Here are treated annually nearly 2,500 patients. The milk supply is in part from our own herd, and in part received in bulk from a large milk concern in the city. During the two years past the city supply has been pasteurized at 155° to 165° and reduced to a temperature of 45° before delivery to us. All wards known as sick wards, *i. e.* where there was acute illness, the quarantine wards, and those containing small children were supplied with our own farm milk, served fresh without pasteurizing.

Samples of the farm milk and that supplied from the city were examined each week by the Health Department. Great variations are shown, *e. g.*:

Oct.	5, 1905.	No sterilization	farm milk	70,000 bacteria per c.c
			city "	4,800,000 " "
			farm "	23,000 colonies "
Jan.	7, 1907.	Pasteurized....	city "	18,000 " "
			farm "	5,000 " "
Feb.	4, 1907.	Pasteurized....	city "	3,000 " "
			farm "	5,000 " "
May	6, 1907.	Pasteurized....	city "	800 " "
			farm "	72,000 " "
July	1, 1907.	Pasteurized....	city "	6,200 " "
			farm "	52,000 " "
Sept.	2, 1907.	Pasteurized....	city "	8,000 " "
			farm "	2,000 " "
Sept.	30, 1907.	Pasteurized....	city "	8,000 " "
			farm "	720,000 " "
Oct.	7, 1907.	Pasteurized....	city "	1,000 " "

These observations show that bacterial count gives no clue to the health of the cows, nor the character of the milk when it reaches the city full of bacteria to be pasteurized. The hospital's herd consisted of twenty-eight cows: four Holsteins, four grade Jerseys, two Durhams, and others, largely Ayrshire and native, also two bulls. The cows occupied a modern, well-built barn with cement floor, tight sides and ceiling, ample light and water supply, each having 780 cubic feet of air space; more than the standard 600 cubic feet. In December, 1902, the herd was tested with tuberculin and two diseased animals were found and killed. Occasionally a cow died or was killed, but the herd looked unusually well kept. In order to be sure that all were in perfect condition Dr. H. D. Gill of the State Department of Agriculture was asked to test them with tuberculin. On October 3, 1907, three temperature records were made of all the animals and tuberculin was injected in each. Six temperature records were made after injection and the rise of reaction was present in 27 of the 30, only three failing to react. Ten were found to have a cough. Five cows had been recently added to the herd, but three of them were found to be tuberculous.

All the animals were killed and careful autopsy records made. The three that failed to react to tuberculin were found free from lesions. Breed counted for little, although two of the three Holsteins were badly affected. Two grade Jerseys were slightly affected, having tuberculous retropharyngeal glands only, in one instance, and the other the same with tuberculosis of the intestines. The worst of all was a native cow with marked lesions of the lungs, pleura, liver, peritoneum, stomach, intestines, and spleen. Six had no pulmonary lesions. A native cow had lesions of the retropharyngeal gland and rather marked disease of the udder, without lesions elsewhere. The udder at the autopsy was considered tuberculous, but on histological examination proved not to be so.

One cow gave a suspicious reaction, and was found to have lesions of the mediastinal glands and a large abscess on the leg. Seventeen cows had marked pulmonary disease, eleven had disease of the posterior mediastinal glands, two of which did not have lesions of the lungs or pleura. Three had local lesions, two with retropharyngeal glands.

Dr. W. H. Park had samples of milk and feces taken from each cow for laboratory examination. Guinea pigs were injected with the samples, and in six weeks were killed. None of the pigs showed tuberculosis.

Only one cow had udder involvement. The farmer had discovered this bad udder in the summer, and therefore discontinued using the milk.

Bovine and human tuberculosis are interchangeable experimentally, and under suitable conditions may be so accidentally. Eber injected calves with mesenteric glands from children, and in many instances caused a virulent tuberculous process. Calves have been fed sputum with tuberculosis resulting. Feeding experiments are numerous (Allbutt's "System of Medicine," 1901, II, 204). The Royal British Commission on Human and Bovine Tuberculosis, in 1901, in summing up, says, "there can be no doubt that a certain number of cases of tuberculosis occurring in the human subject, especially in children, are the direct result of the introduction into the body of the bacillus of bovine tuberculosis," and in the majority of instances through the cows' milk.

Normal persons have a certain power of resistance against invading disease germs that varies little, but the opsonic power of hospital children is low because of their low vitality caused by faulty heredity and environment. Having both the children and the cows isolated and under control, there was presented an unusual opportunity to trace the relation between milk of tuberculous cows and children. Therefore the records were examined to learn just what wards received the farm milk and how many cases of tuberculosis they contained. During 1905, 1906 and up to October 1, 1907, there were treated 5,576 patients, of whom 190 died. Of this number 18 deaths, less than 10 per cent., were due to tuberculosis. Eleven children were idiots or feeble-minded, and therefore did not have the milk until already in the ward for acute illness and so were given the milk as special diet. Seven young children died, two having entered with spinal disease, one with a tuberculous hip, and one with tuberculous psoas abscess. A boy of fourteen years was admitted in March, 1906, with a diagnosis of anemia and died the following July of tuberculosis.

Jane Doe, age three years, was admitted June 25, 1906, with pertussis, and died two months later of pulmonary tuberculosis. This is the only case that appears definitely to have entered with a nontuberculous diagnosis, yet died of pulmonary tuberculosis. Even this fails as a proof case, because it occurred a year before the cow showed the diseased udder.

Attention was turned to the living to learn whether we had an unusual number of children with pulmonary or other tuberculous lesions. Physical examinations did not reveal an undue number, so we availed ourselves of the new tuberculin diagnostic tests suggested by von Pirquet and Calmette. In June, 1907, von Pirquet of the Children's Hospital in Vienna, advocated inoculating a drop of one-fourth of one per cent. solution of tuberculin into the arm of children. Three small punctures or scratches are made, one-sixteenth of an inch in diameter, two are inoculated and the third is regarded as a control. In six or eight hours

redness and swelling appear, extending one-third of an inch or more in diameter. In twenty-four hours there appear on the summit of the wheel-like spot a number of minute vesicles. After twenty-four or seventy-two hours of active reaction, the swelling subsides and gradually fades, though some pigmentation may remain for two or three weeks. The accompanying cuts illustrate well the cutaneous reaction.

The ophthalmotuberculin test was first applied to cattle, but Calmette about the same time tried it on man. One minim of a one per cent. solution of an alcoholic precipitate of old tuberculin is dropped upon the conjunctiva. In from three to ten hours congestion occurs, and the lacrymal caruncle becomes red and swollen. In marked reaction there is a slight fibrinous exudation and a sense of irritation as of sand in the eye. The irritation subsides in twenty-four or forty-eight hours.

We tried the new diagnostic procedure on all the children in wards that had farm milk exclusively. Seventy-seven children were subjected to the ophthalmic test, of whom nineteen reacted; thirteen of these were surgical cases and therefore expected to react; three were not suspected of tuberculosis, even latent.

All who reacted to the ophthalmotuberculin test were later subjected to the endermic inoculation after von Pirquet's method. Others were added, making eighty cutaneous tests. Of those who were treated both ways, six reacted to the ophthalmic, but not to the cutaneous test. Two had Pott's disease, one rachitis, and three were unsuspected epileptics.

Five cutaneous reactions were good where the ophthalmic reaction failed. They were cases of spinal caries, hydrocephalus, pulmonary tuberculosis, a questionable case of pulmonary tuberculosis, and an otitis media. Possibly some fault in technique accounts for these cases.

Six patients were inoculated a second time after three weeks. The second inoculation was as characteristic in every way as the first. The temperature rose about one degree in twelve of thirty-nine patients recorded before and after inoculation.

Many interesting conditions were noted in these tests. A group of twenty-one had the cutaneous test without the ophthalmic. Among them six reacted, three of whom had chronic ophthalmia showing bad nutrition from some cause. One child had a history of pulmonary tuberculosis, one year before, but appeared cured. One child had rachitis.

It is worthy of note that all the cases of rickets tested showed reaction. Walsham, referring to this subject, says (Channnels of Infection in Pulmonary Tuberculosis, 1905): "Rickets in certain cases unquestionably renders the tissues susceptible . . . bronchitis, atelectasis, and a distorted chest are a serious matter from the liability that exists to the production of caseous bronchial glands and subsequent tuberculosis."

The new diagnostic tests are quite sure to react in surgical tuberculosis, *i. e.* of bones and glandular affections. (See Figs. 1 and 2.) Four cases of otitis media reacted, though only one case was otherwise diagnosed tuberculous. Four others, patients who had been operated on for mastoid disease, failed to react, leaving the inference that this bone suppuration is not related to tuberculosis while middle ear suppuration is. Eight cases of spinal caries reacted and one case failed to react. Four cases of pulmonary tuberculosis reacted, and one failed to do so, being too far advanced. Two hip cases and five with tuberculous glands of the neck reacted well. The greatest surprise was in the marked reaction of four epileptics, three of whom are really adults and to all appearance in unusually good physical health. It is common for epileptics to die of phthisis, but these are far from it, showing no evidence of tuberculosis. Reaction occurred in about one-tenth of the unsuspected children inoculated.

Careful experiments have demonstrated that tuberculous cows give pure milk unless they have lesions in the udder (Bulletin No. 7, U. S. Dept. Agriculture). Similar observations and animal experiments demonstrate that tuberculous cows void numerous bacilli in feces (Bulletin 99, U. S. Dept. Agriculture). The lesson to be learned is that diseased cows should be eliminated from the milk-producing herd, and that great cleanliness will spare us from outside infection.

Conclusions.—Fresh, clean milk, when obtainable, is wholesome and more readily digested than when pasteurized. The danger of tuberculous infection from milk must be very slight, for in tracing the history of the children and the diagnosis on admission to the institution, there is no evidence of tuberculosis developing more often among those having the farm milk than among those in other wards having the pasteurized supply from the city. Less than 10 per cent. of the mortality was due to tuberculosis, and that according to the United States Census of 1900 is the ratio for the nation.

We cannot deny the presence of a tuberculous dairy and the presence of tuberculous children; but a careful analysis fails to show that one depended on the other.

160 West Seventy-third Street.

THE TREATMENT OF DISEASES DUE TO RESPIRATORY CATARRH.*

By WILLIAM MARTIN RICHARDS, M.D.,

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My subject, this evening, is the treatment of several diseases, the course of which, at the time of our graduation, was considered to be very little influenced by any measures whatever. It is my purpose to show that during the last ten years this has changed to a very marked degree, so that now, most cases of respiratory catarrh, catarrhal deafness, asthma, pulmonary tuberculosis, hay fever, epilepsy, gout, rheumatism, lobar pneumonia, and last, but not least, homeliness of voice, face, and figure, can in most cases be permanently improved by methods now known to us. Several of these I call vacuum respiratory diseases because they are produced by an attempt to breathe through a nose which is partially stopped up, thus causing a partial vacuum in the respiratory tract. The diseases directly so produced are, I believe, catarrh of the nose, throat, and ear, and bronchial asthma. Indirectly, this vacuum is partly responsible for all the others.

Let us consider, for a moment, the result of a partially occluded nose: On inspiration we have a partial vacuum produced in the nasopharynx, and therefore in the Eustachian tube and middle ear, throat, and bronchial tubes. By partial vacuum I mean a pressure of less than 15 pounds to the square inch. By the force of the cardiac systole we have an equal pressure inside the blood-vessels all over the body. The pressure outside of these blood-vessels should be everywhere 15 pounds to the square inch. If over any area we have less

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than this amount of pressure we get a dilatation of the blood-vessels over that area. The dilatation of blood-vessels means a hyperemia, which results in increased secretion, increased growth of tissue, and later, thickening and hardening of the tissue.

Let us see how this process results in the diseases that I have mentioned. The increased secretion in the nose and throat we know as catarrh; in the ear we know it as an abcess, or, when thickening and hardening have occurred over the ossicles, we know it as organic catarrhal deafness. Difference between pressure inside and that outside makes the ear-drum so tight that it will not vibrate, and results in functional deafness. In the nose we know the increased secretion as rhinitis; in the throat as pharyngitis; in the lungs as bronchitis, which last is admitted by the majority of observers to be the exciting cause of bronchial asthma and the opening of an avenue of access for pulmonary tuberculosis.

As regards the diseases and faulty conditions of which a vacuum is considered to be an indirect cause, we have epilepsy, hay fever, indigestion, gout, rheumatism, neuralgia, red, large, or bulbous nose, projecting front teeth, stooping shoulders, and lobar pneumonia.

As regards epilepsy: We have known for some time that in some cases the removal of adenoids from the nasopharynx resulted in its cessation. The explanation given for this by some observers was that the congestion produced by the nasopharyngeal vacuum caused pressure on the cribriform plate of the ethnoid; by others, the production of the toxins of the 66 varieties of germs irritating nerve endings and so producing convulsions.

I believe, in hay fever, that the best observers recognize three factors: (1) A neurotic individual, (2) a stopped-up nose, (3) some irritating substance in the atmosphere; sometimes the pollen of flowers; at others, irritating odors from animals. The removal of any one of these three factors is generally followed by a cessation of the disease. Improvement in the general health removes the neurotic factor; change of environment the irritating substance in the atmosphere; removal of the nasal obstruction relieves the third factor.

As regards nasal obstruction being a factor in the production of indigestion, we can only guess at the way in which this occurs. It may be the swallowing of large quantities of mucus or its disagreeable odor; it may be reflex irritation or the absorption of toxins from bacteria on an inflamed mucous membrane. My own experience has been that many cases of this disorder (my own among them) are relieved by being able to breathe freely through the nose the entire twenty-four hours.

I believe that the latest theory of gout and rheumatism is that they are produced by two factors: First, an underlying one, faulty metabolism, in which we include disorders of the digestive tract, with the production of substances circulating in the blood, such as urates and the like; second, an exciting cause, bacterial poisons introduced from without. The theory is that bacterial toxins break down the leucocytes into fibrin; this fibrin circulating in the blood is deposited where the circulation is the slowest, that is, in the serous membranes, and entangles in its meshes the products of faulty metabolism. These bacterial toxins do not always gain entrance through the respiratory tract. Instance the case of a man who came under my treatment seven years ago, when I was in general practice, who told me that he had had a three months' attack of gout every winter for eighteen successive years. He gave a history of gonorrhea twenty-five years before, and the resultant stricture was large enough to admit a urethal sound No. 23 French. Upon dilating this stricture he had a slight attack of gout which lasted twenty-four hours, but after its full dilatation up to 33, he has been entirely free from the disease ever since. As we know, a great deal of neuralgia is either gouty or rheumatic; so, what I have said about gout and rheumatism applies, to a great extent, to this disease also. I will give one case as an illustration:

A well-known New York City official was sent to me last October for deafness of the left ear. An examination showed, not an hypertrophied inferior turbinate, as is usual in these cases, but an hypertrophied middle turbinate, over which there was a persistent thick yellow discharge, with the odor of a dead dog. He informed me that people needed only one sense to know that he was in the vicinity, and I readily believed him. After removing a portion of the middle turbinate, I found an abscess directly above it, which dated back to an attack of influenza twenty years ago, ever since which time he had suffered from a severe pain over the lumbar muscles, which destroyed his night's rest, and which no treatment had relieved, although he had spent a small fortune trying to get rid of it. Eight days after the operation, with daily insufflation of an antiseptic powder, the pain in his back disappeared. Twice since then, on taking cold in his nose, the pain has returned coincident with the discharge from the old abscess, but antiseptics applied above the middle turbinate immediately relieved the pain on both occasions. In this case I believe that the pain in his back was produced by the toxins absorbed from the nasal abscess.

Neuralgia of the face is often caused by defective eye refraction or bad teeth. A great deal of it is only a symptom of frontal sinusitis or disease of the antrum of Highmore.

As regards the production of colds in the head, throat, or lungs, a partial vacuum means local congestion and a freer entrance for germs in these localities. Frequent colds cause a hyperemia and redness of the outside of the nose, and thus increase its size in some cases. Nothing is more distressing than a red nose, particularly for one who does not wish to be considered intemperate. I have in mind the case of a young man, an Italian, who was sent to me by his family physician, and who, being particularly temperate, even for one of his race, was much distressed because everywhere he went, people thought him a hard drinker. A double inferior turbinectomy, by diminishing the frequency of his attacks of rhinitis, restored his nose to its normal color and shape. A facial acne, which he had had for several years, coincidently disappeared, whether or not from the absence of toxins formerly absorbed from the nose and excreted through the skin of the face, I cannot say. The case seems to be suggestive, however, in view of the fact that we know almost nothing about the cause of facial acne.

As regards homeliness of face and figure: a stopped-up nose in infancy causes the child to breathe through the mouth, resulting in a lateral pressure on the upper dental and the palatal arches with the absence of the counterpressure of the tongue, and so a pushing forward of the upper front teeth in some cases; of the lower front teeth in others from frequent tonsillitis; and the resultant narrowing of the space between the two maxillas causes the so-called hatchet face. The habit of mouth breathing from the inhaled air being cold and dry results in more shallow breathing, and so

in an ugly contour of the chest, and in round shoulders.

Now, as regards the treatment of these conditions:

1. *Prophylactic*. I believe it is admitted by all competent observers that the bodies of most human beings uninterfered with from without, functionate normally, and that if our bodily functions are abnormal they are so from outside interference. The avenues of entrance for these unfavorable influences are either the skin or mucous membrane. For the former we have such examples as syphilis and some septicemias; for the latter such diseases as diphtheria, gonorrhea, and typhoid. The most frequent avenues of access are the nose and throat. Disinfect these twice a day, at the time that the teeth are brushed, and I believe we will avoid most of the diseases of childhood. I have in mind two instances of this; one, a case of measles in a three-room flat, where I had the mother disinfect the noses and throats of the other children, with the result that they did not contract the disease, and the other, a case of a friend who was visiting with his three-year-old son in a family where there was whooping-cough. He kept his child's nose and throat disinfected during his stay, and he was the only one of five children who escaped the disease.

Some time ago a doctor of this city called my attention to a case of cerebrospinal meniningitis which had begun with tonsillitis, and which to me seemed to have been infected by this means. My subsequent investigations have led me to believe that this is its usual mode of entrance, and also that of anterior poliomyelitis, which I believe to be this disease with its initial symptoms masked. I advocate unhesitatingly the spraying out of the nose and throat daily with an antiseptic for everyone. It is no more trouble than brushing the teeth, and I believe it to be much more important. I do this myself, and urge everyone that I know to do it.

As regards the treatment of these conditions after they are established, I advocate the removal of every nasal obstruction and the widening of every narrowed palatal arch by a competent orthodontist; and for the homeliness of figure, subsequent breathing exercises and dumbbell exercises. As the nasal obstruction is the cause of the palatal narrowing, it must first be removed before the palatal arch is widened, otherwise the latter will be impossible. By the removal of nasal obstruction I mean the excision of adenoids, polyps, and hypertrophied turbinates, and the correction of septal deflections.

Of nasal obstructions the most common is an hypertrophied condition of the inferior turbinated body. There can be no permanent relief of this condition without its partial excision. A cauterization of it, as practised by the Vienna school of specialists, is useless. For nine years I suffered with this condition and had numerous attacks of tonsillitis each year. I had spurs of the septum removed and the turbinates repeatedly cauterized by chromic acid or the electric cautery. At the end of this period I was actually worse than at the beginning. I was often temporarily relieved by the contraction of scar tissue following cauterization, but a subsequent cold again caused tumescence of the turbinates—my nose was again stopped up, and the former process had to be repeated. Seven years ago (at the end of nine years of fruitless treatment), I had two-thirds of the inferior turbinates removed with a saw, and barring two attacks of tonsillitis, have been perfectly well in that way ever since.

The removal of the inferior turbinates is attended by considerable hemorrhage on account of the large blood-vessels which they contain. The giving of twenty grains of potassium bromide and an equal amount of quinine beforehand, and the use of a spray of adrenalin at the time of the operation and for several hours afterwards, obviates this difficulty entirely. The operation may be done either with cocaine as a local anesthetic, or with any general anesthetic, preferably chloroform, as causing less dilatation of blood-vessels. I prefer local anesthesia, which is induced as follows:

First, a 4 per cent. cocaine spray. At the end of three minutes, a 20 per cent. solution of cocaine on a piece of cotton at the end of a nasal applicator inserted under the overhanging ramus of the inferior turbinate. At the end of a few minutes as much of the turbinate as is necessary can be painlessly removed with a Curtis nasal saw. My operation differs in one important respect from that of other specialists of the American school, in that I operate on both sides of the nose at the same sitting. My reason for this is that a great many patients, having one good nostril always remaining free, dread having the other side done on account of the cocaine reaction. I find in looking over the results of other men who do this work that a good proportion of their patients do not return to have the other side operated on, and so the work is only half done. I follow the method of Dr. Sharp in having the patient use the spray of adrenalin after the operation; rather than that of Dr. Griffin, who packs the nose tightly with cotton for twenty-four hours, which the patients find is accompanied with a great deal of pain.

Two-thirds of hypertrophied inferior turbinates, average size. A, side view; B, front view; C, cross section at center of A.

As the turbinate contains a plate of bone as thin as paper it does not subsequently grow again, and we have a permanent result. We hear all sorts and kinds of objections from the Vienna school to the removal of a portion of this body. We are informed that it has a function, namely, to warm and moisten the air that goes to the lungs, or that its removal will be followed by necrosis. As a matter of fact, when no air goes through the nose, none is warmed and moistened, and neither in my own case, in the three hundred operations that I have performed in private practice, nor in ten thousand in which the results are known to me, have there been any disagreeable results whatever. These objections are merely bogeys of the imagination. The real objection of the Vienna school is founded on their fear of hemorrhage, which I have shown can easily be avoided. I have here a few specimens which I will now show you. I ask you, can anyone breathe through a nostril which contains one of these hypertrophied bodies? The peculiarity of many of these patients is that they often breathe through the nose without apparent difficulty. The truth is that they are unable to get enough air by this means, and their attempts to do so make the partial vacuum which, I believe, is the cause of these conditions. Most of the deaf people who come to me, apparently have free nasal breathing, but partial removal

of the inferior turbinates results in increased, or in recent cases, perfect hearing. I have in mind the case of a man and his wife, acquaintances of mine. They have an equal amount of nasal obstruction. He frankly breathes through his mouth, and therefore has projecting front teeth, but his hearing is perfect. She believes that one should breathe through the nose whether this can be done easily or not, and she is almost stone deaf as a result, although her facial contour is perfect. In other words, given a nasal obstruction, if you breathe through the mouth continuously you will be liable to projecting front teeth, to inhale tubercle bacilli, or to asthma caused by cold dry air breathed through the mouth instead of being warmed and moistened by going through the nose. On the other hand, if you breathe through the nose you are liable to catarrhal deafness and sore throat as a result of the partial vacuum.

As regards treatment—I believe that in all of the conditions enumerated, free nasal breathing will probably be beneficial. In any event, it does one no harm to breathe through the nose always, and it is a source of great comfort. To quote a most observing woman of my acquaintance whose husband suffered with pulmonary tuberculosis for five years: "In consumption, I believe the nose is the whole thing. When my husband and I were in Denver, I noticed all the consumptives there breathed through their mouths." On the other hand, sometimes the results are quite surprising, as in the case of a young woman of twenty-eight who had been a sufferer from chronic rheumatism, and who has now for one year been entirely free from it after no other treatment except a double inferior turbinectomy.

I, myself, in addition to my catarrh, have had several attacks of pulmonary tuberculosis. The first at the age of seven, from which I recovered by being kept continuously in the open air. This occurred again at thirteen, and again at twenty-four. At the age of twenty-six I had a much more serious attack of it, and was confined to my bed with what was diagnosed as typhoid fever. At the end of three weeks, one afternoon I received an urgent call, and being unable to get another doctor, I dressed myself and walked half a mile to the patient's house, having at the time a mouth temperature of 102½°. On my return my temperature was normal. The following day, against the attending physician's advice, I acted as a witness in court, and that afternoon went to a neighboring park, where, overcome with dizziness, I had to lie down on one of the benches for some time before being able to sit up. However, my temperature remained normal that day and the next. I then visited my father at his country house about 400 feet above sea level, where I remained out of doors almost continuously. At the end of a week my typhoid fever (?) was so much improved that I returned to duty in Bellevue Hospital, spending all my spare moments playing tennis on the court there. Two years afterwards I had an inferior turbinectomy performed, and have never since been troubled with my lungs. Incidentally, I had one uncle die from this disease, and my father and another uncle have suffered from it from time to time. I have dwelt on my own case at some length because I wished to impress one point upon your minds, which is, *that you can arrest the progress of tuberculosis much more rapidly and make its recurrence less likely if you at once give your patient a nose which is absolutely free the entire twenty-four hours.* I desire to emphasize the fact that the virulence of this disease has very much diminished in the last fifty years, for the mortality from it had lessened quite as much in the first half of that period before our increased understanding of it and its proper treatment, as it has in the last half since we have been treating it according to more modern methods. We find that these methods postpone the fatal results rather than abolish them, unless the underlying cause, namely, nasal obstruction, is permanently relieved.

I will now give a few more instances of results in this class of diseases:

Hay Fever.—I have relieved three cases of this disease (the only ones I have had) by an inferior turbinectomy—one of eight and the other of ten years' standing. I have relieved countless cases of catarrhal deafness, one of them sent to me by Dr. Nelson, but I will mention the results of only two of the most striking. The first is the case of a woman of thirty, whose hearing last summer, after ten years of treatment by some of the foremost specialists in this country, was so bad that she was learning the deaf and dumb language. She can now sit in my waiting room and hear everything said in an ordinary conversational tone. The other case is that of a woman thirty-four years old, who had been growing more and more deaf since the removal of the uterus and appendages a year ago, during which time she had been under treatment for her deafness at one of our largest clinics for four months, and the balance of the time with a well-known specialist. At the time of her first visit to me she could hear a loud Ansonia watch tick only one inch away from the left ear and two inches from the right. At the end of one week, after a double inferior turbinectomy and Politzer inflation, she could hear the same watch tick ten feet from either ear, and this improvement has been permanent. This was, of course, a case of functional deafness, and as such, easily relieved by this treatment. The digestion of every person whom I have operated on has been greatly improved. Every case of frontal sinusitis has been cured, and colds have been made much less frequent and disagreeable from the fact that the nose has been always open.

As regards homeliness of voice: The matter is so simple that every medical man understands it perfectly. The frequency of catarrh in this country causes the nasal voice which has so often been referred to by foreigners, and is, of course, due to our sudden changes of temperature. It is analagous to the stoppage of the upper part of an organ pipe. The improvement in the voice of a singer is sometimes quite wonderful after the nose is made perfectly free.

I wish to mention the results in cases of chronic otorrhea. I have done a double inferior turbinectomy in many of these cases, and have cured every one of them without the mastoid operation. In addition to this, I often had to give antisyphilitic treatment, because syphilis, either inherited or acquired, is frequently an underlying cause. I believe many such cases would not have to be operated on repeatedly if the nasal obstructions were first removed.

My treatment of asthma consists in relieving all nasal obstructions and in following this up for one year with twenty grains of iodide of potassium in a whole glass of water, milk, or vichy, and one-twenty-fifth of a grain of arsenious acid after each meal. Every patient treated in this way has been permanently cured, and one of these had had asthma every day for fifteen years.

Before closing, I wish to give the results of treatment in one other disease—lobar pneumonia. In

the *Journal of the American Medical Association,* three or four years ago, Galbraith, a New Englander practising in Mexico, gave his results in the treatment of this disease at an altitude of 8,000 feet, where up to that time it had been invariably fatal. His treatment is two doses of one dram each of some saline laxative, one hour apart. With the second dose he gives a simple enema, and as soon as the bowels move he gives ninety grains of quinine either on the tongue or in capsules, to adults, and thirty grains to infants, following it with fifteen minims of tincture of chloride of iron every three hours in adults, and children in proportion. He treated seventy successive cases in this way without a death. I have treated three with definite recovery within two days, and I have had reported to me from among my friends three other cases; one of them observed by a doctor of this city. I herewith present a chart of one of my own cases. One peculiarity of it is that the patient gives no symptoms of cinchonism, the lungs apparently absorbing the entire dose. I believe that the perfect treatment of this disease has at last been found.

The New Amsterdam, Seventy-fifth St. and Amsterdam Ave.

THE INJURIOUS HABITS AND PRACTICES OF CHILDHOOD: THEIR DETECTION AND CORRECTION.

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Within recent years the trend of medical progress has been first on therapeutic lines, second on the detection by the use of vaccines of certain maladies which fail to present outward manifestations, and thirdly on bacteriological research.

If I may be allowed I would compare these advancements to the moral and religious missionary labors which are of two great classes: (*a*) Foreign missions, (*b*) domestic missions. The fields of progress that I have enumerated above can be said to represent foreign missions, in that they propagate thought in new climes, on foreign soil; we have been clamoring for some goal far from our own hearth. Hygiene, body susceptibility, environment, heredity, proper living, restraint—these are domestic missions. For these foreign missions, let us give thanks. They are the essentials of science. But nevertheless have we not neglected theoretically our own bodies, slighted our own predispositions, and above all failed to give enough credence to the value of two of the heaviest spokes in the wheel of medical septuary* namely, Etiology and Prophylaxis?

Superstition, the twin sister of idolatry and false dogmas, the subtle advance agent of ignorance, has, conjoined with neglect, been the forerunner of most of the functional neuroses of childhood, acquired first by practice, then by habit, lastly by the stunting of the higher intellectivities. As Holt succinctly puts it ("Diseases of Infancy," edition 3, page 700), "At this time apparently trivial causes are enough to produce quite profound nervous impressions because of the instability of the motor, sensory, and vasomotor nerves. Hygiene of the nervous system is of the utmost importance in infancy and childhood. A normal development can take place only in the midst of quiet and peaceful surroundings with plenty of time for rest and sleep. The conditions of modern life, especially in cities, are such that these laws are almost invariably violated, and the consequences of this are seen in the marked and steady increase in nervous diseases among children."

In order to comprehend fully these manifest truisms it becomes necessary to study the influences that affect or determine an individual's entity, and these are: (1) Forces exerted from within, and (2) forces acting from without, or in other words, habits exercised by the child and practices laid to the mother and which affect the child.

Masturbation.—Any act that produces undue excitement—psychical explosions—is conducive to harm. Especially so in the child with its unstable nerve centers and the nondevelopment of the voluntary centers of the brain. I am firmly convinced that the large number of the phenomena designated under the general term "nervousness" in early life, have their seat in the evolution of the psychical, physical, and reflex explosions produced in the act of masturbation, and that the general practitioner is rarely alert to the fact of its existence. The child is nervous, the mother adduces; the physician looks wise, seeks out chorea as the causative factor, and prescribes arsenic.

Those of us in public practice have had this fallacy brought to our notice time and again. By older children this habit is practised in secret, because they know that they are committing a wrong. But in infants, by careful observation and patient watching one can almost always have demonstrated the antics and physical manipulations which the infant passes through as being acts of self-abuse. They are not idle antics; they are the efforts of the baby to get its fingers into the genitals for the purpose of producing the pleasurable sensation the repetition of which gives rise to the habit, which in turn is the prodrome and incitor of a neurosis, usually stamped as "nervousness" and falsely attributed to one of the other common nervous disorders of childhood. I have observed infants as young as five months masturbating, and of the sexes the females practise this act much more frequently.

As predisposing causes are those which underlie most of the habits of childhood; these are: (1) Malnutrition, especially overfeeding and the abominable practice among the ignorant of giving whiskey and beer even to infants. (2) A highly neurotic constitution attributable always to heredity, mental and moral delinquency in the child as the results of vicious habits and traits in the parents, principally sexual perversions and alcoholism. As exciting causes are adherent prepuce in both sexes, gonorrheal vaginitis, eczema of the pudendum, and the presence in the rectum of the *Oxyuris vermicularis.*

Those who expect to find the infant always using the hands to masturbate will be disappointed. Infants and young children accomplish the act in the majority of cases by thigh friction and by assuming postures in which the genitals come into contact with some object, usually a chair, the edge of the bed, or a pillow. One child of eighteen months that I have in mind would stand on the first rung of a chair, bend over so that the genitals would come into contact with the edge of the chair and emit a peculiar groan or sigh, and sway from side to side. Another made use of the mother's knee. Masturbation produces such an undue nervous excitement that after the act is completed the child will break into a profuse perspiration with

*Etiology, pathology, symptoms, diagnosis, prognosis, prophylaxis, treatment.

suffused face, bewildered and tremulous, in short, evidences of high nervous tension. That chorea, hysteria, and epilepsy are among the sequelæ, few will doubt. Sachs ("Nervous Diseases of Children," page 539) is authority for the statement that dementia præcox and complete idiocy are the ultimate results of masturbation in children. Boys will teach the habits to others and in this way pollute and corrupt a whole school. Later on they practise pederasty, making use of boys and girls of their association. They do not get along with their studies, lose their power of concentration, and become easily excitable or depressed. And these are the precursors of the army of moral perverts that we see in our large cities.

Local signs in the female are hypertrophy of the clitoris and vaginitis; in the male balanitis and eversion of the lips of the meatus urinarius.

Masturbation is always a most difficult habit to break, especially in older children. In infants we can do a great deal to mitigate the habit and to eventually cure it. I must reiterate and with increased vehemence, that if the practitioner will learn to consider masturbation as an entity and to detect it early and correct it, he will come nearer to effecting a lasting cure; for a case that has gone on for a long period is a puzzle to the physician and an abomination to the child. The restraint that is needed is of two kinds, physical and moral. In children under three years the contrivance that is most successful consists of side splints attached with adhesive plaster to the thigh, the outer splint reaching from above the trochanter to below the knee, the inner from halfway down the thigh to below the knee. Other physical methods are tying the legs to the sides of the crib, and also tying the hands. Moral persuasion works well in young children. But in older ones more stringent methods are needed. The child's companions and surroundings should be looked into and his confidence obtained. While here, let it be said that great credit is due the society of Sanitary and Moral Prophylaxis of New York, and especially its founder, Dr. Prince A. Morrow, for the good work in enlightening the profession and the public and propagating the true dogmas of sex and sex hygiene, moral prophylaxis, the teaching of the young, and the total banishment of prudery. There is more reason for teaching school children the physiology and anatomy of sex than there is for enlightening them on the workings of the digestive organs, for the abuse of the former works greater havoc in children than neglect of any other of the functions of the body. Older children who masturbate should be sent from home if possible, given the benefit of good hygiene, fresh air, and away from books or studies, and treatment should be directed toward the general health. Local causes must be looked into and corrected; these are circumcision in boys and forcible separation of adherent prepuce or nymphæ in girls. Mild counterirritation to the clitoris is beneficial, as are also cold ablutions to the spine.

Habit Spasm.—Spasm independent of chorea is one of the neuroses of childhood, which have heredity as the main predisposing factor and bad training as a concomitant. Spasm is the *bête noir* of the Pediatrist, and like other of the habits of childhood is the culmination of uncorrected practices, and neglect on the part of the physician. I am ready to defend the statement that these spasms are at first always voluntary, and under the full control of the will; but by persistence they become firmly fixed and are then not in the category of habits and may be designated as pure neuroses like athetosis, which is uninfluenced by treatment. Habit spasm is very frequently the result of mimicry and manifests itself by facial grimaces, blinking, frowning, shrugging of the shoulders, and is often accompanied by a coarse tremor of the hands. I have never seen the spasm affect the lower extremities. The diaphragm in the cases that have gone on for a long time is thrown into spasm, as evidenced by a dry, hard cough, gasping, sudden, long-drawn inspirations, and hiccough. While at first these movements are infrequent, later they become almost continuous. Usually a certain set of muscles will be affected and this will last for quite a length of time. Then another set becomes involved, and so on. I have noted the fact that early in the case of these spasms the larger muscles and those more frequently used are affected. Later the smaller and less used muscles become spasmodic, such as the muscles that move the ear or the eyelids, and the small muscles around the nose.

Habit spasm is almost always confounded with chorea. But if the practitioner will keep in mind that chorea is a definite nervous disease characterized by irregular jerking unrhythmical movements not under the control of the will and intensified by efforts to suppress it and accompanied by loss of power in the muscles involved, mistakes in diagnosis will not occur. Besides, the duration confirms the diagnosis.

Almost the same rules of treatment apply to habit spasm as to masturbation. Early correction, mild and gentle admonition, and attention to the general health. These children should receive the benefit of fresh air, country life if possible, and above all should be taken away from school. Rachford says ("Neurotic Diseases of Children," page 403), "School life in my opinion brings to bear on the irritable nervous systems of neurotic children the etiological factors which are most important in the development of habit spasm." These are too early rising, stair climbing, long hours, and too strenuous study, improper attention to the bladder and bowels, confinement in stuffy rooms, anxiety over examinations, and overzealous and neurotic teachers. To repeat, when the habit becomes fixed, treatment is of no avail.

Sucking.—Lindner (*Jahrbuch für Kinderheilkunde*, Vol. 14, page 68) divides sucking into simple sucking and sucking with combinations. In the former the child makes use of some part of the body, as the thumb, fingers, toes, lips, or a blanket or part of the clothing; and most frequently, the "pacifier," a consideration which will be taken up later. In sucking with combinations, the sucking is accompanied by masturbation, or rubbing of the ears or anus, which affords a pleasurable sensation. Sometimes sucking is accompanied by acts which produce pain, as pulling of the hair and scratching of the skin. Sucking begins in infancy and if not corrected early, may go on to puberty, and infants who persist in the habit of sucking always become masturbators. Sucking, like other habits, becomes fixed and is then almost impossible to control. Besides the nervous factors, the sequelæ of sucking are, deformities of the fingers, lips, and teeth, and curvature of the spine. These deformities may be serious.

The advice given in the case of the other habits is equally applicable to sucking—early restraint, gentle admonition, and hygiene. Covering the hands with mittens is effectual, as is also the use of long sleeves which are pinned to the bed. The

same apparatus that I mentioned for masturbators answers for toe-suckers.

Pica (the eating of unwholesome and repulsive substances).—In the degree of danger to life and health that they entail, none of the habits I mention approximate dirt-eating; for this execrable habit may give rise to grave nutritional disorders and even cause death. Pica is a perverted instinct akin to animalism, and simulates what in the lower order of beings is self-preservation. In Jamaica and other of the West India islands, pica is so prevalent as to be classed as endemic. But we find dirt-eaters quite frequently in our own country, where the habit is analogous to sucking, masturbation, and habit spasm.

Ignorance, lack of proper training and supervision, bad hygiene, lack of sunshine, and improper and badly prepared food are among the causes, backed by heredity. Imitation and mimicry are the inciters of this habit, and according to Rachford, "propinquity and opportunity have much to do with the development of pica in infancy." Chalk-eating, a common practice amongst school children, frequently leads to pica.

The name explains itself; and the objects that these children devour includes almost every article that they may find—clay, sand, cinders, dirt, etc., are among the more common. Hundreds of instances are recorded by observers, all of them illustrating the fact that normal healthy children may form the habit, contrary to the earlier belief that it occurred only in idiotic and insane children. It is true that the habit usually ceases under mild restraint, at the age of three years, but only to be replaced by another, none the less pernicious habit, as spasm or masturbation. Hence the importance of early correction. Duke in the *Lancet,* 1884, reported the case of a child of five years who was brought to him for worms. By careful observation he discovered the fact that the child had been eating sand and mortar from the garden where he was allowed to play. The habit had been in progress for two years, during which time the child passed one hundred large round worms. The same author cites some instances in which death followed the ingestion of dirt, while in nearly all of the cases profound nutritional disturbances or severe anemia and emaciation followed.

Change of surroundings with a good nurse and proper dietary measures are of the greatest importance. Thomson (*Archives of Pediatrics,* April 1907) formulates the treatment of pica as follows: (1) Improve the general health; (2) treat the child's digestion; (3) keep the child away from the substances for which it has a craving; (4) change the child's surroundings; let him be happy and busy.

Nail-biting is a habit which is less pernicious and not so common as the others, but should be corrected early for the manifest reason of its being conducive to other habits. The child's finger nails should be kept short.

Head-banging.—Gee (St. Bartholomew's Hospital Reports, Vol. XXII, 1886, page 97) describes head banging as a habit in children between the ages of two and six, characterized by violent banging of the head against a pillow or other object, lasting for a few seconds, and alternating with swaying of the head and head rolling. It is akin to habit spasm. In some instances it seems to be the effort of the child to relieve pain of earache or neuralgia.

Spasmus Nutans.—While not included in the category of habits, it may not be amiss to state that a nodding movement of the head occurs in children as the result of mimicry. Thomson (*Scottish Medical and Surgical Journal,* July, 1900) believes in an intentional spasmus nutans. In my experience with these cases, I have failed to satisfy myself on this allegation.

Disorders of Sleep—Pavor Nocturnus.—According to the classification of J. A. Coutts (*American Journal of the Medical Sciences,* February, 1896) night terrors may be divided into two main types: (1) True night terrors due to the disturbances of the central nervous system; (2) nightmare or disturbances of sleep, the result of bad practices. Those of the first type cannot be considered here, as they belong to the true neuroses of organic nature, and are not under voluntary control. But I simply want to add that to my belief true pavor nocturnus is nothing more or less than nocturnal epilepsy. In the first class of cases, there is loss of sleep from the beginning: the child is restless and peevish, and, after rolling and tossing about, he falls into a light sleep, but soon wakes in a state of fright or excitement. Bad dreams are uncommon and the child remembers on the next day what has taken place the night before. These points distinguish it from true pavor nocturnus. The mind is clear and the child falls asleep again. The causes of this pseudoinsomnia are bad habits, such as rocking the child during sleep, night feeding and the consequent indigestion and colic. Lack of fresh air in the sleeping chamber and the presence of adenoid vegetations in the pharynx are among potent inciters. Again, infants much pampered, and which are taken up as soon as they cry, become poor sleepers.

Proper training is most important. The infant should under no circumstances be rocked. Cradles are as distressing to a child as a small boat in an open sea is to an adult. Regulation of meals and attention to the stools are not to be ignored. In older children, exciting stories should be avoided and reading and studying at night should be interdicted. While here let me put stress on the necessity of avoidance of overstrain in the schools. School hours should be regulated according to age. I would have for children between six and eight years of age two hours of study divided into two sessions. From nine to twelve years, four hours, and over thirteen full time. Girls evincing signs of the approach of the menses, should be kept from school until three months after puberty has been established; and last but very important, children should be put to bed at a definite hour.

Home Therapy.—Soothing syrups. From my experience in the past, I am led to the conclusion that the part that dentition plays as an etiological factor in causing disturbances in infants is nil. As Holt adduces "the physician who starts out with the idea that in infancy dentition may produce symptoms usually gets no further than this in his etiological investigations." And again, "probably in 95 per cent. of the cases in which symptoms are present they are due to some cause other than dentition." I purposely place dentition in this category, for it is for the relief of this fanciful trouble that soothing syrups are given. Some neighbor recommends Mrs. So and So's "dope" as good for teething, and the result is, if not death, a train of disturbances which deteriorate the health of the infant and render him particularly susceptible to disease.

Embrocations.—Among the ignorant a favorite remedy for colds is to rub over the chest some such thing as camphorated oil, vaseline, horse liniment,

tar, and other nasty preparations, which clog up the natural avenues of excretion in the skin, prevent proper radiation, and render the baby more liable to attacks of cold, just the antithesis of what these lotions are supposed to do. I decry the fact that many practitioners encourage this practice and even advise it.

Enuresis.—Those who have treated bed-wetting and have failed, as all of us have in a large percentage of cases, will welcome any light that may be thrown on this subject; and in my estimation Church's deductions are the best that have appeared in recent years. In the *Archives of Pediatrics* for September, 1906, he says: "Local conditions found in association with inability to control the outlet of the bladder, may furnish the inciting cause, but the underlying substratum of perverted innervation or incompetent innervation, is the field in which such inciting cause works, and only too frequently the correction of every local and mechanical state fails to relieve the enuresis. The fact that the condition is amenable to mental measures and in a high degree to suggestion, stamps its nervous and even its psychical character."

The Pacifier.—Of late years such competent observers as Kerley of New York and Cotton of Chicago have reached the conclusion that one of the most potent factors in the production of adenoids in children is the sucking of the pacifier. Hence I give this form of sucking extra space and consideration, because I believe it to be one of the most pernicious and harmful habits of infancy. This execrable habit is found among all classes of people. The good influence that it is supposed to exert, imaginary, as can be seen, is to quiet the child, stop its crying, take the place of feeding, and allay the symptoms of teething (?). The pacifier can be said to quiet the child only in the same sense as body sucking and masturbation quiet or rather satisfy the child, but only to be replaced by the reaction of a mental explosion, the result of high nervous tension. It takes the place of feeding only if one were to consider swallowing of dirt and germs as feeding. It cannot allay the pain of teething for the very evident reason that I adduced before—there are no symptoms of teething. The sucking of the pacifier produces in infants (1) the formation of adenoids by causing a congestion of the postpharyngeal wall, and consequent hypertrophy of the lymphoid tissue situated between the two Eustachian tubes and known as the pharyngeal tonsil; if adenoids are already present, they increase in size and extent for the very same reasons. (2) Deformities of the mouth and palate by the presence of adenoids whose growth it incites, and by the repeated twisting and distorting caused in sucking. Children who are subject to the habit have a high arched palate, diseased and deformed teeth, and thickened lips. (3) Colic and flatulence, by the sucking in of air. (4) Ulcerative stomatitis and sprue, by the sucking of dirty particles that always collect on the pacifier. (5) Hypertrophied tonsils, due to congestion as mentioned in adenoids.

In conclusion allow me to reiterate with increased emphasis the plea for early detection and correction of these habits of childhood; for the awakening of physicians to the great importance of hygiene in early life, to the recognition of the fact that a habit, though seemingly harmless in itself, may and usually does give rise to other and more pernicious habits to the detriment of the future mental and physical health of the child; for the inculcation of these doctrines in mothers and others who have the welfare of children at heart; and for the profound necessity of uprooting in very early life the maleficence and the curse of heredity, by inuring the child at an early age to the fastidiousness of good manners, kindliness, respect, personal cleanliness, and discipline.

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Primary and Secondary Spasmodic Paralysis; Origin and Treatment.—Maurice Faure, in a paper read before the ninth French Congress of Medicine, says that the type of primary contractures is represented by spasmodic paraplegia with little or no sensory and trophic troubles. The origin of the spasmodic condition is in the central lesion. The symptoms have rarely any tendency to regression. Often, on the contrary, they have a tendency to progress. In spite of the character of permanence and incurability of the cause of the spasm it may be overcome by treatment of a mechanical nature, the technique of which the author indicated. After some weeks or months of passive exercise and methodical movements the lower extremities become supple again. Since in these cases the motor loss of power is allied with the contracture, and the loss of the habit of movement, it is possible to reteach the patient voluntary motion at least partially as soon as the contractures are overcome. The type of secondary contractures is represented by hemiplegia. The appearance of these contractures constitutes a second stage in the evolution of the disease, and this stage coincides with the appearance of serious trophic disturbances. It has been for a long time believed that trophic troubles and contractures were allied with a central lesion of which they constituted (like primary flaccid paralysis) a necessary symptom. It has been seen, however, that some trophic symptoms, such as arthritis, were the result as much of modifications of nutrition resulting from immobility as from the central lesion. For contractures we may make a similar statement. Contractures do not appear in subjects that have been treated with passive movements from the beginning of the disease, neither do the arthritic troubles appear. When they have begun, methodical passive movements will lessen their severity. The hemiplegiac, his contractures removed, may relearn some voluntary movements; others return spontaneously. The best means of favoring their return is to prevent contractures and arthritis and the accompanying vicious attitudes. To sum up, methodical passive movements prevent the occurrence of contractures, and conquer them when they have taken place. Their use will enable the patient to avoid contractures, deformity, and ankyloses which are frequent complications, often irremediable, of hemiplegia and paraplegia. Passive movements followed by reeducation cause or hasten the return of voluntary motion.

Experimental Researches as to the Presence of Tubercle Bacilli in the Scales of Pityriasis Versicolor.—Michelangelo Cipolla says that some authors have endeavored to show that the tubercle bacillus is found in the scales of pityriasis versicolor, and that they are the cause of the disease. He gives the experiments made on several patients, after scrubbing the patches so as to remove all adherent bacilli, to find the germs in the patches of pityriasis versicolor. The results have been entirely negative, and the author considers it proved that the tubercle bacillus is not the cause of this skin disease.—*Giornale Internazionale delle Scienze Mediche.*

Smallpox and Pregnancy.—Queirol shows that the fatality of smallpox in pregnant women depends on the severity of the disease. All mothers and children die in the hemorrhagic variety. In the confluent form the position is serious, but in the discrete form many mothers and children survive. The question of the author is, what is the cause of the abortion. He admits that in the hemorrhagic form there are probably hemorrhages which separate the placenta from the uterine wall. In the other cases, he believes that it is the infection of the fetus with the disease, and its death that produces the abortion. He finds that there are no placental lesions or changes in the membranes, and that the fetus generally comes away whole. There are found germs in small numbers in the blood of the fetus. It is also certain that the infection is transmitted, because there are recorded cases in which the fetus was born marked with the scars of the disease. Mothers have nursed smallpox cases, having been immunized by vaccination, and have given birth to children marked with smallpox. Hence, we should seek by repeated revaccinations to immunize the pregnant mother and prevent abortion by obtaining a discrete form of the disease.—*Revue Française de Médecine et de Chirurgie.*

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PRESIDENT-ELECT GORGAS.

IN the election to the Presidency of Col. William C. Gorgas, the American Medical Association has honored itself and given satisfaction to the medical profession of the entire country. For a number of years an unbroken succession of surgeons has presided over the meetings of the Association, and the humble practitioners of medicine who constitute the great mass of voiceless and voteless members of that organization had begun to thing there was honor only in the knife, and that honest work in the prevention and cure of disease was unworthy of recognition. The Chicago papers said that the election was brought about by a revolt against the domination of "the Chicago clique" in the Association, but whether so or not, the decisive vote of 90 to 29 showed that Dr. Gorgas was the choice of a large majority of the delegates, and there is no question that his election will receive the cordial approval of the profession of the country.

Dr. Gorgas was born in Mobile, in 1854, but New York can claim him as one of her medical sons, for he was graduated from the Bellevue Hospital Medical College in 1879, and served on the house staff of Bellevue Hospital during the year following his graduation. He was appointed assistant Surgeon in the Army in 1880, promoted Captain in 1885, and was made Surgeon, with the rank of Major, in 1898. His experience with yellow fever began in 1882, when he was Post Surgeon at Fort Brown, Texas, and himself suffered from the disease during the epidemic which prevailed at that post that year. During the Spanish War he served on the hospital ship Relief, and later was placed in charge of the yellow fever camp at Siboney, Cuba. His work there was interrupted by an attack of typhoid fever, but immediately after his recovery he was sent to Havana, to serve as Chief Surgeon of the Department and Sanitary Officer of the city. Although not a member of the Army Commission, he followed closely and sympathetically the work of Major Reed and his associates in demonstrating Finlay's theory of the agency of the mosquito in the spread of yellow fever, and when the work of the Commission was concluded he put its findings into practice with the result of freeing the city from the pest which had held it in its deadly grip for centuries. But he did more than this—he demonstrated to the world that the great scourge of the tropics could be eradicated, and that henceforth the presence of yellow fever in any city was to be regarded as a disgrace to the sanitary authorities. When this country undertook the completion of the Panama Canal, it was recognized that success in the undertaking was only possible through the suppression of disease, especially yellow fever and malaria, and that Gorgas was the man to accomplish this work. For a time he was hampered by the ignorant opposition of the Panama Commission, a fact which was revealed to the country by the "indiscretion" of Dr. C. A. L. Reed, who had been to the Isthmus, and unofficially told what he had seen there. Then Gorgas was made a member of the Commission, and given full power to effect sanitary reforms; and the work in Havana was repeated in Panama and Colon, with the inevitable result that now the Isthmus is safe for Northern workers, and the completion of the canal is assured.

For his service in ridding Havana of yellow fever, Dr. Gorgas was promoted Colonel and Assistant Surgeon-General of the Army by special act of Congress in 1903. This work, as well as that done in Panama, has been described by Colonel Gorgas and others in a number of articles published in the MEDICAL RECORD since 1901, and a most interesting chapter it is in the history of sanitary service. The President-elect of the American Medical Association is a man of few words but of great deeds, and, judged by what he has accomplished, he is far and away the foremost sanitarian of his day. He has conquered the disease which made tropical cities the graveyards of Northern men, and on the Isthmus of Panama he has also reduced the malaria mortality, so that it is no longer a menace to the man who observes proper precautions. The election to the Presidency of a man of such proved executive talent augurs well for the future of the American Medical Association.

OCCULT BLOOD TESTS.

SMALL amounts of blood in the stomach contents or feces are detected with difficulty as the red cells are quickly destroyed in the gastrointestinal tract, yet the recognition of the presence of traces of blood is often of extreme importance in diagnosis. In the *Centralblatt für die Grenzgebiete der Medizin und Chirurgie* for May 7, 1908, L. Isler reviews the entire literature regarding the various tests for occult blood, and comes to the conclusion that all the microchemical tests (Teichmann's, etc.) have the disadvantage that negative results do not mean an absence of occult blood. All observers agree that the extraction tests are the best, and of these the guaiac, aloin, and benzidin tests are most frequently used, the last mentioned being the best in that it is the most sensitive and the easiest to carry out. Isler considers the presence of occult blood in the feces of greater value than that in the gastric contents, as the stomach tube, which often causes bleeding, is not used, and as it is easier to exclude bleeding from the respiratory tract, mouth, pharynx, and nose. Meat, even when cooked, will give the blood reaction both in the gastric contents and in the feces, so that a positive test is of value only when the patient has not been given meat or meat products for from three to ten days.

Isler also discusses all publications concerning the conditions under which occult blood has been found. It is usually found in patients with ulcers or ulcerating carcinoma of the gastrointestinal tract,

and in patients with pyloric stenosis of benign or malignant origin when particles of meat may remain in the stomach for a long time and are then the cause of the positive test. When the gastrointestinal tract is engorged as a result of cardiac disease, occult blood is usually found. The test is of value in differentiating between gastric ulcer and gastric neuroses, also between gastric ulcer and cholelithiasis, it always being negative in neuroses and cholelithiasis. A positive test, good motility, and absence of free hydrochloric acid point toward a carcinoma of the stomach even though no tumor is palpable. Of course in all cases in which the test is to be of value it must be repeated frequently and always after all other sources of hemorrhage are excluded and after a patient has been abstaining from meat for three days or longer.

Isler's review leaves no doubt that repeated positive tests for occult blood, provided all sources of error can be excluded, point to a pathological condition, and that they may frequently be of value in the differential diagnosis of diseases of the digestive organs.

SOME PHASES OF THE OPHTHALMO-TUBERCULIN REACTION.

The medical journals still contain many articles giving the clinical experience of authors with the ophthalmo-tuberculin test of Calmette. At present the only conclusion that can be drawn from their perusal is that the reaction in question is of value as one point in the general clinical and laboratory picture leading to the diagnosis of tuberculosis. Its final significance can be established only by further observation, and the time has come when an agreement upon the technique to be used in eliciting the reaction is to be thought of in order that the results obtained by the different observers may be at all comparable.

Floyd and Howes (*Journal of Medical Research*, No. 4, Vol. XVII) state correctly that a positive test obtained with the weakest solution is of most value and recommend the use of two saline solutions of the alcoholic precipitate of tuberculin, of 0.33 per cent. and of 0.5 per cent. strength, respectively. The weaker tuberculin is to be first instilled into the left eye, and if no result is obtained, the right eye is to be used for testing with the stronger solution. A few points noticed by those authors in their work are of interest to others trying this diagnostic method. Advanced cases of tuberculosis and cases under treatment with injections of tuberculin often fail to give a positive reaction, while apparently normal persons who have for a long time been in close contact with tuberculous patients may react positively. The cases in the first category are explained by the antituberculin immunity produced by the injections and in advanced cases by the exhaustion of the body resistance to the toxin; of the apparently healthy cases that reacted it is to be assumed that foci of disease undiscoverable by clinical methods exist in them, which assumption is strengthened by the history of long exposure to infection given in these cases. The final conclusion of the authors is that the old method of using tuberculin is more accurate in cases where the general susceptibility to tuberculin is slight; the ophthalmo-reaction, however, possesses the great advantage of simplicity over the old method; moreover, it may be used in acute febrile conditions, where the presence of fever prevents the use of tuberculin subcutaneously.

In another publication (*Journal of Experimental Medicine*, No. 2, Vol. X) McCampbell and White give the results of applying the Calmette test to the diagnosis of tuberculosis in cattle. Calmette's tuberculin preparation produced no results, and a special tuberculin procured from the United States Department of Agriculture had to be employed. A quarter of a cubic centimeter of this was used, in full strength, and the characteristic reaction was obtained in a sufficient number of cases to show that the method will probably be of value. Findings parallel to those discussed above were again noticed: the previous use of tuberculin subcutaneously interfered with the ophthalmo-reaction and advanced cases reacted less intensely than incipient ones. The authors are continuing with their investigations, and promise to give further data in the near future. Such work will be followed with great interest. The question of bovine tuberculosis and its relation to the human disease is still a debatable one, and the observations of the ophthalmo-reaction in cattle with the use of various tuberculins may throw additional light upon this vexing problem.

Typhoid Bacilli in the Blood of Nontyphoid Patients.

The finding of typhoid bacilli in the blood of a patient suffering from some obscure symptoms leads naturally to the diagnosis of the disease as typhoid fever. That the conclusion, however, may be only partially correct seems to be shown by the experience of Busse, reported in the *Münchener medizinische Wochenschrift* of May 26, 1908. In two patients with atypical intestinal and toxic symptoms the bacteriological examination of the blood showed the presence of typhoid bacilli, and thus led to the diagnosis of typhoid fever. The autopsy, however, disclosed the existence of miliary tuberculosis with many intestinal ulcers as the principal disease and the probable cause of death. Moreover, other findings spoke against the assumption that the tuberculosis was merely a complication, a terminal infection of a typhoid fever patient. The Widal reaction was negative during life, the intestinal ulcers and the mesenteric lymph nodes were tuberculous in nature, the spleen showed no characteristic changes of typhoid fever, and in one case, indeed, it contained tubercles. No history of a previous typhoid infection could be obtained, and the only plausible explanation was that the patients were chronic typhoid bacilli carriers, in whom the tuberculous disease gave the bacilli a chance to penetrate into the tissues and into the blood. In two other cases, one of chronic tuberculosis, and one of acute lobar pneumonia, typhoid bacilli were found in the blood in the absence of any clinical picture of typhoid fever. Busse's conclusion, of course, is that the presence of typhoid bacilli in the blood is not a positive sign of typhoid fever. This finding is extremely interesting, but disappointing to the clinician, for it seems that even a positive blood culture does not always clear up an obscure case of infectious disease.

Relief of Pain Following a Laparotomy.

Every surgeon comes to realize the frequency with which postoperative symptoms appear after laparotomies and the difficulty of treating them. As these symptoms are usually explained by the presence of adhesions, their prophylaxis has consisted in rest to the bowels after the operation, and their therapy in various procedures designed to break up the adhesions, among them massage, high irrigations, hydrotherapy, etc. M. Jerusalem (*Münchener medizinische Wochenschrift*, May 26, 1908) has tried Bier's hyperemic treatment for this troublesome condition; he uses a large suction bell, applying it over the cicatrix for twenty to thirty minutes, every two or three days. In over twenty cases the results were surprisingly good and very rapidly attained, in comparison with older methods of therapy. Experiments on the cadaver showed that the effect of the suction was not limited to the abdominal walls, for the intestines were likewise lifted up and made part of the tissues that filled the mouth of the bell. However that may be in the living person, the technique of this treatment is so simple that it ought to be widely tried in suitable cases. If the author's results are corroborated, it will prove a boon both to the patient and to the weary surgeon, whose successful operation is often marred by the obstinate persistence of postoperative symptoms.

Fluids in Nephritis.

Physicians differ as yet in reference to the advisability of allowing much fluid in the diet of nephritics. Oertel, and after him v. Noorden, have especially recommended the reduction of fluids in order to save as much as possible the overworked heart of nephritis; Krehl, Romberg, and others, on the other hand, deny any harmful result of an abundant supply of fluid in such cases. H. Strauss, writing in the *Berliner klinische Wochenschrift* for May 25, 1908, shares the views of the latter authors, believing that the normal adaptation processes of the organism are perfectly capable of preventing the overfilling of the blood-vessels, which might result in additional burden to the heart. Indeed, Strauss thinks that the fluid may serve a useful purpose in diluting the poisons that develop in the body during nephritis, and that may lead to the clinical picture of uremia. Large quantities of fluid, however, must not be given at once, but rather, much fluid should be administered in small portions throughout the day. If dropsy is present, the salt-free diet offers a much better chance of controlling it than the diminution of fluid. While the latter may be also practised in the usual cases, it is distinctly contraindicated when uremia is threatening; toxemia then is a greater danger than dropsy, and water ought to be freely given.

News of the Week.

A Psychiatric Clinic at the Johns Hopkins.—Mr. Henry Phipps has given to the Johns Hopkins Hospital funds for the erection and equipment of a psychiatric clinic, to be administered as a part of the hospital. A four-story building will be erected on the hospital grounds to accommodate sixty ward patients, together with rooms for private patients, laboratories, etc. In addition, Mr. Phipps will provide for the maintenance of a medical and nursing staff, including salaries for a professor of psychiatry and assistants, and other expenses, for a period of ten years. The amount of the sum to be appropriated for this purpose is not stated, but it is understood to exceed half a million dollars. In his letter to Dr. Welch, announcing his gift, Mr. Phipps says that it is his desire that in the admission of patients to the hospital preference should be given to applicants from Baltimore and from those cities with which his life and work have been closely associated —Pittsburg, Philadelphia, and New York. About a year ago Mr. Phipps gave $30,000 to the Johns Hopkins for a tuberculosis hospital. He also established the Tuberculosis Institute in Philadelphia, and three years ago gave $1,000,000, to be taken in charge by a commission and used to provide model tenement houses for the workingmen of New York.

Public Health in the Republican Platform.—The following is the very thin plank in the platform adopted by the Republican Convention in Chicago relating to the Government control of public health: "We indorse the movement designed to secure the organization of all existing national public health agencies into a single national health department, and favor such legislation as will effect this purpose."

Pure Milk Laws.—The recommendations of the Milk Commission appointed by Mayor McClellan last year have been adopted by the New York Board of Health in formulating new regulations to govern the city's milk supply. The rules provide that all milk containers shall bear a label or tag stating the location of the creamery or dairy from which they have been shipped and the date of the shipment; and that skim milk may be brought into the city, to be used for manufacturing purposes only, provided that the milk be for sale only in cans holding forty quarts, which shall be colored bright blue and bear the words "skimmed milk." The pasteurization of milk is to be carried out only under a permit from the Board; the milk, after being pasteurized, must be at once cooled and placed in sealed containers, which must be plainly labeled, giving the date and hour of pasteurization, the degree of heat to which the milk has been subjected, and the time of the process. Milk may be marketed also under the two grades, "selected" and "guaranteed." "Selected" milk must be from herds free from any disease of the udder or clinical signs of tuberculosis, must contain not more than 60,000 germs per c.c. in winter, nor more than 100,000 per c.c. in summer, and be delivered to the consumer only in sealed bottles labeled with the date of the earliest milking the product of which forms part of the contents, and within thirty-six hours after the milking. For guaranteed milk the minimum requirements are that the herd shall contain only cows which have not reacted to tuberculin; that the milk shall not contain more than 30,000 germs per c.c. when delivered to the consumer, and that it shall be delivered only in sealed bottles, plainly labeled, within thirty-six hours after milking.

Pasteurized Milk in Dublin.—Through the generosity of an American, Mr. Nathan Straus, a laboratory for pasteurizing milk was opened on May 29 in the City of Dublin, to be operated under the direction of the Women's National Health Association. At a meeting held in the Mansion House, the residence of the Lord Mayor of London, on that evening, Dr. Arthur Randolph Green of New York delivered a lecture on the efficacy of pasteurization in reducing the infant death rate. The movement has been widely indorsed in Ireland, and the Lord

Lieutenant has become interested, as well as the Lord Mayor and other prominent persons.

Canine Vagrants.—The recent hydrophobia scare in New York has called forth the statement that there are 150,000 homeless dogs in that city, and this, in spite of the fact that the Society for the Prevention of Cruelty to Animals reports that it takes to its shelters every day from 275 to 300 dogs and cats, nearly all of which, being unclaimed, are asphyxiated. During the past four months it seized 10,500 animals, mostly dogs. As has been suggested, this number of homeless dogs, while perhaps not too large for the City of Constantinople, where the dogs constitute the only street cleaning department in evidence, is entirely too great for New York, where official scavengers are employed.

Bombay Medical Congress.—It is announced that a medical congress, having special reference to tropical diseases and sanitation as applicable to India, will be held at Bombay in February, 1909. The session will extend over four days, and the scientific work will be divided between six sections. Among the subjects to be discussed will be plague, typhoid fever, relapsing fever, tropical diarrheas, differential diagnosis of the various types of malarial fever, dysentery, the pathological conditions dependent upon invasion of the Leishman-Donovan body, the part played by parasitic insects (other than fleas and mosquitos) in the dissemination of diseases peculiar to the tropics, the clinical and pathological effects of snake venom; beriberi, elephantiasis, mycetoma, leprosy, cholera, tropical surgery, and sanitation applicable to India. The General Secretary of the Congress is Lieut.-Col. W. E. Jennings, I.M.S., care Messrs. King, King & Co., Fort, Bombay, India.

The Plague in Caracas.—Several cases of bubonic plague have occurred in various parts of Caracas, indicating that the city is widely contaminated. Owing to the proclamation by President Castro that Venezuela is free from the plague, all sanitary precautions were abandoned, and, in consequence, an extensive epidemic is feared. The President himself remains in the interior of the country, at a safe distance from Caracas and La Guayra.

The Academy Library.—The following are extracts from the rules governing the use of the library of the New York Academy of Medicine by others than members of the academy:

By-Law XIII. Section 7. Candidates for fellowship, after announcement by the Committee on Admission, may be granted the privileges of the library, on the payment of a fee of $20 a calendar year or pro rata in advance. The amount so paid in a given calendar year shall be deducted from the candidate's admission fee if he be elected to Fellowship in a calendar year for which the fee was paid.

Section 8. Any person approved by the Library Committee and by the Council, may become an annual subscriber on such conditions as the Council may impose. Annual subscribers shall be entitled to a card giving the privileges of the library, good for one year from the date of their acceptance.

Section 10. The privilege of consulting the library, but not taking out books, may be granted for one month, when authorized by a card signed by the Executive Librarian or his representative, on written request by the applicant, to accredited representatives of Fellows of the Academy on application by the latter. No one shall be introduced under the provision of this section more than once in six months, except by special permission of the Council.

Section 15. The library shall be open to the public from 9 A.M. to 2 P.M. Fellows and persons included in Sections 7, 8, and 10 shall have access to the library from 9 A.M. to 10:30 P.M.

The fee of annual subscribers is now fixed at $20 a year.

"Suggestion" versus Miracles.—In a lecture on the miracles of Lourdes, recently, the Abbé Coubé distinguished between functional and organic disease, limiting the power of "suggestion" to the former, while stating that 650 cases of organic disease, chiefly cancer and tuberculosis, had been completely cured at the shrine.

Nurses Help Hospital.—Because of a lack of funds at St. Mark's Hospital, New York, and an insufficient response to an appeal sent out some time ago, the twenty-five nurses of the institution, graduates and training school pupils, have offered their salaries for the next three months to help the hospital over the hard times. Six thousand dollars is needed. In addition to its ward work, St. Mark's has a large out-patient service. It has also, since 1890, given out 32,955 free meals to hungry persons applying at the hospital.

Eye Tests for Chauffeurs.—The Marceilles Medical Society, believing that many automobile accidents are due to defective vision, has strongly recommended to the French Government that no chauffeur be granted a driver's license without first undergoing an eyesight test similar to the one employed for locomotive drivers.

Dinner to Dr. Martin.—Dr. August Martin of Berlin was the guest of honor at a dinner given on June 10 at the Hotel Astor, New York, by about fifty American physicians. Speeches were made by Drs. Clement Cleveland, Howard A. Kelly, Edwin B. Cragin, and B. H. Wells. Dr. Martin was present at the meetings of the American Medical Association at Chicago, and of the American Gynecological Association at Philadelphia recently.

Summer School at St. Louis.—For the first time in its history, the medical department of the St. Louis University has opened a summer school, which is to be continued during a six weeks' session. The school is elated over the fact that in the examinations for internes for the city hospitals twenty-one of the thirty-two appointments were given to its graduates.

Raising Standard at Cornell.—In his address to the graduates of the Cornell Medical College at the tenth commencement, on June 10, President Schurman of the university announced that, beginning with this year, only those holding the degree of B.A. or B.S. would be eligible for admission to the college. While foreseeing a diminution in numbers, he looked forward to securing much higher quality. In any event, he said, the Cornell Medical College was meant for the training, not of the average candidates, but of those characterized by marked mental endowments and good liberal education. The graduating class numbered fifty-seven, of whom one was a woman.

Long Island College Hospital.—The dean of the college, on June 9, conferred the degree of Doctor of Medicine on eighty-four graduates, sixty-two of whom have received hospital appointments.

Commencement Exercises.—The annual commencement exercises of the medical department of the University of Illinois (College of Physicians and Surgeons) were held June 9. Dr. Rudolph Matas of New Orleans delivered the doctorate address.

New Hospital for South Chicago.—The President of the South Chicago Hospital Association was

authorized at a recent meeting to advertise for bids for the construction of a building at a cost of $40,000.

New Hospital Stone Laid.—The Harlem Eye, Ear, and Throat Infirmary, having outgrown its present quarters, the cornerstone of a new building at Lexington avenue and One Hundred and Twenty-seventh street, New York, was laid on June 13 by Bishop Greer. The building will consist of two stories and a basement, and will cost $25,000. The first floor is to be used for offices and operating-room, and the second for wards. The institution was founded in 1881.

Strict Rules for Hospitals.—The City Council of Chicago recently passed the ordinance of Health Commissioner Evans, making more stringent the regulations governing hospitals. The ordinance creates an Advisory Board, consisting of the Commissioner of Health, the Fire Marshal, and the Commissioner of Buildings, whose duty it shall be to pass on the plans for a hospital. Maternity hospitals are defined so rigidly as to put out of business the numerous fake institutions now masquerading under this classification. All hospitals in the future will be required to make daily reports of the cases they receive. The license fee is fixed at $100 a year, but those institutions treating 10 per cent. of their cases free may obtain a refund of the license money. The penalty for violations is from $25 to $200 for each offense.

The New York Dispensary.—After an existence of nearly 118 years, the New York Dispensary, on June 8, moved from its quarters on Centre street to its new home at 180 Grand street. The Wickham Diet Kitchen, which has been maintained at the same place by the New York Diet Kitchen Association, moved with it. The old building is being torn down to make way for subway improvements.

Damages on Account of X-Ray Burns.—A man in Chicago has been awarded damages to the extent of $10,000 against the Lakeside Hospital, for burns which he suffered while submitting to *x*-ray treatment.

Tuberculosis Campaign.—The Department of Health of New York has instituted a series of stereopticon lectures, to be given in the public parks of the city as a part of its plan of education in the war against tuberculosis. The work is under the direction of Dr. John S. Billings, Jr.

Koch at Leper Colony.—In the course of his trip around the world, Prof. Robert Koch has made a visit to the famous leper settlement on the Island of Molokai, the scene of Father Damien's labors. A thorough inspection of the buildings and of the conditions of the lepers was made.

Recognition of Osteopaths.—The Appellate Division of the Supreme Court of Brooklyn has sustained the decision recognizing osteopathy as a regular school of medicine in the proceedings brought against the Board of Health because of its refusal to accept a death certificate signed by an osteopath. The case will probably be carried to the Court of Appeals.

Dr. L. Webster Fox, Professor of Opthalmology in the Medico-Chirurgical College, Philadelphia, has received from Dickinson College the honorary degree of Doctor of Laws.

Consolidation of Edinburgh Medical Journals.—The *Scottish Medical and Surgical Journal*, which was founded a little over ten years ago as a protest against nonprofessional control of the old established *Edinburgh Medical Journal*, has become merged with its rival, which continues under its old name.

Vital Statistics of Pennsylvania.—According to the first annual report of the Commissioner of Health of the State of Pennsylvania, covering the period from June, 1905, to December, 1906, there were 10,780 deaths due to tuberculosis. Pneumonia and other diseases of the respiratory system constitute a good second, while violence, with 10,180 deaths, forms the third largest group. Seven hundred and eighty deaths were due to suicide, and seven of these occurred in persons under fifteen years of age, the youngest being twelve years old. Homicide shows a steady tendency to increase, not alone in Pennsylvania, but throughout the entire registration area of the United States. Cholera infantum is fourth in the list of the causes of deaths, one child in forty under the age of two years dying from this disorder. There is reason to believe that births are not reported with the same degree of accuracy as deaths, but, according to the statistics, the annual increase in population is about 50,000. The evidence, however, goes to show that in Pennsylvania, in common with other parts of the United States, and with certain foreign countries, there has been a gradual reduction in the birth rate. The average age at which women were married in Pennsylvania during the year 1906 was 24.5, while 32.2 per cent. of first born children occurred in women more than twenty-five years old. Under liberal use of antitoxin, which was supplied gratuitously by the State to impecunious persons, the mortality from diphtheria was reduced from 40 per cent. to about 11 per cent.

New Medical Society.—In order to bring the women physicians of Colorado into closer fellowship, the Women's Colorado State Medical Society has been formed, and articles of incorporation filed. Membership is open only to women who are already members of the State Medical Society.

Ontario Medical Association.—At the annual meeting of this society, held on May 27, at Hamilton, Ontario, the following officers were elected for the ensuing year: *President*, Dr. H. J. Hamilton, Toronto; *First Vice-President*, Dr. R. R. Wallace, Hamilton; *Second Vice-President*, Dr. A. Dalton Smith, Mitchell; *Third Vice-President*, Dr. A. M. MacCaul, Collingwood; *Fourth Vice-President*, Dr. George Field, Cobourg; *General Secretary*, Dr. E. Stanley Ryerson, Toronto; *Assistant Secretary*, Dr. J. E. Davey, Hamilton; *Treasurer*, Dr. J. H. Mullins, Hamilton.

The Upper Cumberland (Tenn.) Medical Society held its annual meeting on May 26 and 27. The following officers were elected: *President*, Dr. B. S. Rhea, Bon Air; *Vice-Presidents*, Dr. J. T. Moon, Algood; Dr. T. J. Potter, Smithville, and Dr. W. M. Breeing, Livingston; *Secretary*, Dr. V. L. Lewis, Crossville; *Treasurer*, Dr. R. E. Lee Smith.

Belknap County (N. H.) Medical Society.—At the annual meeting of the Belknap County Medical Society, held on June 1, the following officers were elected: *President*, Dr. A. J. Lafrance; *Vice-President*, Dr. E. P. Hodgdon; *Secretary*, Dr. A. H. Harriman; *Treasurer*, Dr. T. B. Cook.

The Medical Society of the Utah State University, at the meeting held on May 25, elected the following officers for the coming year: *President*, E. L. Peterson; *Vice-President*, W. W. Beck; *Secretary and Treasurer*, Lourrine Miles; *Executive Committee*, A. L. Leonard and F. D. Stewart.

The Late Dr. Farrington.—At a meeting of the

Harlem Medical Association, held June 3, 1908, the following minutes and resolutions were adopted:

Whereas, Death has removed from among us a former President, and one of the founders of the Association, Dr. Joseph Oakley Farrington, unusually long and favorably known and highly respected by us; therefore, be it

Resolved, That we deeply regret the loss the Association has sustained in the death of its Second President, who enjoyed the fruits of his profession for over half a century.

Resolved, That the Association extends its sympathy to the family of the deceased, and that a copy of these resolutions be spread in full upon the minutes of this Association; that they be forwarded to his family, and also be sent for publication to the medical journals of this city.

(Signed) Joseph E. Lumbard, M.D.,
Michael C. O'Brien, M.D.,
Edmund L. Cocks, M.D.,
Ex-Presidents of the Harlem Medical Assn.

Obituary Notes.—Dr. William Hazard Sherman of Yonkers, N. Y., died on June 11, after a long illness, at the age of forty-nine years. Dr. Sherman was a graduate of the College of Physicians and Surgeons, New York, in the class of 1884, an alumnus of the Presbyterian and St. Luke's Hospitals, and an attending surgeon to St. John's Riverside Hospital, Yonkers.

Dr. George La Breche Smith of New York (Laval, 1890) died at his home on June 13, of gastritis.

Dr. Walter Hunn Nardin of Anderson, S. C., died on May 30, at the age of seventy-one years. Dr. Nardin was graduated from New York University in 1860, and had practised in Anderson from his graduation until two years ago. During the war he served as Assistant Surgeon in the Confederate Army. He was the founder of the Anderson Hospital, and at one time was President of the State Medical Society, and a member of the State Board of Health.

Dr. Jacob E. Schadle of St. Paul, Minn., died on May 29, following a paralytic stroke a short time ago. He was in his sixtieth year. Dr. Schadle was a graduate of Jefferson Medical College, 1881, and an authority on diseases of the throat and nose, occupying the position of professor of laryngology and rhinology in the College of Medicine of the University of Minnesota. He had accepted an invitation to speak before the International Medical Congress at Budapest in 1909, on the etiology and treatment of hay fever, a subject in which he had been deeply interested.

Dr. William H. Christie of Omaha, Neb., died on May 28, at the age of sixty-four years. Dr. Christie was a veteran of the Civil War. He was graduated from the Rush Medical College in 1868, and for twenty years had held the chair of materia medica and therapeutics in the Medical College of the University of Nebraska, but was forced to resign in 1907, owing to failing health.

Dr. James Coe Culbertson of Cincinnati, Ohio, died at his home on June 4, from arteriosclerosis, at the age of sixty-seven years. Dr. Culbertson was a graduate of the Bellevue Hospital Medical College in the class of 1865, having served during the war first as private and hospital steward, and later as assistant surgeon. From 1891 to 1893 he was editor of the *Journal of the American Medical Association*, and since 1893 professor of the principles and practice of medicine in the Cincinnati College of Medicine and Surgery. He was for many years editor of the Cincinnati *Lancet-Clinic*.

Dr. Robert Watts, Jr., of New York died at his home on June 8, of chronic kidney disease, at the age of forty-two years. Dr. Watts was graduated from the College of Physicians and Surgeons in 1893, and served as interne at Bellevue for two years. He was assistant attending physician at St. Mary's Hospital for Children at the time of his death.

Dr. Arthur A. Barrows of Hackensack, N. J., died on June 7, after being stricken with apoplexy in a Broadway subway train. He was sixty-eight years old, and was a graduate of the College of Physicians and Surgeons in the class of 1870.

Dr. L. B. Martin, one of the pioneer physicians of Iowa, died at his home in Des Moines on May 28, at the age of seventy-six years.

Dr. Winfield S. Colby of Cadiallac, Mich., died at his home on May 27, from tuberculosis, at the age of 31. He was a graduate of the Northwestern University in 1905.

Dr. Daniel M. Hurley of Norwood, Mass., died on May 31, after an illness of five months from Bright's disease, at the age of 44 years. He was graduated from Bellevue Hospital Medical College in the class of 1894.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GENERAL MEDICAL COUNCIL — MEDICAL SOCIETY'S CONVERSAZIONE AND ORATION—AFTER EFFECTS OF INJURIES—SURGICAL TREATMENT OF SCIATICA—OBITUARY.

London, May 29, 1908.

The General Medical Council met for its eighty-seventh session on Tuesday when the President, Dr. Donald McAlister, delivered his address. He stated that the difficulties in the way of reciprocity with the Province of Quebec had been removed by the spontaneous action of the local authorities. He learned that the War Office was prepared to grant Quebec graduates the same facilities for entering the army medical service as were enjoyed by Nova Scotia graduates and it was hoped the other provinces would consider the question from a national point of view. The President further referred to the difficulty of obtaining legislation to restrain unqualified practice and other evils affecting the profession. The executive committee brought up a report on reciprocity with Quebec which was approved by the Council, as stated in the President's address. The effect will be that the degrees of McGill and Laval Universities will be recognized here under the conditions prescribed in the medical act.

On Wednesday there was a rather unusual event, bordering on the comic but very well illustrating respect for law. Dr. McAlister having resigned his position of representative of Cambridge University had been appointed to the corresponding post for Glasgow University. The legal advisers of the Council considered resignation of the Cambridge seat vacated the presidential chair. With mutual compliments between himself and his colleagues he accordingly resigned the presidency and was immediately reelected.

The financial position of the Council has improved considerably and there is a surplus, although further expense has been incurred for the convenience of the press. Councillors have always seemed anxious to have their speeches reported at length, though when we consider the true function of the Council and its powerlessness to enforce its recommendations, it rather resembles a debating society than a legislative body.

The conversazione and annual oration of the Medical Society of London took place on the 18th inst. As I have already reported, the Fothergillian gold medal was on this occasion formally handed to Sir. A. Wright. After this the oration was delivered by Mr. Clinton Dent, who managed to infuse interest into a subject seldom discussed—viz.: The after-effects of injuries. The effects of railway injuries are indeed, as he said, often enough argued in the law courts, but the later consequences do not always follow the course predicted by experts. Even men engaged in hospital practice might not realize the importance of some cases. A simple fracture of the leg, especially if both bones were broken, would serve as an illustration

of this point. The patient might be seen on admission, during treatment and once or twice afterwards. Later on it might be found that the results were not so good as had been anticipated and the patient might not be able to resume his former employment. Under the recent legislation employers might be reluctant to take the risk of further accident and the workman who had received compensation might find that the sum awarded him was not the benefit he at first thought. Mr. Dent was of opinion that the early fixation in plaster, for a time thought sufficient for sound union, might delay restoration longer than other methods. From the wage-earner's point of view a broken leg was very serious. It kept him from following his employment for some six months, even if his work was not very exacting, and if he should break down after beginning he would come to be regarded as a damaged person and as such would certainly find great difficulty in obtaining even light employment. The orator thought that the attitude of hospitals to such injuries was changing and those in charge considered them from an educational point of view. He acknowledged that simple fractures usually excited little interest, though they were by no means neglected. Still surgeons perhaps supervised them less closely than cases of greater clinical value. This is a point worth consideration and I can endorse and emphasize Mr. Dent's view. A man I know followed the surgeons pretty regularly as a student for about a year without having the chance of seeing a fracture put up or hearing any remarks beyond a question to the house surgeon as to the progress of a case from time to time. Of course cases were put up by the resident on arrival and little could be learned until clinical clerking or residing began. After discharge nothing more was heard of them. But to return to Mr. Dent's views. He observed that a fracture involving the ankle joint would in almost every instance gravely affect the wage-earning capacity of a working man. He also referred to injury to the head, quoting the time-honored maxim that no such accident is "too trivial to be despised nor too serious to be despaired of." Everyone accepts this, but too often in apparently trivial cases the lesson is enforced by practical neglect of its wisdom. Again everyone recognizes the value, in fact the essential necessity of rest. It was agreed that rest should be protracted, but it did not appear to be sufficiently recognized that it should be prolonged in proportion to the responsibility attached to the patient's occupation and to his normal mental capacity for bearing the same.

The treatment of sciatica is so often unsatisfactory and when severe the sufferings of the victim so acute that it is small wonder physicians were disposed long since to hand over the cases to their surgical confrères. But stretching of the nerve, proposed more than thirty years ago and tried in numerous cases, has been disappointing. Another has been introduced by Dr. J. Crawford Renton, who gave an account of it to the surgical section of the Royal Society of Medicine on the 12th inst. A medical man who had had his nerve previously stretched with only slight benefit consulted Dr. Renton in 1895. He suggested that the nerve might be again exposed and thoroughly examined. The patient being a medical man could judge for himself and having suffered much begged Dr. Renton to expose the nerve and at the same time to extend his exploration to the popliteal nerves. Accordingly, Dr. Renton carried out the suggestion, exposing the sciatic by the usual incision. It was surrounded by adhesions extending up to the sciatic notch; one was one and one-half inches in length and breadth and extended from the nerve to the ischial region. This was divided with scissors and its attachment to the nerve cut away. Others were removed by stripping from the notch to the middle of the thigh. The external and internal popliteal nerves were also exposed and found to be normal. The patient made an excellent recovery and was working and bicycling in a month. He has continued well up to the present time —thirteen years. Dr. Renton said it was evident that stretching the nerve, even to the extent of raising the patient from the operating table, would have been useless in this case. He has since operated on thirty-two cases with benefit to all and they all remain well. He is very careful not to stretch the nerve more than absolutely necessary to completely remove all the adhesions. He thinks the best cases for the operation are those in which pain is absent when the patient is at rest but comes on when an attempt to walk is made. In these he has observed after subsidence of the acute symptoms, absence of tenderness on pressure along the line of the nerve. In reply to remarks by members Dr. Renton said there was no trouble of reformation of adhesions, if the thick ones were cut away and the others stripped off. He admitted there was also a future for electricity in many cases.

Dept. Surg.-Gen. H. R. L. Veale, M.D., died on the 22nd inst. at the age of 76. The deceased officer was a graduate of Edinburgh University, 1853. He entered the army in 1855 and retired in 1883; he saw service in the Indian Mutiny, 1857-8, and was severely wounded at the relief of Lucknow. He also served in the Egyptian Expedition of 1882. He was for a time Assistant Professor of Military Medicine at Netley and author of the "Notation Case Book" and "Bombay Medical Code." He contributed to the *Army Medical Report* on the "Fevers of Cyprus, Malta and Gibraltar," 1879, and on "Palpitation in Soldiers," 1880, as well as various communications to the Journals.

Dr. F. Rutherfurd Russell, Surgeon to the Royal Surrey Hospital, died on the 10th inst. after a short illness, aged 55. Educated at Edinburgh, he graduated, M.B., C.M., 1878, and proceeded to M.D. 1880.

Dr. F. J. Turnbull, of Kelso, was seized with an apoplectic attack when visiting a patient and died the next day, 10th inst. He was Surg.-Lt.-Col. in the Scottish Border Volunteers and a Lt.-Col. in the Medical Reserve.

Another death from apoplexy is that of Dr. J. W. Carpenter, of Goudhurst, Kent, who was seized while gardening on the 14th inst. and died before professional aid arrived. He was 79 years of age, took the double qualification in 1859 and M.D., St. And., 1862.

Dr. David Thompson, J. P., died on Wednesday, æt. 76 He was for nineteen years coroner for Cornwall and had served as Mayor of Launceston, of which borough he was a Justice of the Peace, as well as of the county. He had also been an active volunteer and a Brigade-Surgeon-Colonel.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

HUMAN TRYPANOSOMIASIS—NEW OPIUM LAW—ENFORCEMENT OF THE PURE FOOD LAW—PRESERVATIVES OF BUTTER IN THE TROPICS—ABSENCE OF CHOLERA—ARTESIAN WELL SUPPLIES IN THE PHILIPPINES.

MANILA, P. I., April 2, 1908.

THE case of human trypanosomiasis which was reported at the last annual meeting of the Philippine Islands Medical Association by Mr. F. H. Willyoung, has been the object of considerable research both on the part of the Bureau of Health and of the Bureau of Science, but so far these efforts have not yet been rewarded with success. It will perhaps be remembered that the slide with the trypanosomes was obtained from some blood specimens which were taken for the purpose of ascertaining whether lepra bacilli were present in certain persons who were suspected of being afflicted with leprosy. From a number of such persons additional slides were taken, which were not examined until some days later at the main laboratory, and unfortunately in the transmission of the slides, the identification marks had become obliterated, so that it could not be definitely ascertained from whom the specimen came. By a process of exclusion, however, it was thought that the slide in question came from one of a number of persons who resided in the province of Albay and who were afflicted with elephantiasis. All these patients have now been reexamined with the exception of one, and they have all proved negative for trypanosomes. The one who was not examined died several weeks before the microscopist again arrived upon the scene, and it is, of course, not known whether this was the person from whom the specimen in question was taken. That the disease, however, is not prevalent in that section of the islands would seem apparent from the fact that large numbers of blood examinations were made of the residents of that district, and so far no trypanosomes have been encountered. The particular slide which contains the trypanosomes is in the possession of the Bureau of Science, and was exhibited at the Philippine Islands Medical Association, and seen by many persons who were familiar with the organism, and they all concurred in the diagnosis of the specimen.

The opium law which was enacted by the United States Congress and which has for its object the complete abolition of the use of opium in the Philippine Islands except for strictly medicinal or scientific purposes, became effective March 1, 1908. During the past year this law was put into force gradually by a system of taxes which increased almost from month to month until the sale of the drug was prohibited. It was hoped that in this way the opium habitués would themselves be compelled to reduce the amounts which they used. In addition to the foregoing, the government made arrangements to treat any person free of charge and pay

their transportation to and from the hospital who desired to be relieved of the habit. Up to the present time 233 patients of this kind have come under observation, and of these 186 have been discharged as cured. So far as it is possible to ascertain, no great hardships were caused by the withdrawal of the drug. Whether conditions are as favorable as surface indications would seem to show is, of course, not known yet, because there may have been large quantities of the drug brought into the islands before the law went into effect, and the great likelihood of smuggling taking place must also always be taken into consideration.

In the treatment of the patients at San Lazaro Hospital, it has been the experience that those who smoke opium give up the habit with apparent ease, while those who take it by mouth have somewhat more difficulty. Those who have been using it hypodermically suffer the most upon being deprived of the drug, and a much longer time is required to effect a cure in their cases. The ordinary opium smoker seems to be able to be cured in less than a month, while a much longer period is necessary in the case of the opium eater, and at least sixty days are required for the hypodermic user.

Considerable difficulty is still being encountered by the officials in the islands in enforcing the pure food and drugs act, particularly with regard to the foodstuffs imported from the United States. This may in part be due to the fact that on account of the Federal pure food law being rigidly enforced in the home country, many of the manufacturers found themselves with large quantities of foodstuffs on hand which could not be passed under the federal inspection, and the same were then sent to the Philippine Islands with the hope that the law would not be so rigidly enforced here. Considerable difficulty has also been experienced in the enforcement of the law with regard to preservatives in butter. Practically all butter used in the Philippine Islands is imported from Australia, and Australian packers claim that the same cannot be shipped in tropical climates unless it contains preservatives, while the Department of Agriculture of the United States holds that preservatives are not necessary. Experience with the shipments of butter which have been received during the last three months, which contain no preservatives, would seem to indicate that the contention of the Department of Agriculture of the United States is correct.

Cholera has again almost completely disappeared from the Philippine Islands, only a few sporadic cases still being encountered from time to time in the provinces, but there have been no cases in the city of Manila during the past two weeks. The northward extension of the disease appears to have been effectually checked by the sanitary inspectors of the Bureau of Health, who were sent to points north of those which were infected, and on account of being on the ground when the first case made its appearance, by prompt isolation and disinfection, many towns were, no doubt, saved from invasion.

This anticipatory system of combating cholera seems to be much more successful than any land quarantine which can be instituted, and does not give rise to so much opposition, and the cooperation of the inhabitants is much more easily obtained. From a study of the subject made by the Director of Health, it appears that cholera is endemic in the City of Manila and that it exists in the sewer system, and possibly at times in the water system, and is frequently conveyed by roaches and other vermin. It would seem that just as soon as the new sewer system and the new water system are completed, the disappearance of cholera from the Philippine Islands should result.

The plan of putting in artesian wells throughout the islands, which has been so actively agitated by the Bureau of Health for the past three years, seems to have taken firm root, and scarcely a day goes by now but that some municipality petitions the central government for aid to enable them to bore a well, or in cases where their funds permit, they are proceeding themselves with the work. The effect on the mortality of many of the municipalities has already been most striking. In some towns in the province of Pampanga, which have artesian water, it has been noted that the death rate dropped from 40 to 28 per thousand. If the use of artesian wells throughout the islands should become general, it probably will do more for the improvement of the public health than any one other plan which could be carried out. It will probably do much toward eliminating the intestinal parasites which are now the direct or indirect cause of so many of the diseases peculiar to, or especially prevalent in, the Philippines.

THE FIRST INTERNATIONAL CONGRESS OF LARYNGOLOGISTS.

(From Our Special Correspondent.)

DEATH OF SCHRÖTTER—RELATION OF LARYNGOLOGY AND RHINOLOGY TO GENERAL MEDICINE—TUBERCULOSIS OF THE LARYNX AMONG THE ANCIENTS—RELATION OF DISEASES OF THE NOSE TO THOSE OF THE EYES—TREATMENT OF TUBERCULOSIS OF THE UPPER AIR-PASSAGES—SEA AIR FOR LARYNGEAL TUBERCULOSIS—LARYNGOLOGY IN GENERAL DIAGNOSIS.

VIENNA, May 4, 1908.

THE first international congress of laryngologists, in connection with which there occurred a celebration in the memory of the founders of laryngology, Türck and Czermak, took place in Vienna on the 21st to the 25th of April, 1908. Seven hundred participants in the deliberations had gathered from all countries of the world and assisted in making the congress a memorable event in the history of laryngology.

The news of a tragical event, the sudden death of Professor Schrötter, interrupted the proceedings on the second day of the meeting. Only one day before his end Schrötter delivered an eloquent address in memory of Türck and Czermak, and that evening he entertained many representatives of science in his hospitable home. He was born in Graz in the year 1837 and received his education at the University of Vienna, where he became the best known assistant of Skoda. He was made privat-dozent of laryngology in the year 1867, and after the death of Oppolzer he took charge of the latter's clinic.

During his work as assistant he was busy with laryngological problems; in 1866 he published cases of internal extirpation of the larynx; in 1876 he described a new method of treating laryngeal and tracheal stenoses by the use of modeled bougies, which represented a great step forward in the technique of laryngology, being found even now in the armamentarium of most laryngologists. Later he published the first case of endolaryngeal operation for the removal of a sarcoma of the trachea. Among his important publications are found the chapters on the diseases of the heart in Ziemssen's Handbook, the description of a new method of dealing with echinococcus cysts, the first account of the occurrence of leprosy and of pemphigus in the larynx, his "Textbook of the Diseases of the Larynx," articles dealing with rhinoscleroma, disease of the pericardium, and laryngeal perichrondritis. He had also contributed the article on the "Diseases of the Blood-vessels" in the handbook of Nothnagel. In the year 1883 he raised his voice in favor of climatological treatment of tuberculosis, and has ever since been very active in the study and practice of sanitary science and the fight for the control of tuberculosis. The erection of the large sanatorium for the treatment of tuberculosis at Alland, near Vienna, is due to his efforts in this direction. With his death the last clinician of the second remarkable period of the Vienna medical school has passed away.

In addition to the scientific deliberations the Congress enjoyed many social events, among them a banquet in the City Hall and a reception by the Mayor of the town.

Professor Fränkel of Berlin delivered a paper on "Laryngology and Rhinology Considered from the Standpoint of General Medicine." He said that the inductive method of reasoning has gained ground in medicine as in science in general. He considered that the laryngoscopy with ophthalmoscopy were the most important steps in freeing medicine from the groping in the dark which it has done for many scores of years. At least, in the first ten years after the discovery of laryngoscopy more was done to uncover the mysteries of the pathology of the larynx than in the four thousand years that preceded. Not only have local disturbances of the larynx been cleared up by this wonderful addition to our technique, but the changes observed in the larynx have proved to be of the greatest importance in the diagnosis and the treatment of general diseases. The picture seen on the laryngological examination helped in many instances in the diagnosis of such important conditions as tuberculosis, syphilis, leprosy, and cancer; moreover, the study of the changes observed in the larynx in consequence of nervous disease has become a most important aid to the neurologists in the practice of their special branch of medicine. The introduction of the method of illuminating the larynx for the purposes of diagnosis and treatment stimulated the application of the same method to the study of other neighboring and distant cavities of the human body. At present the whole respiratory

tract from the nose to the bronchi is directly accessible to the eye of the physician, and this accessibility has resulted in great progress in the diagnosis and the treatment of disease. Frankel further paid tribute to the work of Zuckerkandel in adding to our general knowledge of this portion of the human anatomy, and to the work of Czermak in developing the therapy of the diseases involving the larynx. He said that operative technique entered upon a new era when in the year 1884 cocaine was introduced into practice, again by two Vienna physicians, Koller and Jellinek. Frankel then gave a vivid picture of the methods used in Vienna in the teaching of this specialty of medical practice and theory, and added that many of the devices used are worthy of imitation elsewhere. It is to be regretted, he added, that the methods of teaching laryngology are little uniform in the various institutions of learning, and the tendency still exists to include this branch in the study of otology. It is not to be forgotten that these two have little in common in many respects; even in the common ground of the nasal passages the otologists have different aims and speak a different dialect from the laryngologists. To unite these two branches in teaching and in practice were to produce a branch of medicine that could hardly be considered as a separate and well-defined specialty.

Dr. R. Imhofer of Prague spoke on "The Knowledge of Tuberculosis of the Larynx in Greek and Roman Times." Hippocrates appears to be the first in whose works we find knowledge of tuberculosis of the larynx. He describes a form of consumption in which the voice remains clear, and differentiates from this another type of the disease in which the voice suffers because of the formation of abscesses in the upper air passages. He pictures the peculiar sensation of itching, the bad odor from the mouth and the cough quite accurately, and adds that in the later stages of the disease fever appears and carries away the patient. The treatment he advises for this condition is very rational, though it is limited to purely dietetic and hygienic measures; he recommends the use of asses' milk, stay in the open air, etc. Celsus has also written about the formation of ulcers in the air passages. The other Greek and Roman authors knew only the symptom-complex of "angina," under which name all the serious diseases of the pharynx and larynx, accompanied with disturbances of respiration and of deglutition, were gathered. Galen had introduced a new conception of these affections. He speaks directly of a disease of the larynx which begins with the formation of ulcers, and passing over into the lungs results in general consumption and the death of the patient. He makes the diagnosis of this affection on the existence of pain in the larynx, the expectoration of masses of detritus and of pieces of cartilage. His method of treatment is worthy of attention. He believes that it is possible to introduce fluid medicines into the larynx by placing them in the mouth and then lying upon the back. Only a short time ago Heryng of Warsaw has recommended a similar method and has called it "laryngeal gargling." This forms but another example of the well-known truth that many a modern method of treatment is but an imitation of old and forgotten methods of the ancients.

Professor Glück of Berlin spoke on the results of operations and the methods used in cases of tuberculosis and neoplasm of the larynx observed in his clinic. He gave abundant statistics of his results and communicated the methods which have been so successful that the mortality in uncomplicated cases was zero, in complicated cases dropped down to 9 per cent. in some groups, and in no group was higher than 13 per cent. He then demonstrated five patients who were operated upon nine months to ten years previously. Four had suffered from neoplastic disease and one from tuberculosis. All patients were cured and spoke in a distinct voice, although they had been subjected to partial or complete removal of the larynx and in some cases of the neighboring anatomical structures. The patients were capable of continuing their occupations, and the results attained could therefore be considered perfectly satisfactory.

Professor A. Onodi of Budapest read a paper entitled "The Relation of the Diseases of the Nose and the Nasopharynx to the Diseases of the Eye." He considered the great practical importance of the therapy of eyesight disturbances dependent upon nasal conditions, and the methods to be used in the prevention of blindness of nasal origin. He spoke of his morphological studies which showed the close connection between the optic nerves and the posterior accessory cavities of the nose, and thus cleared up the reasons for the occurrence of the disease of the eyes in connection with nasal disturbances. Onodi called attention to the brilliant results attained by the conservative and by the operative treatment, and contrasted with these the cases of lost eyesight caused by negligence in treating the accessory cavities of the nose or by late operative interference. He further discussed the complicated question involved in the occurrence of disturbances of eyesight on the opposite side or on both sides when the nasal involvement is unilateral. He also touched upon the cases in which blindness followed the operative interference with the accessory nasal cavities of one side. He thinks that his morphological discoveries explain such accidents without necessitating any forced assumptions. The same findings may explain the occurrence of eyesight disturbances after the cleaning out of the posterior accessory cavities, such as have been observed in one published case. He then spoke of the possible injuries to the muscles of the eyes which operative interference with the posterior nasal space can occasion. After he had thus stated his views of the causal relations between the diseases of the eyes, the disturbances of the eyesight, and the intranasal conditions, Onodi expressed the hope that common work of the ophthalmologists and rhinologists, as well as clinical and pathological study of selected cases, will serve completely to clear up the important subject considered in his paper. In conclusion the speaker demonstrated very instructive preparations illustrating the close relationship between the optic nerves and the posterior nasal cavities.

Dr. Mahn of Paris demonstrated a self-retaining tongue depressor which could be used in the treatment of children in the examinations required in internal medicine, as well as in operative procedures of general surgery and of rhinolaryngology.

Dr. Gleitsmann of New York presented a paper on the "Treatment of Tuberculosis of the Upper Air Passages." The treatment of tuberculosis of the upper air passages has shown great progress in recent times, partly because of the appearance of new methods, partly because cases for various special treatment were more carefully selected. However, the great number of the means of treatment described in the literature continue to give evidence of the fact that no generally adopted methods exist; indeed, with the exception of a few laryngologists that have adopted one and the same method of treatment, the statement made by the author in a lecture before the New York Academy of Medicine in the year 1904 that no two laryngologists deal with such cases in a similar manner still holds true. Gleitsmann then spoke very fully on the tuberculosis of the nose, of the nasal accessory cavities, of the nasopharynx, and of the larynx. He said that it is self-evident that the well-known methods of dietetic, climatological, and hygienic treatment are not to be neglected in such diseases, especially as many of the patients were suffering from pulmonary tuberculosis as well as from the local disease. Surgical measures, the use of lactic acid, and galvanocautery will ever retain their sphere of usefulness, the latter being especially acceptable at the present time. Among the newer methods of treatment Holländer's cauterization with hot air, the various kinds of light treatment, such as Finsen's light, sunlight, with or without fluorescent additions, are to be mentioned in the front rank. It may be hoped, too, that further experience with radium and with "*x*-rays" will increase their value in such conditions. The author had most success in his personal practice with surgical treatment, with the use of lactic acid and galvanocautery, and in selected cases with the employment of tuberculin.

Dr. Hennig spoke of the "Influence of the Shores of the North and Baltic Seas Upon Tuberculosis of the Upper Air Passages." The influence of these seashores upon the diseases of the upper air passages is extremely favorable. Especially valuable has proved to be a long stay in the resorts situated on these seas for such tuberculous patients as have previously suffered from anemia, chlorosis, or general weak condition of the muscular and the nervous systems. The Baltic Sea is in general better adapted for the treatment of cases of tuberculosis because its resorts are better shielded from wind, its coast is rich in forest lands, and the railroad communication with it is very convenient. The climatological treatment must in every case be combined with the proper balneological, hygienic, and dietic measures, while, of course, the use of drugs and of inhalations is not to be neglected. Extensive tuberculosis of the upper air passages in connection with advanced pulmonary and intestinal lesions forms a contraindication to residence at these seashore resorts.

Dr. Jörgen Möller of Copenhagen spoke on the mechanism of the production of the chest and the falsetto voice. He attempted with the help of the *x*-rays to determine the relative positions of the cricoid and the thyroid cartilages in the production of notes of various pitch. Such observations, he believes, are valuable in giving an idea of the function of the cricothyroid muscle.

Professor Lermoyez of Paris read a paper on "The Significance of Rhinological and Laryngological Examinations in General Diagnosis." He said that laryngoscopy saw the light of the world in Vienna in the year 1857. Türck at that time, after many experiments upon the cadaver, succeeded in constructing the very simple instrument which has enabled us to see the interior of the larynx in a living human subject. Türck did not know at the time that Manuel Garcia had previously succeeded in viewing the living interior of the larynx, namely, his own. The fact is that the famous singing master came upon the idea of illuminating the interior of his own larynx by means of a mirror and thus study the appearance of the vocal cords. Czermak made the discovery of Türck known to the great body of physicians. He delivered lectures on laryngology, improved the apparatus of Türck, first made use of artificial light instead of sunlight for the illumination of the picture reflected by the mirror, and further completed the examination by introducing rhinoscopy, that is, the viewing of the nasopharynx from the throat. Thanks to the work of these two Austrian physicians, the pathology of the upper air passages could show progress similar to the advance made in the study of the diseases of the lungs after the discovery of auscultation. Very soon laryngoscopical examination found application in the technique of surgical procedures; Lewin and Bruns used it in their work and they succeeded with the use of this method in diagnosing and in curing a number of surgical conditions, especially neoplasms of the air passages, confronted with which internal medicine was helpless and the older surgical technique of very little use. The great chapter of laryngeal paralyses was scientifically opened by Traube in the year 1860. The laryngeal mirror proved to be a most important means of diagnosis in internal medicine; with the help of this mirror Traube succeeded in diagnosing the changes in the caliber of the thoracic aorta and of other large blood-vessels of the chest and neck. H. Gerhardt and Türck described the symptoms of the different varieties of laryngeal paralysis. Later this field of medical knowledge was very much enriched by the law formulated by Semon and the discovery of the nervous center for the larynx made by Krause. Since those days the larynx has become a very important organ in the diagnosis of disease, whenever affections of the skull, of the spinal cord, or of the thoracic cavity are concerned. The discovery of adenoid vegetations in the nasopharynx made by Wilhelm Meyer in 1867 was of extreme importance in helping us to understand the disturbances in the physical and mental development of the child. Then the examination of the nose very quickly became a valuable diagnostic measure in the hands of every physician, and the profession soon learned the great importance of diminished air space in the nose for the development of the lungs, of the heart, and the growth of the whole organism. In the year 1867 Ziem diagnosed the appearance of pus in the bony cavities situated in relation to the head and face and communicating with the nose. Further study of these conditions led us to understand thoroughly the accessory cavities of the nose, taught us the dangers lurking in the presence of such suppuration, and gave us means to combat their causes and consequences. The communication of Hack in the year 1881, which described the importance and the wide significance of the nasal reflexes, attracted much attention from the scientific world. As cocaine enabled us to operate painlessly for the various diseases in the nose, it seemed as if the "nosology of nosology," the study of the diseases of the nose, was destined to assume limitless importance. To-day we hold more conservative opinions in reference to the nasal reflexes, yet we must allow that disturbances in the nose may affect very distant organs, not alone by changing the course of the inspired current of air or diminishing its volume, but by forming the stimulus for the appearance of various nervous phenomena. Kirstein and Kilian finally directed us upon new paths, by constructing straight tube-shaped instruments, similar to the esophagoscope, and applying them to the study of the larynx and the larger bronchi. They thus invented the art of bronchoscopy, and already this youngest accomplishment and branch of laryngology has proved itself of immense value. With the help of bronchoscopy foreign bodies have been successfully removed from the larger air passages in cases where previously a dangerous and bloody operation would have been necessary. Doubtless bronchoscopy will cause a revolution in the present ideas of the pathology of the bronchi, which will compare with the changes produced by laryngoscopy in our conception of the morbid anatomy of the larynx.

(*To be continued.*)

Progress of Medical Science.

Boston Medical and Surgical Journal, June 4, 1908.

Atypical Cases of Tonsillar and Peritonsillar Inflammations with One Unusual Complication.—The unusual complication referred to by G. W. H. Merrill was an orbital involvment in which there occurred an ophthalmoplegia (external) with moderate exophthalmos. The retinal veins were large and full, and there were old and fresh patches of choroiditis. The case ran a long course, commencing with peritonsillar abscess, which ruptured, leaving a condition of general sepsis. Incision made later in the peritonsillar region was followed by severe bleeding. The main part of the paper refers to the author's experience in four cases, in which he dwells on the difficulty sometimes experienced in not finding pus when the usual incisions are made. Often there seems to be a gradual subsidence of the swelling and infection without there having been at any time a frank pus formation. The author collates the opinions of the various text-books on the treatment of infections of this region, and dwells on the difficulty of finding any definite pus pocket.

The Use of Silk Ligaments in Addition to Muscle and Tendon Transference in Infantile Paralysis.—R. Souther refers to the experiments of Lange, who showed that silk causes the formation of a tough tissue which surrounds it from origin to insertion. In other words, a strong intestinal tendon is produced throughout the length of the silk, which is substantial and tough. This new natural tendon not only reinforces the silk, but is sufficiently strong to take its place. The great fault of the old method of transplantation was that the transplanted muscles were inserted into paralyzed tendons which in time stretched. Then some groups of muscles are paralyzed while others remain strong, the point on which the transplanted muscle is to be inserted is selected, so that in doing its new work it will not only take the place of the paralyzed muscle, but overcome the position of the deformity. In this class the use of a silk ligament is advisable when the deformity is great, or when the transplanted muscle cannot reasonably be expected to correct the deformity, though it will take up the new motion. The author gives the histories of various cases in which this silk reinforcement has been tried, and gives directions for its special application on various sites. He notes the fact that in the use of silk ligaments in children one end at least should be attached to some soft tissue, such as tough fascia, a ligament, or the varied periosteum. It is not advisable to attach the ligament to a tendon or paralyzed muscle for a time, these will stretch and the position will be lost. In all such cases careful muscle training is a very important part of the after-treatment. Silk ligaments will stiffen the joint sufficiently to prevent lateral motion, but allow dorsal flexion, which is so necessary in walking. The method is for this reason preferable to arthrodesis even when the paralysis is pretty extensive. By preventing distortion, silk ligaments are extremely useful to supplement necessary transplantation. The newly transferred muscle takes up its work more readily and is relieved from other strain.

New York Medical Journal, June 6, 1908.

The Specific Action of Mercury in Syphilis.—H. G. Piffard quotes from his own writings of over thirty years ago to the effect that mercury removes symptoms and cures the disease, but sometimes does so slowly; while the iodide does not cure the disease, but removes certain symptoms with wonderful promptness. He also refers to certain experiments recently made in France in the inoculation of apes with syphilis. The ultimate aim of these researches was to find, if possible, some means whereby the effects of the inoculation could be prevented before the virus gained entrance to the general system. In this way they have apparently succeeded by the application of a mercurial ointment composed of one part of calomel and two parts of lanolin. This should be applied within twelve or eighteen hours of the time of inoculation, and when properly carried out general infection does not occur. In other words, the mercury applied locally destroys

the spirochete. Some of the French authors have put forward the view that mercury is even a greater specific against the local disease than against the general disease, and seem to think the idea a novel one, but over thirty years ago Piffard wrote as follows: "How does mercury cure the syphilides? Is it by some alteration of the constitution of the blood, and the consequent induction of nutritional changes, or is it by direct local action of the drug upon the lesion itself? The former is the more prevalent belief, but the latter, I think, is nearer the truth. Mercury cures the lesions by the particles being brought in direct contact with them, and *ceteris paribus*, the larger the quantity of mercury that can be made thus to act, the sooner the cure, provided the remedy be used in such a way as not to exhibit its own peculiar effects."

Multiple Conception.—After some statistics as to the frequency of multiple conception M. J. Karpeles relates the history of a case of triplets which he was called on to attend. The first child (all were girls) weighed five and a quarter pounds, the second five pounds, and the third four pounds. The patient had had triplets once before, and during her married life of six years a twin miscarriage in addition. In the present instance the first presentation was vertex, the second breech, and the third vertex. The placenta was very large, giving the appearance of three placentæ coalesced into one, with three cords and three distinct attachments to the placenta.

To What Extent Is Migraine Amenable to Treatment of the Eyes?—E. M. Alger gives detailed histories of ten cases. He notes that there are three ocular conditions which are conceivably concerned in attacks of migraine. First, and most important, over-use of the ciliary muscle in accommodation, which may exceptionally occur in normal eyes by reason of immoderate use, but is almost invariable in hyperopia and especially in astigmatism, since it is only by accommodation that clear vision is secured; second, come conditions in which binocular vision is impossible without undue strain of the extrinsic ocular muscles; and, third, the cerebral fatigue that comes from the constant interpretation of distorted or unequal retinal images, as in astigmatism and anisometropia. It can readily be seen that the relief of these conditions may often be a very complicated problem, an exact solution of which is sometimes impossible. In most people Nature herself has compensatory powers, and if we can bring the error within the limits of those powers we shall have given all the relief necessary. This is the reason why inexpert work is so often perfectly satisfactory to patients in ordinary conditions. But it must be remembered that in migraine and many other nervous conditions it is this very attempt at compensation that causes the trouble, and a much closer correction is called for. The one great defect in the evidence is the widespread failure of ocular therapeutics to afford relief, even when applied by men whose reputations are of the highest. This may be due to two causes, first, that the ocular treatment is seldom as patient and painstaking as it should be; and, second, because there may be cases in which eyestrain is not the chief cause and perhaps not a cause at all. On the other hand, there are many patients whose hereditary instability is so great that an explosion may occur from any one of several exciting causes. Suitable eye treatment might prevent some of these attacks, but could not possibly prevent them all. Other cases are pure eyestrain cases, and are completely relieved.

Journal of the American Medical Association, June 6, 1908.

Meaningless Diagnoses.—H. L. Wiel thinks the time has come for the medical profession to stop the use of certain ill-used but time-worn diagnoses, which mean nothing definite and are used merely to hide ignorance and satisfy the patient. Perhaps the most freely used of these is biliousness, which is no diagnosis at all; and he also mentions as falling into the same category typhoid pneumonia and typhoid malaria, ptomain poisoning, a frequently misused appellation, and gastric fever. There are many others; and, he asks, "Should not all conscientious physicians discard the use of these terms, and if there are none better to be found in the present terminology, why use terminology at all?" Rather than call things by false or meaningless names, let us call them by no names at all.

Varicocele.—F. K. Boland describes the anatomical conditions of varicocele, which he estimates exists in 10 per cent. of all men between the ages of 15 and 30. He credits unsatisfied sexual desire as a cause, and says no doubt a predisposition may be inherited. A varicocele without symptoms calls for no treatment, though it is sometimes necessary to operate to enable a candidate to pass a physical examination. Palliative measures will sometimes relieve, but operation is best and can be done under local anesthesia, though general anesthesia is better. The text-books say that excision of part of the scrotum is sometimes indicated; in the south, where the pendulous scrotum is so common, this is always indicated. Cures have been reported from this measure alone, and it certainly is one of the most important steps in the operation. If this is not done, the incision over the veins should be made just below the external abdominal ring, as advised by Dr. Bloodgood. Here the veins are fewer in number and the wound heals more readily than in the scrotum. In any operation the genital branch of the genitocrural nerve must not be injured, as it supplies the cremaster muscle. Boland prefers the open method of operating, in which two incisions are avoided and inspection of the testicle and tunica vaginalis is afforded, which in a large proportion of cases will reveal a hydrocele. The details are given; he removes a portion with a curved scrotal clamp, which is taken off and all bleeding points caught and tied with fine catgut. The varicose plexus is then exposed as far from the testicle as possible, and separated from the vas deferens with its artery and veins. The veins are firmly tied in two places, two inches apart, the lower ligature being tied first. The intervening section is then removed, care being taken to leave the stumps long enough to prevent slipping. He advises approximating the ends of the veins and stitching them together. The wound is closed longitudinally with silkworm sutures, the ends left long and tied together. Drainage is not usually necessary, rubber or oiled silk is used to avoid possible contamination by urine, and the dressing is held in place by a figure of eight bandage, which supports the testicles. After a few days it may be advisable to use a smaller dressing and a large suspensory bandage. The patient is kept in bed ten days, and a suspensory is worn only till the wound is well healed. Boland advises attention to details in the operation on account of the mental effect in neurotic patients.

Comatose Pernicious Malaria.—C. S. Neer describes this most frequent of the pernicious forms of malarial disease, and reports three cases, all fatal, occurring in Missouri. Its early diagnosis is important because of the effect of prompt treatment on the mortality. In the great majority of cases it is due to the estivoautumnal parasite, the development of coma depending on the number and toxicity of the parasites and especially on their localization in the brain. In temperate climates it usually occurs in the summer, in the tropics, at any season, and it usually occurs in those who have suffered for some time with malaria and have not received proper treatment. Its pathology in general is about that of other severe types of malaria, the most striking and characteristic lesion is the blocking of the cerebral capillaries by thrombi of malarial parasites, with secondary minute hemorrhages, and pigmentation. There is usually relaxation of the limbs, but there may also be twitchings of muscles, exaggerated deep reflexes, and even convulsions. Focal symptoms of brain disease may continue after the attack. With a previous history, diagnosis sometimes may be made from the symptoms alone, but if the patient is found comatose and history is lacking, a blood examination will be needed. The prognosis is always grave. Quinine should be given hypodermically. Craig thinks that 8 grains of the hydrochlorate, repeated until 24 grains have been injected, is enough in most cases, but admits that more may be required in very severe infections. The intravenous injection method may be used in the presence of very grave symptoms. Aside from the quinine, treatment must be symptomatic. Stimulants, especially strychnine, are often useful.

Experimental Deciduomata.—L. Loeb has followed up his investigations, which developed the fact that tumors of decidua-like tissue could be produced by incising the uterus in guinea-pigs. These tumors, he finds, attain their full growth in about ten or eleven days, and then become necrotic. Pregnancy may slightly prolong their life. Their development appears to depend on a certain condition in the sexual cycle of the animal. This occurs at a certain period after copulation, the optimum being between five and eight days, corresponding with the time when the uterus normally responds to the stimulation of the ovum with the formation of a decidua. Deciduomata were produced also at a certain period after heat, the optimum lying between four and nine days, without copulation. Experiments were undertaken to determine whether the contact of the ovum with the uterine mucosa caused the tendency to the formation of deciduomata; mechanical prevention of such contact showed that it was not necessary. Another series of experiments by extirpating, misplacing, or cauterizing the ovaries before making the incisions showed that their presence was essential to the formation of deciduomata; while some very minute formations appeared in one or two instances when the incisions were made very soon after the extirpation of the ovaries, this is explainable by assuming that a small portion of the substance secreted by the ovaries that causes the predisposition to deciduoma formation had

not all passed out of the circulation when the incisions were made. The fact that deciduoma could be produced in pieces of transplanted uterine tissue in the subcutaneous tissues proves that the ovaries do not act through the nervous connections, and an internal secretion has, therefore, to be invoked. It seems probable to Loeb, from his experiments, that the corpora lutea represent that part of the ovary which secretes this substance. This, however, will have to be decided by further experiments, which are in progress. The necrosis of the deciduomata probably occurs with the cessation of the secretion and disappearance of the corpora lutea. We are justified, he thinks, in concluding that this same secretion has a like significance for the formation of the placental decidua. In conclusion, Loeb calls attention to a certain analogy existing between these artificially produced deciduomata and a variety of multiple tumors that are limited to certain organs, as, for instance, multiple fibroneuromata, enchondromata, symmetrical lipomata, or adenomata of the intestinal mucosa; they might be called multiple systemic tumors. The deciduomata represent a type of new formations which he called "transitory tumors." If their causal secretion were continuously secreted by the ovaries they would not be transitory, but permanent new growths. In both these and the systemic tumors we have multiple benign tumors affecting a single organ. In the case of deciduomata, we now know on what it depends, and that, the causal secretion having been produced, indifferent stimuli, like traumatisms, suffice to produce the tumors. There are clinical observations indicating that certain tumors, sarcomata, for instance, have also been caused by traumatism, and he suggests the possibility of an antecedent "preparing" substance in such cases also. He discusses the bearings of the facts on the question of inoculability and transplantation of tumors.

The Lancet, May 30, 1908.

Acute and Transitory Dilatation of the Heart in an Infant.—E. L. Jones was called to see a child delivered fifteen hours previously with forceps, and weighing ten pounds. He found the child with a marked tonic spasm of the respiratory muscles and deep cyanosis. Compression of the chest with the head extended was followed by inspiration and the intense cyanosis was lessened. The heart did not seem enlarged and there was no murmur. In the course of one hour, when the spastic condition was so intense that respiration practically ceased, the heart was again examined, and, to the doctor's great surprise, the cardiac dullness was almost double its former breadth, extending an equal distance from the middle line on each side, while a loud systolic murmur was audible all over the front of the chest—most intense over the pulmonary valve. Chloroform, which had been sent for, had now arrived, and the child inhaled it, with the effect of relaxing the spasm. Color became normal. Examination of the heart now showed a normal dullness, and no murmur. The author ascribes the peculiar and temporary heart condition to the extreme dilatation of the right auricle and ventricle, causing regurgitation through the tricuspid valve, and there possibly was a leak through the foramen ovale, which was not entirely closed fifteen hours after birth. After recovery from the above attack the child went on in perfect health, and was reported normal when eight months old.

Treatment of Pulmonary Tuberculosis by a Postural Method.—Commenting on the value of having tuberculous patients bend forward over the edge of the bed, in the morning, to help clean their air passages of the night accumulation of secretion, A. T. Wise describes a special chair which he has devised, with an attachment which permits the patient to assume the prone or forward position without discomfort. It forms a double inclined plane (figured in the paper), and by this curvature of the body obviates excessive blood pressure in the cerebral vessels, as the lower extremities are not raised above the level of the head. The author believes that in addition to draining the air tubes by gravity the circulation is improved in the apices of the lung. The latter are now dependent, have a better blood supply, and some parts of the lung tissue become relieved of the weight of the heart. The semi-supine reclining attitude in vogue, adopted by votaries of the open-air cure and now universally carried out, where the patient lies on his back propped up with a pillow on a couch or reclining chair, is, of all customary sloping positions of the body, the most undesirable to further the easy evacuation of sputum from the lungs. Putting aside the effect on the pulmonary circulation, especially as regards the full blood supply to the cornered apices, this dorsal or supine slope of the thorax cannot but favor the extension of the disease from the apex of the lung to the back of the lower lobes by unintermitting gravitation. The common line of advance taken by the disease is actually seen to be in this direction. Better that the patient shifts his position from time to time than that any approach to the dorsal decubitus be maintained for a prolonged period of time. Even in those subjects who are taking gentle exercise the periods of called-for rest should not be forever spent on the weary backward incline. Some care must be exercised in selecting cases for postural treatment. Patients with a tendency to hemoptysis must use it continuously, as also those with fluid in the pleural cavity and those with a pronounced pneumonic type of tubercle.

British Medical Journal, May 30, 1908.

Primary Pneumococcic Peritonitis.—A. Smith reports two cases. Case 1 was that of a girl of eight years taken suddenly with abdominal symptoms. The general aspect, however, was that of a pneumonia, but examination of the chest was negative. The general condition continued the same for several days. One week later the abdomen was considerably distended. There had been somewhat of a crisis, but the fever rose again and was irregular; was essentially a pus temperature. Repeated explorations of the chest revealed nothing. Finally, at the end of two weeks, it was deemed advisable to open the abdomen, and great quantities of pus, pneumococcal in origin, were evacuated. Recovery was speedy and complete. Case 2 was that of a girl four years old with symptoms of acute appendicitis, but immediate operation was not deemed necessary. On the fourth day the appearance seemed typical of pneumonia, although all the pain complained of was abdominal, in the right inguinal region, with marked tenderness, resistance, and sense of fullness. On the eighth day of the attack, when she looked much better, the temperature was 99°. This certainly looked like a definite pneumonic crisis, but there were no further physical signs of pneumonia to be elicited on examination of the chest and the abdominal symptoms and signs persisted. The temperature rose again the same night; it continued to be irregular and the abdomen increased in size and fluid formed. A surgeon again saw her, some of the abdominal fluid was removed by an exploring needle and found to be a pure culture of the pneumococcus. The abdomen was incised and drained and the patient made a speedy and complete recovery.

The Use of Serum in Scarlet Fever.—H. Cumpston describes the septic and toxic forms of the severer cases and his experience with a polyvalent serum. This was obtained from horses immunized against cultures of streptococci which have been isolated from various cases of scarlet fever. These streptococci have been found in some cases in the blood, in other cases in the suppurative lesions which complicate pure scarlet fever, such as ulcerated throat and middle-ear disease. No particular type of streptococcus was, therefore, exclusively employed, the object having been to obtain as many organisms from as many cases as possible, so as to include a variety of strains. Use of the serum in 37 cases gave 26 recoveries and 11 deaths. There was a marked and distinct improvement in the symptoms in all the cases which eventually recovered. In 4 of the cases 50 c.cm. were given intravenously. In one case rigor and high fever followed, but in general this method seemed to give better results than by subcutaneous use. There was no renal irritation noted. Urticarial rash appeared a few times. Cervical suppuration resulted in three cases. While the author is not disposed to attach too much consequence to this single series of cases, he says that he was struck with the clinical course of many of the cases that recovered. Within forty-eight hours of the injection the temperature began to fall, became normal in another forty-eight hours, and remained normal, the cervical glands began to subside, the necrosis of the throat began to clear up, and the rhinorrhea either ceased or lost its purulent character. Not all of the cases showed so satisfactory a course, but most did very much better than would have been expected in the ordinary way without serum injection. In one case the temperature reaction to the first dose of serum was marked, but the improvement was not sustained. It may be that there was a case of invasion by several types of streptococci, some of which the particular serum used did not affect. Observation of these 42 cases leaves the distinct impression that the injection of the "antiscarlatinal" serum in large enough doses (not less than 50 c.cm.) and early enough in the disease—that is, as soon as the onset of rhinorrhea, swelling of cervical glands, and superadded rise of temperature, the signs of septic invasion, occurred—will produce a marked improvement in "septic" cases. In "toxic" cases little can be said in favor of the use of serum, but here some slight improvement was noticed in two cases.

Horsepox Directly Transmitted to Man.—A. F. Cameron reports the case of a stableman of thirty-two years of age, admitted to hospital with fever and swelling of the left arm and axilla. A rash on the arms and left hand had led to a diagnosis of smallpox. The lesions varied in size, but all resembled the lesion of a primary vaccination about the eighth or ninth day of its development, but they were more severe. The vesicular ring with turbid contents was well raised above the level of the surrounding skin on an indurated and tender base. Within the ring was a brownish-black, slightly depressed crust. In the larger lesions on the arms the diameter of the vesicular ring varied from 12 mm. to 9 mm. In two, situated one on the left forefinger, the other near the base of the left thumb, the vesicle was much smaller. In two to three days after admission the severe pain in the arms abated. The local indurations and lymphangitis gradually disappeared as the lesions crusted and the gland swelling subsided without suppuration. A point to be noted is that for several days the patient had severe constitutional disturbance. The fact that the lesions were confined to the left arm and hand (there was only one on the right arm), their uniform type and synchronous development, and above all their resemblance to the lesions of a primary vaccination, suggested that they were due to inoculation. It was later found that he had been treating a horse with an ulcerated mouth and it was doubtless due to this source that the infection was referable. There was an extensive epidemic of smallpox in London (where the case occurred) at the time, and the diagnosis of smallpox was natural. Out of ten thousand suspects fully one thousand were reexamined and found to be free from smallpox.

Cats as Plague Preventers.—A. Buchanan describes his experiences in India and dwells on the religious customs of the Mohammedans and Hindus, who venerate these animals. Inquiries over a large area showed that as a rule houses in which cats were kept were free from the plague. Rat-proof houses built of wattles are generally free also, but the ordinary mud hut is a breeding-place for the rodents. His general conclusions as to the advisability of keeping cats are thus stated: In the early days of plague epidemics many mistakes were made. Cordons were drawn around villages and towns so that infected people could not get in, but infected rats might steal in unobserved. Disinfection was practised with great vigor, but while this operation was in progress the rat was sitting comfortably in its burrow, ready to come out as soon as the disinfection operations were over. The plague patient was hastily segregated to a plague camp, but it is now known that plague (bubonic) is practically never conveyed direct from man to man, so that it has come to be a common saying that "the safest place in a plague epidemic is a plague camp," and those of us who have had charge of plague camps know that those servants who lived in the camp practically never took plague, although they were handling plague patients all day. A few cases of plague have been occurring daily in this district for some time, and from daily inquiries which are being made the author thinks there is good reason to believe that the duration of plague in India depends on the time it will take before it is generally recognized that the cat is the best plague preventer.

Berliner klinische Wochenschrift, May 25, 1908.

Osteoperiostitis in Chronic Icterus.—Beuttenmüller quotes the views of Teleky, who says that osteoperiostitis ossificans characterized by the well-known appearances of club fingers, spade hand, etc., may be found in the course of long suppurations, in some infections, in some chronic intoxications, in heart lesions, especially of the congenital kind, and in neoplastic diseases. Beuttenmüller has seen three cases of this affection accompanying chronic icterus, and has collected eight others from the literature. The icterus in his cases was due to probable hypertrophic cirrhosis in one case, probable carcinoma of the biliary passages in another, and a biliary cirrhosis in the last. The author considers the various explanations of this appearance in chronic icterus, and decides that the probable cause is the cholemia, as the most typical lesions observed in his first case disappeared after a successful cholecystostomy.

Münchener medizinische Wochenschrift, May 26, 1908.

Treatment and Prognosis of Chronic Otitis Media.—Von Ruppert has studied the material observed by Dr. Scheibe in the seventeen years from 1889 to 1906. During this time 1,118 cases of chronic otitis media were treated. Only 38 of them showed complications in the mastoid, the labyrinth, or the brain at the beginning of treatment. Five hundred and ninety-two, or 55 per cent., were uncomplicated cases, with central perforation; the treatment consisted of cleansing the auditory canal by injection of 4 per cent. boric acid solution, followed by the "air-douche," and a careful drying of the canal and the tympanic cavity. Then the introduction of very finely pulverized boric acid was practised. Cold wire sling or the curette was used to remove any hypertrophies of the mucosa or polyps of the external meatus. Under this treatment the suppuration was brought to an end in 371 cases, or in 93.9 per cent. of the 395 cases that were observed for a long period of time. At the same period of practice there were observed 489 cases of chronic middle-ear disease, with lateral perforation of the drum. In these cases the condition was much less amenable to treatment, the suppuration continuing over a longer period and a greater number of cases remaining unrelieved or requiring radical operative procedures. There were six cases of death, of which three were caused by abscess of the brain, two by sinus thrombosis, and one by meningitis. Von Ruppert concludes that chronic otitis media with central perforation is very amenable to treatment, never leads to complications during treatment, never attacks the bones, and therefore never requires operative treatment. Lateral perforation accompanying a chronic middle-ear disease has a much worse prognosis as to life, duration, and complete restitution of the patient to health.

Hemorrhage During Labor.—Schickele has studied fourteen cases of severe hemorrhage during labor, and comes to the following conclusions: The general state of nutrition, the development of the body, and previous health are very important factors in prognosis of severe bleeding during labor. Alcoholic women are more endangered by it than temperate patients. Multiparæ, patients who have bled in their previous labors, and who have had difficult or complicated deliveries, have a more serious prognosis, for their blood, considered as an organ, may have been harmed in the past. Patients with placenta prævia who have bled a good deal before being brought for treatment are in great danger. The author calls attention to the fact that the hemorrhage of extrauterine pregnancy is borne much better than bleeding during labor.

French and Italian Journals.

Early Intensive Treatment of Syphilis.—Carle advocates the use of intramuscular injections of soluble salts of mercury begun early in the disease, as soon as the diagnosis is positively established, as a means of preventing the bad effects of syphilis. The secondary period is so changed that a severe diagnostician would not be able to recognize the disease without the history of the initial lesion. It is important to select good subjects, free from any form of diathesis, alcoholism, or nervous predisposition. The patient is then given injections every other day of a soluble salt of mercury until fifteen injections of four centigrams have been given. A rest of about a week is taken and another series undergone; thus treatment is continued up to the end of the second year, the gray oil being used instead of the soluble salt after the second series of injections. The results are much quicker with the soluble salts and more pronounced. The second year the injections are less frequent, and the third year only two series are given. It is possible for the syphilitic to marry and have healthy children within three years of infection after this treatment has been carried out.—*Lyons Médical,* April 19, 1908.

Aphasia.—G. Mingazzini dissents from the opinions of Pierre Marie with reference to the relations of the lenticular nucleus to aphasia. He finds that the anterior third of the putamen has relation to the existence of aphasia, but the posterior two-thirds preside over articulation, thus showing how lesions of the lenticular nucleus cause dysarthria or motor aphasia. There are no reasons in pathological conditions or clinical facts to cause us to believe that the third frontal convolution is the center of the motor impulses of language. Heretofore too circumscribed limits have been assigned to the verbomotor region. It is necessary to enlarge its boundaries. The lobe of Broca is not the seat of images of words, but of syllables; thus when the area of Wernicke is destroyed we have aphasia characterized by the reiteration of many syllables, that is paraphasia. The auditory and motor images of language are mainly localized in the left side, but there is a supplementary center on the right. Examinations of hearing are necessary to determine whether the patient who does not comprehend owes this disturbance to a cerebral lesion or to deafness.—*La Riforma Medica,* April 20, 1908.

Book Reviews.

Diagnostics of the Diseases of Children. By Le Grand Kerr, M.D., Professor of the Diseases of Children in the Brooklyn Postgraduate Medical School; Pediatrist to the Swedish Hospital in Brooklyn; Attending Pediatrist to the Williamsburg Hospital, Brooklyn. Fully illustrated. Philadelphia and London: W. B. Saunders Company, 1907.

Diagnosis of disease may always be attended with difficulty, and this is particularly apt to be the case when the patient is a child. The present volume is designed to make this difficult task more easy of accomplishment. To some extent the author has succeeded in his task; for he has written a book that is well arranged and, as a rule, accurate. But there is little in the volume that is not contained in most of the text-books on pediatrics, and there are some important omissions. For example: there is no mention of empyema, and "purulent pleuritis" receives only inadequate notice; von Jaksch's anemia is not mentioned; leucocytosis shares the same fate, and the whole section on anemia is too slight to be of much value; the same remark applies to the few lines on cretinism, in which there is no reference made to Mongolian idiocy or infantilism, from both of which conditions cretinism has to be differentiated. The whole 540 pages could easily have been compressed into a much smaller volume; there are many much smaller books which contain considerably more information.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. December 1, 1907. Philadelphia and New York: Lea Brothers & Co., 1907.

The December number of Progressive Medicine, following along the same lines as in previous years, contains articles on (1) Diseases of the digestive tract and allied organs, the liver and pancreas; by J. D. Steele. (2) Diseases of the kidneys, by J. R. Bradford. (3) Surgery of the extremities, fractures, dislocations, tumors, surgery of joints, shock, anesthesia, and infections; by J. C. Bloodgood. (4) Genitourinary diseases, by W. T. Belfield. And (5) Practical therapeutic referendum by H. R. M. Landis. The first and third of these contributions are of considerable length, and occupy about one hundred pages each. The quality of the articles is of the usual high standard reached in this publication.

Treatise on Diseases of the Skin. For the use of advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Fifth Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1907.

In five years this book has gone through four editions. The new edition contains very few changes, the most notable being found in some of the tropical diseases; thus the articles on Frambesia and Oriental Sore have been rewritten, and those on Verruga Peruana and Tinea Imbricata changed or added to. New chapters have been written on Dhobie Itch, Uncinarial Dermatitis, and Meralgia Paresthetica. The general plan of the work remains as before; the classification adopted is Hebra's system with a few slight modifications. A very useful feature of the book is the bibliography in connection with the various diseases and lesions under discussion.

The Diagnosis and Treatment of Diseases of Women, by Harry Sturgeon Crossen, M.D., Clinical Professor of Gynecology, Washington University; Gynecologist to Washington University Hospital and Chief of the Gynecological Clinic; Associate Gynecologist, St. Louis Mullanphy Hospital; Consulting Gynecologist to Bethesda Hospital, St. Louis Female Hospital and St. Louis City Hospital; formerly Superintendent of the St. Louis Female Hospital; Fellow of the American Association of Obstetricians and Gynecologists; Ex-President of St. Louis Obstetrical and Gynecological Society; Member American Medical Association, Mo. State Medical Association, St. Louis Medical Society, etc. With 700 illustrations. St. Louis: C. V. Mosby Medical Book and Publishing Company, 1907.

This volume is devoted entirely to the diagnosis and treatment of the diseases of women, and undoubtedly as such it will appeal to the general practitioner, who will find here a thorough and practical presentation of all that is necessary along these lines. The book is not intended for the specialist. Besides the clear and systematic arrangement of the subject, and the omission of etiological and pathological discussions, the volume is almost unique in the number and value of its illustrations. Upwards of fifty books have been drawn upon for these illustrations, and the author has supplied over two hundred of his own. The book contains chapters on: Gynecological examination methods; Gynecological diagnosis; Gynecological treatment; Diseases of external genitals and vagina; Lacerations and fistulæ of pelvic floor, perineum, external genitals and vagina; inflammatory and nutritive diseases of the uterus; Displacements of the uterus; Fibromyoma of the uterus; Malignant disease of the uterus; Pelvic inflammation; Other affections of Fallopian tubes, peritoneum and connective tissue; Diseases of the ovary and parovarium; Malformations; Disturbances of function; Invasion of the peritoneal cavity for the treatment of gynecological diseases; After-treatment of operative cases; Medicolegal points in gynecology. There is also an appendix containing formulæ, and an index. The addition of the numbers of the pages referred to in the table of contents would increase the value of the book.

Abel's Laboratory Handbook of Bacteriology. Translated from the Tenth German Edition by M. H. Gordon, M.A., M.D. Oxon., B.Sc. With additions by Dr. A. C. Houston, Dr. T. J. Horder, and the Translator. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, Warwick Square, E. C., 1907.

This is a truly excellent little book, of pocket size and bound in oil cloth for use on the laboratory desk, in which a great deal of information in regard to bacteriological technique has been compressed into small space. It gives much useful matter, in regard to methods of sterilization, culture and staining methods in general and as applied to all the commoner organisms, methods of obtaining material for examination, methods of examining the blood in relation to immunity, which includes opsonic technique, the inoculation of animals, preserving cultures and specimens, and the examination of water, milk, dust, air, etc. The additions by the translator and his assistants seem timely and well advised and the translation is fairly good though occasionally such expressions as "frosted pear," meaning a ground-glass electric light bulb, betray their origin too directly.

Practical Nursing: A Text-book for Nurses and a Hand-book for all who Care for the Sick. By Anna Caroline Maxwell, Superintendent of the Presbyterian Hospital School of Nursing; and Amy Elizabeth Pope, Instructor in the Presbyterian Hospital School of Nursing. New York and London: G. P. Putnam's Sons, 1907.

This volume is intended for nurses and also for the laity. Between its covers there will be found much useful material; useful, that is for the nurse. The best part of the book is that dealing with the practical aspects of the subject. The more theoretical and scientific points are capable of improvement; for example the chemical formulæ on pages 197 and 198, expressions such as cholelithias (twice on one page), pediculosis for pediculus (three times on a page), the statement that ptyalin is a synonym of steapsin; there are also numerous misprints.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School.

Volume X.—Nervous and Mental Diseases. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic; Clinical Professor of Nervous Diseases in the Northwestern University Medical School; Ex-President Chicago Neurological Society; and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School; President Chicago Neurological Society, Series 1907. Chicago. The Year Book Publishers. $1.25.

As indicated in the title, this little volume represents the previous year's progress in nervous and mental diseases, the completed series of ten volumes being intended to cover the entire field of medicine and surgery. The publishers state that the series is intended primarily for the general practitioner. The neurologist will find Volume X very convenient for reference. The reputation of the special editors is sufficient guarantee both for the careful discrimination shown in regard to the selection of matter and the ability required accurately to abstract the various articles selected from the current medical literature. Those who wish to keep up to date will find the book a valuable help in their clinical work. New signs and symptoms, of use in diagnosis, new syndromes and diseases (if any), rare cases, and the results of experimental and clinical studies are described. The book has a good index and a number of excellent plates and diagrams.

Text-Book of Organic Chemistry for Medical Students. By Dr. G. v. Bunge, Professor of Physiological Chemistry in the University of Basel. Translated with additions by R. H. Aders Plimmer, D.Sc. (Lond.), Assistant Professor of Physiological Chemistry and Fellow of University College, London. London, New York, Bombay and Calcutta: Longmans, Green & Co., 1907.

The purpose of the present volume is to select for the medical student all that is important and essential for him out of the enormous and constantly increasing mass of facts found in the domain of Organic Chemistry. The author has been unusually successful in his praiseworthy effort to smooth the path of the medical student; and he has produced a book that is authoritative and also extremely interesting. The volume consists of seventeen lectures, which outline the main features of the subject; and, while the work does not pretend to supply all the student's wants in Organic Chemistry, it forms a most admirable introduction to larger and more detailed works.

Diseases of the Ear. By Hunter Tod, M.D. (Cantab), etc. London: Henry Frowde, Oxford University Press, 1908.

This manual well sustains the excellence already attained by its predecessors in the same series. The author's desire "to give a short and practical account of the diseases of the ear" has been very satisfactorily carried out. The chapters devoted to the external ear are concise, yet fully descriptive of the diseases and malformations with treatment. Naturally the space devoted to the middle ear and mastoid process constitutes a large part of the book. It is taken up in eight chapters, and is full of meat. The plates are original and arranged for easy demonstration. The anatomical descriptions are clear and sufficient. Pathology, so often dispensed with in the smaller books, is very consistently considered. The symptoms and treatment have been thoroughly described and we have nothing but praise for the chapter on "Intracranial Disease of Otitic Origin." Considerable interesting material can be found in Hunter Tod's expressed ideas on the subject of "Internal and Middle Ear Deafness." They are good. There is abundant evidence in the remaining chapters on diseases of the internal ear, deaf-mutism, and diseases of the ear in acute infectious diseases and of the nasopharynx, not only that the author has incorporated his ideas derived from extensive clinical experience, but that he also possesses the faculty of placing clearly before the student the important facts. The book is worthy of careful study.

Traité Pratique d'Analyse des Denrées Alimentaires. Par E. Gérard, Professor de Pharmacie et de Pharmacologie a l'Université de Lille et A. Bonn, Directeur du Laboratoire Municipal de la Ville de Lille. Avec 42 Figures dans le texte. Paris: Vigot Frères, 1908.

According to a law which became active in 1905, when food products are to be officially tested in France, four samples are taken. One of these, identified only by a number, is analyzed by the government laboratory according to certain prescribed methods, while the three others are reserved for the so-called *analyse contradictoire*. One of the samples is held in reserve for cases of disagreement, while the two others are entrusted to two experts, one selected by the authorities and the other by the defendant. The present volume is intended to serve as a guide for use in analyses of this sort and contains a description of the official methods as well as an elaborate discussion of whatever other procedures may be employed. All the ordinary comestibles are taken up and the tests for their purity and for the identification of adulterants are set forth clearly and with sufficient detail for practical use. The volume is excellent and may be commended to the attention of all who are interested in this subject.

Handbook of Cutaneous Therapeutics. Including Sections on the X-Ray, High-Frequency Current, and the Minor Surgery of the Skin, for the use of General Practitioners. By W. A. Hardaway, M.D., LL.D., Professor of Diseases of the Skin and Syphilis in Washington University, St. Louis, and Joseph Grindon, Ph.B., M.D., Professor of Clinical Dermatology and Syphilis in Washington University, St. Louis. Philadelphia and New York: Lea Brothers & Co., 1907.

This is a thoroughly practical manual, intended for the use of the non-specialist, dealing primarily with the treatment of diseases of the skin. When necessary, the symptomatology is treated of at length, and when of importance as an indication for intelligent treatment the subject of etiology is also considered, but these sections are given a subordinate place in the scheme of the work. The book is not a treatise on dermatology and its user must be already more or less familiar with the general features of diseases of the skin and must be able to diagnose the various affections in order to avail himself of its counsels. Given this essential preliminary knowledge, however, the practitioner will find his therapeutic path smoothed before him most satisfactorily. The directions for treatment are given clearly and the reader is not confused by a multitude of suggestions or by references to untried methods or to wonderful cures which have been found effective only in the hands of the proposers. The authors give in detail, under each disease, the plan of treatment which they have found of service or which is supported by other recognized authority. Numerous simple ormulas are given and the mention of unusual or unprocurable drugs is wisely omitted. The practitioner who has some knowledge of the general aspects of diseases of the skin will find this a safe and most satisfactory guide to treatment.

The Operation of Surgery. Intended Especially for the Use of Those Recently Appointed on a Hospital Staff and for Those Preparing for the Higher Examinations. By W. H. A. Jacobson, M. Ch. Oxon, F.R.C.S., Consulting Surgeon, Grey's Hospital, and R. P. Rowlands, M. S. Lond., F.R.S.C., Assistant Surgeon and Surgeon to the Orthopedic Department, Grey's Hospital; Joint Teacher of Operative Surgery in the Medical School. Fifth Edition. With seven hundred and seventy-seven Illustrations. In Two Volumes. Philadelphia: P. Blakiston's Son & Co., 1908.

This work on operative surgery, the first edition of which appeared in 1888, has long enjoyed a well-deserved reputation in Great Britain, but is comparatively little known in this country. The claim made in the title and repeated in the preface that the book is for the use only of young surgeons, those recently elected to hospital appointments, and not for those with a large surgical experience, is too modest. There are few surgeons of whatever age or experience who will not find it most helpful at times, and to those of moderate experience and without hospital appointments it will be found on brief trial to be indispensable. The descriptions of operations are so clear and the illustrations so well chosen and explanatory that any one with previous surgical training will, with their aid, be justified in attempting even unfamiliar operations, in an emergency, with confidence of success.

The arrangement of the book is sectional. Amputations, for example, are not treated of as a class, but in one part of the book those of the upper extremity are described; those of the lower extremity finding their place in another section dealing with all the operations on that part. The several parts deal with Operations on the Upper Extremity, Operations on the Hand and Neck, Operations on the Thorax, Operations on the Abdomen, Operations on the Lower Extremity, and Operations on the Vertebral Column. This plan has some advantages for the student who is supposed to study the anatomy of the region at the same time as the operations on the part, but it also has its disadvantages when one wishes to study the operative treatment of some special affection, aneurysm for instance, which may occur anywhere. This inconvenience is lessened in a way by means of the index, but it is still an inconvenience for one who wishes to study operative surgery in general and not the injury of some spinal part. There are two indices, one of names, the other of subjects. The construction of the first is on a plan which might well be followed in other works. Instead of the bare name of a surgeon with a reference to the page where he is mentioned, the reason for mentioning him is also given. Under Whitehead, for example, the references are to "excision of the elbow joint," "operation for cancer of the tongue," " mode of securing lingual arteries," "varnish," and "care of esophageal pouch." An index of names so constructed may be useful and is certainly an improvement over the usual collection of meaningless names. This improvement is offset, however, by the fact that each volume is separately indexed so that one has often to consult two indexes in order to find a special subject. The book is purely operative in its scope, containing nothing on pathology or the symptomatology of surgical diseases; the indications for operation are given when necessary, and in places the pros and cons of the operative management of certain conditions, such as appendicitis, are discussed more or less fully. The book is thoroughly up to the times, the comparatively recent Matas operation for aneurysm, for example, being fully described. It requires some search to find it, however, as its description is given in the section dealing with operation on the popliteal space. This is an instance of the inconvenience of the sectional plan of the work. It is a small objection, however, and is of no weight in comparison with the many points of excellence in the work.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-ninth Annual Session, Held in Chicago, June 1, 2, 3, 4, and 5, 1908.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 1016*)

SECTION ON DISEASES OF CHILDREN.

Wednesday, June 3—Second Day.

The Development of the Infantile Stomach.—Dr. D. E. ENGLISH of Milburn, N. J. read this paper. He said that the chief object of the scientific care of the infant was the development of a perfect adult with a normal adult stomach. The regularity of feeding was outlined and attention was called to the manner of feeding. He stated that development of the general musculature was necessary to the proper development of the stomach muscles. The capacity of the infantile stomach was not definitely known. Exercise of the stomach muscle was absolutely necessary for health and digestion. Irregularity of feeding was advocated where circumstances so demanded.

Dr. I. A. ABT of Chicago said that babies were often overfed. The method of feeding depended upon the child's capacity for digestion and the individual peculiarities of the patient.

Dr. A. JACOBI of New York said the two-hour limit between feedings was the best. He stated that even two hours after feeding material had been found in the child's stomach.

Dr. JOHN LOVETT MORSE of Boston advocated the two-hour feeding limit, and believed the stomach was empty at the end of two hours.

Dr. CLARENDON RUTHERFORD of Chicago said he preferred the three-hour limit of feeding, as this method secured rest for mother and child.

Dr. CHARLES DOUGLAS of Detroit stated that in the matter of feeding everything depended on the child's capacity for assimilation. He believed that the character of the stools was a good index to the solution of the feeding problem.

A Study of the Quantity and Quality of Breast Milk During the First Two Weeks of the Puerperium.—Dr. EFFA V. DAVIS of Chicago presented this subject, which was based upon a study of one hundred cases. The babies were divided into three classes, according to their ages. Each child was weighed before and after feeding. The average infant required from fourteen to eighteen ounces of milk daily. The diet of the nursing mothers was chiefly milk, though meat was permitted once daily. The supply of milk in the breasts was good. The children were fed at two-hour intervals during the day and three-hour intervals at night were enforced. During the first week loss of weight was noted in all the infants, but, at the end of two weeks sixty infants had regained in weight. Attention was called to the effect of emotions, anger, grief, etc., on the quantity and quality of mother's milk, and it was observed that the mothers were of a tranquil frame of mind during the stay in the hospital. These experiments proved that rest and tranquility of mind on the part of the mother, together with a regulated diet, increased the quantity and improved the quality of the breast milk.

The Problem of Breast Feeding.—Dr. J. ROSS SNYDER of Birmingham, England, read this paper. He said that a large percentage of early infant mortality was due to the absence of breast feeding. A strong plea was urged for a detailed study of the physiology and pathology of lactation. He stated that nursing mothers were, in many instances, not thoughtfully protected. Mothers were encouraged to suckle their offspring. Several instances were cited whereby the lives of a number of infants were saved with a daily milk supply which he had obtained from the breasts of nursing mothers. This milk was placed in bottles and conveyed to the unfortunate children who were deprived, otherwise, of maternal nursing.

A Consideration of Some Fallacious Standards Employed in Artificial Feeding of Infants.—Dr. GODFREY ROGER PISEK of New York read this paper. He said that some definite scientific method of artificial feeding was needed, and a plea was urged for its speedy development. The properties were desired and not the physical appearance of the substances used in feeding. He stated that a gain of weight in an infant was an index of proper feeding, and discouraged the caloric method of valuing food, since the results were too indefinite.

The Gospel of Top Milk.—Dr. A. JACOBI of New York presented this subject, in which he reviewed the process of intestinal digestion and summarized his remarks as follows: 1. Artificial feeding was never equivalent to mother's milk. 2. The alleged improvement in artificial feeding was overestimated. 3. Between mother's and cow's milk there were many differences. 4. Good results were obtained by a reduction of the fat to 2 per cent. 5. Feeding was more successfully managed by brains rather than mathematics. 6. Cane sugar was preferred to sugar of milk. 7. The cereal decoctions were increased when the baby showed a loss of weight. 8. Asses' milk was supplied when cows' and mother's milk produced unfavorable results in the child. 9. The gospel of top milk was a heresy.

High Fat Percentages in Infant Feeding: Causes and Effects.—Dr. THOMAS S. SOUTHWORTH of New York read this paper. He said the subject of fat percentage in artificial feeding was the important topic of the hour. Much valuable time was lost and progress delayed by misrepresented conditions of the stools of artificially fed infants. Curds were reported where none existed. He claimed that high fat errors were caused by miscalculations of percentages and misused top-milk methods. He believed rich milk contained fat in excess of 4 per cent. A knowledge of when and how formulas were used was important. He spoke of two classes of patients—those in whom normal amounts of fat produced indigestion and those disturbed by excessive amounts of fat.

Dr. C. F. WAHRER of Fort Madison said that some children thrived on anything. He thought the use of buttermilk was good, and he was not in favor of the mathematical top-milk methods.

Dr. JOHN LOVETT MORSE of Boston believed with Dr. Jacobi that brains were preferable to mathematics in infant feeding. He said that formulas gave best results when suited to the individual case.

Dr W. J. BUTLER of Chicago said that too much weaning was done before the proper time. Tuberculosis and insanity on part of mother called for a sudden weaning. He thought high fat percentages were harmful.

Dr. THOMAS M. ROTCH of Boston thought that the fat percentages as used were not too high. He denounced the use of patented foodstuffs in infant feeding. Milk formulas were too indefinite. He advised treatment of the individual child and explained that set rules for every case were useless.

Dr. J. A. WORK of Indiana said that rapid feeding of infants was harmful.

Dr. CHARLES DOUGLAS of Detroit believed that rice or barley water was the best diluent in milk mixtures.

Dr. THOMAS S. SOUTHWORTH of New York closing, said that many cases of weaning were advised by physicians who were ignorant of the laws of infant feeding. He stated that mothers were also responsible for many cases.

Hydrotherapy in Scarlatina with Special Reference to Tub Baths at 90° for Nervous Symptoms in Early Stages.—Dr. D. S. HANSON of Ohio read this paper, in which he reviewed the marked relief of convulsions and

other nervous symptoms afforded by the hot bath. He reported several cases in which satisfactory results were obtained by hydrotherapy in form of hot baths. He believed many complications were avoided by its use.

Dr. R. B. Gilbert of Louisville said that in his experience children objected to the bath, and advised colonic irrigations of normal salt solution as a substitute.

Dr. Hanson, in closing, said that he had experienced no difficulty in the question of bathing in the cases reported.

The Diagnosis of Pneumonia in Infants.—Dr. Roland G. Freeman of New York presented this subject. He believed that the symptoms and not the physical signs determined the diagnosis. He reported a typical case and based his diagnosis on the following points: 1. Sudden onset. 2. Mental depression. 3. Rapid respirations. 4. Fever and cough. 5. Rigid condition of muscles of neck and upper extremities.

Dr. W. W. Butterworth of New Orleans said that many cases of pneumonia were mistaken for some abdominal trouble, especially appendicitis, and stated that a careful examination of the lungs in every case was good practice.

Circulatory Disturbances in Diphtheria.—Dr. John Howland of New York read this paper. He reviewed a series of cases which he had carefully studied and presented the following conclusions: 1. Fatty degeneration of the heart muscle was frequently found. 2. Thrombosis and embolism were not so common. 3. Death was caused by paralysis of the vaso-motor centers. 4. The drugs used in the treatment of cardiac disturbance were digitalis, caffein, and nitro-glycerin. 5. Indications for medication depended on the condition of the first sound of the heart. 6. Experiments proved that a great disturbance of metabolism existed even into convalescence.

A Summer Camp for Treatment of Sick Babies.—Dr. Walter Graham Murphy of Hartford presented this subject. He said that this camp was established for the treatment of children who suffered principally from gastro-intestinal disorders. Four tents were erected along the Connecticut River in Riverside Park, Hartford. The number of cases treated during the summer months has averaged from ten to twelve daily. The patients were brought to the camp by their mothers, who received instructions as to the management of the infants when at home. The mortality of some sixty cases treated during a certain period was about 18 per cent. This was explained by the fact that many of these cases were moribund when presented for treatment. A more extensive camp was contemplated in the near future.

Dr. J. M. Beffel of Milwaukee said that a similar plan of outdoor hospital was established in Milwaukee. It was situated on Lake Michigan. He suggested an adoption of this plan by other large cities.

Dr. T. W. Kilmer of New York said that the mortality quoted by Dr. Murphy was unusually large. He thought that the object of this camp was a good one.

Dr. W. F. Allen of Chicago stated that Chicago had an institution that carried on this manner of work.

Dr. Charles G. Kerley of New York thought that the mortality quoted by Dr. Murphy was too high, and asked what treatment was carried out in the summer camp.

Dr. J. W. Van Derslice of Chicago urged the formation of clubs and societies to maintain these camp hospitals.

Dr. Murphy closed the discussion. He said that the mortality rate quoted was not guaranteed as the exact per cent. of deaths. He was not certain, but thought it ranged from 14 to 18 per cent.

The Prephysical Signs of Tuberculosis in Children.—Dr. W. C. Hollopeter of Philadelphia read this paper. He said that tuberculosis in children had no definite incubation period. He classed it as an infectious disease and stated that sometimes it remained latent throughout the life of the individual. A plea was urged for public measures to overcome the spread of this disease. Attention was called to the presence of enlarged bronchial glands, together with loss of weight, anemia, and gastro-intestinal catarrh. These were important incipient signs. He referred to the protean types of expression of tuberculosis which occurred in childhood.

Dr. A. W. Fairbanks of Boston thought it was rather difficult to discriminate between enlarged bronchial glands and the thymus body.

Dr. R. B. Gilbert of Louisville said that the tubercle bacillus was found in the stools before glandular enlargement was noted. Night sweats were likewise an early sign.

Dr. C. G. Kerley of New York said that in a certain New York hospital tuberculin was employed to determine early cases of tuberculosis. He said that by this method many cases of supposed bronchitis were proved incipient cases of tuberculosis.

Dr. Alfred Friedlander of Cincinnati said that lymphocytosis was a good early sign of tuberculosis. He advised use of *x*-ray in determining enlarged glands.

Dr. J. W. Van Derslice of Chicago thought an accentuated pulmonic second sound was a good early sign of pulmonary weakness.

Dr. W. J. Butler of Chicago placed importance on the ophthalmic reaction in these cases. He suggested that the examination of the eyes in every suspected case was a good practice.

Dr. J. F. Hultgen of Chicago said all depended on the early recognition of an adenitis. The blood showed an increase in the lymphocytes, and the findings were practically those of a case of chloranemia.

Dr. Hollopeter closed the discussion. He said that the smears obtained from the throat secretion showed the presence of the tubercle bacillus very early in the disease. He believed the blood findings were important.

Adaptation of Fresh Air Treatment of Tuberculosis to Pediatric Practice.—Dr Alexander McAllister of Camden, N. J. read this paper. He summarized his remarks as follows: 1. No race was exempted from tuberculosis. 2. Outdoor life was a necessity for many. 3. Majority of infants were predisposed to tuberculosis. 4. Tuberculosis was home-bred. 5. Cold, damp air was not fresh air. 6. Treatment all depended on the age and condition of the child. 7. Treatment in general was fresh air and suitable diet.

Dr. D. E. English of New Jersey said he believed in the fresh air treatment. He likewise believed that cold air was not always fresh air.

Dr. C. F. Wahrer of Fort Madison said that children were benefited by fresh air treatment at night as well as day. He stated that tuberculosis was not so common among children of the rural districts.

Dr. A. W. Fairbanks of Boston said the cases of tuberculosis in children in large cities were of two classes—the well marked and those predisposed to the disease. He suggested sanitarium treatment for well-marked cases, and outdoor schools for the incipient cases.

Dr. J. W. Beffel of Milwaukee said that early diagnosis of tuberculosis was desired at all times. He criticised modern architecture and said the unsanitary conditions of the home were responsible for many cases. He thought that an insufficient amount of proper food accounted for many cases. He believed that a careful watch was necessary in all children under ten years, as this was the crucial period.

Dr. P. J. Allen of Chicago said that fresh air was good when administered night and day. Incipient cases progressed more favorably when kept from school.

Personal Observations in Scarlet Fever in Children.—Dr. Charles G. Kerley of New York read this paper,

which was based on a study of 500 cases. He summarized his remarks as follows: 1. Scarlet fever was both contagious and infectious. 2. Cases were rarely found under age of one year. 3. Incubation period was four to eight days. 4. A distinct angina was present in the majority of cases. 5. Nephritis occurring during the course of disease depended on the nature of the epidemic. 6. Period of desquamation was feebly contagious. 7. Hydrotherapy was employed for febrile conditions. 8. Potassium chlorate was given in three-grain doses for the angina.

An Epidemic of Hemorrhagic Nephritis Following Scarlet Fever.—Dr. C. F. Wahrer of Fort Madison read this paper. He said his deductions were obtained from a study of an epidemic of 200 cases and concluded as follows: 1. The etiology of scarlet fever was unknown. 2. Thirty-five per cent. of the cases had nephritis. 3. The mortality was but 3 per cent. 4. There were no relapses. 5. The number of cases in the epidemic was unusually large. 6. Treatment was symptomatic.

Dr. Henry E. Tuley of Louisville said that isolated cases of scarlet fever were more severe than those noticed in an epidemic.

Dr. R. B. Gilbert said that prophylaxis was the first step in the treatment. He gave no medicine in his cases as a rule.

Dr. H. M. McClanahan of Omaha believed that scarlet fever was contagious even after the third week.

Dr. F. A. Churchill of Chicago said it was best to quarantine until desquamation was completed.

Dr. B. H. Blair of Lebanon cited a case of hemorrhagic nephritis which followed diphtheria.

Dr. Kerley closed the discussion. He said the disease was feebly contagious during desquamation. Chlorate of potassium gave good results in his hands.

Dr. Wahrer closed the discussion of his paper. He said he used very few drugs in the treatment of his cases.

Thursday, June 4—Third Day.

Officers.—The following officers were elected for this section for the session of 1909: *Chairman,* Thomas S. Southworth, of New York; *Vice-Chairman,* C. F. Wahrer, of Fort Madison, Ia.; *Secretary,* W. W. Butterworth, of New Orleans; *Delegate,* R. B. Gilbert, of Louisville; *Alternate,* A. W. Fairbanks, of Boston.

The Ambulatory Treatment of Pneumonia in Infants and Young Children.—Dr. T. W. Kilmer of New York read this paper, which was based upon the study of thirty-six consecutive cases treated at the dispensary. He summarized his deductions as follows: 1. The ages of the children treated ranged from two to twelve years. 2. The patients were brought to the clinic in all kinds of weather. 3. Mothers were instructed as to hygiene, fresh air, clothing and food. 4. All directions were written. 5. The use of the stethoscope was necessary in determining localized areas of congestion. 6. Absolute rest of the patient was advised. 7. Castor oil was used for laxative effect; mustard plaster for counter irritation; hydrotherapy for high temperatures, and ipecac for the cough. 8. The mortality was 2 per cent.

Dr. S. McHamill of Philadelphia said children were liable to infection from contagious disease in dispensary services. He thought exposure to all kinds of weather was unsafe, and advised hospital treatment.

Paralytic Dementia in Childhood.—Dr. A. W. Fairbanks of Boston reported a case of a boy 14 years old, who, until the age of 12 years, was apparently in good health. At this time he became irritable and lost control of his actions. His speech was faulty and he suffered from convulsions and tremors. The autopsy confirmed the diagnosis of paralytic dementia. Syphilis was the only cause of this affection, though the family history in this case was not definite. The mother, however, was suspected as having had specific trouble.

Dr. S. J. Walker said that paresis was very rare at this age. He believed that all cases reported occurring in children were congenital in origin, and cited a case of brain tumor that simulated paresis. He desired to know the ocular findings in the case reported.

Dr. Fairbanks, in closing, said the cardinal symptoms of brain tumor were absent in this case. The pupils were dilated and unequal.

Hyperpyrexia in Children: Causes and Treatment.—Dr. Philip Marvel of Atlantic City presented this subject. His observations were drawn from a study of forty-eight cases, and epitomized as follows: 1. The term pyrexia signified a complex morbid process, characterized by an elevation of temperature. This was caused by (a) microorganisms, (b) traumatism, (c) drug poisoning, (d) neurotic affections. 2. Hyperpyrexia was merely an exaggerated form of pyrexia. 3. Hyperpyrexia was not as fatal to life in childhood as in adolescence. 4. Hydrotherapy was the proper form of treatment for this condition.

Hemorrhages of the Suprarenal Capsules in the Newly Born, with Report of Two Cases Due to Infection.—Drs. Jennings C. Litzenberg and S. Mark White of Minneapolis presented this paper, reporting two fatal cases within the first week of life. One case showed focal necrosis in the adrenals, intestinal hemorrhage and lobular pneumonia, while the other presented evidences of a large hemorrhage ruptured into the abdominal cavity. The observations were summarized as follows: 1. A review of the literature failed to reveal a definite cause of this condition. 2. Suprarenal hemorrhage was more common than hemorrhage into other viscera. 3. Anatomic peculiarities and active or passive congestion are etiological factors. 4. The pneumonia bacillus in pure culture was found in the adrenals. 5. Death resulted from a cessation of the physiological function of the glands.

Dr. A. Jacobi of New York said that many deaths within the first week of life were due to meningeal hemorrhages. He desired to know if there was any connection between the sudden death of these cases and the hemorrhage.

Dr. Litzenberg said he was unable to explain the sudden death and its connection with the hemorrhage.

Cerebellar Symptoms in Hydrocephalus, with a Pathologic Report of a Case Associated with Syringomyelia.—Dr. John H. W. Rhein of Philadelphia read this paper, in which he reported a case of a boy eight years old. The symptoms in this case were vomiting, vertigo, disturbance of vision and convulsions. The physical examination showed a protrusion of the eyeballs, enlargement of the head, and spasticity of the legs. Death occurred at the end of two years. The autopsy showed intense hydrocephalus, two cysts at the cerebellar pontine angles and syringomyelia.

Chronological and Anatomical Age.—Dr. Thomas Morgan Rotch of Boston presented this subject, which was illustrated by a series of röentgenographs. The investigations were carried out with a view of establishing a reliable index as to the age of a child, with special reference to the child labor law. The experiments were performed on two hundred children, and the results were summarized as follows: 1. Röentgenographs of the hand and wrist supplied more reliable data of the child's general development than did the chronologic age method. 2. Children of the same grade in school showed vast differences in the anatomic development of bones of the wrist, and hence the general development indicated differences. 3. The Röentgen ray was always reliable and efficient. 4. A plea was urged for physicians to take up the subject in the interest of the child. 5. The anatomic development of the wrist was probably the best reliable index of the child's age.

Dr. A. Jacobi of New York said that this was a new

study. It was anatomy combined with physiology. The further development of the subject was urged.

Dr. F. A. Abt of Chicago believed that this standard was useful in determining when children were best fitted for school work.

Dr. Rotch in closing the discussion, said that his experiments were not completed as yet, but he believed a provisional index of the child's age was found in the anatomical development of the bones of the wrist.

A Study of the Anemias of Infancy.—Dr. John Lovett Morse of Boston read this paper. His deductions were as follows: 1. The most characteristic features found in the blood of infants suffering from anemia were the relatively low percentages of hemoglobin, the relatively large number of non-granular cells and the morphologic changes in the red blood corpuscle. 2. Chlorosis did not occur at this age. 3. Pernicious anemia was rarely encountered in infants. 4. Secondary anemia was common and often associated with enlargement of the spleen. 5. Leukemia was very rare in infants.

The Vaccine and Serum Treatment of Gonorrhea in Female Children.—Dr. W. J. Butler and J. P. Long of Chicago presented this subject. Their summary was as follows: 1. No local treatment was given. 2. The most effective dose was determined by the opsonic index. 3. Of twelve acute cases treated, nine completely recovered. 4. Of thirteen chronic cases treated, nine recovered. 5. The average period of treatment was from thirty-nine to forty-three days.

The Vaccine Treatment of Gonococcus Vulvovaginitis in Infants and Children.—Drs. F. S. Churchill and A. C. Soper, Jr., of Chicago presented this paper. The results of their observations were as follows: 1. Gonococcus vulvovaginitis was an obstinate affection and much dreaded in children's hospitals. 2. No local treatment was advised. 3. The dosage depended on the opsonic index. 4. Inoculation probably shortened the stay of patients in the hospital. 5. It was impossible to state whether this form of treatment shortened the duration of the disease.

SECTION ON PRACTICE OF MEDICINE.

Thursday, June 4—Third Day.

Dr. C. F. Hoover of Cleveland in the Chair.

Officers.—*Chairman*, Dr. Joseph L. Miller of Chicago; *Secretary*, Dr. Wilber Tileston of Boston; *Orator in Medicine*, Dr. James B. McElroy of Memphis, Tenn.; *Delegate*, Dr. George Dock of Ann Arbor, Mich.; *Alternate*, Dr. William S. Thayer of Baltimore.

Disguised Starvation—Dr. Nathan Rosewater of Cleveland read this paper and made the following summary: He submitted what to him seemed a hitherto overlooked self-evident physiological principle governing the nutrition of man, but not that of animals, namely, unlike animals who must follow instinct because possessing no higher controlling faculty, man's highest faculty, reason, presided over his instincts, appetite, fullness, satiety, etc., giving to those due but not absolute weight in deciding and controlling his final acts. Man's yielding to over-indulgence of food through uncontrolled appetite or his repeated refusal to eat through lack of appetite were physiological errors and injurious to health. Having no appetite was not a criterion for insufficient eating, since man possessed abundant processes for digesting his food, without appetite. Disguised starvation was prevalent from insufficient food intake, without reason (mainly from economy, worry, and ignorance), causing an atonic state and rendering the subject susceptible to many intercurrent diseases, readily resulting in tuberculous and other infections. To save all classes from such results, the public should be educated to know by tables of normal weight and normal height; those far away to either side from the normal range should be taught to use good reason, judgment and will, so as to keep within the normal by controlling the quantity, quality, and time of their meals. The superiority and progress of civilized man depended in recognizing and controlling his powers to his greatest advantage.

A Case of Syphilitic Infection of Fourteen Years' Duration.—Dr. Henry C. Buswell of Buffalo reported such a case in which the point of real interest was the persistency and duration of the fever which, in his experience, had not been characteristic of syphilitic infection. Had there been the slightest doubt of the correctness of the original diagnosis of syphilis it had been absolutely dispelled by the results of the treatment.

Dr. Joseph L. Miller of Chicago called attention to the resemblance between tertiary lues and intermittent malarial fever, with the long freedom from fever. He had seen four cases diagnosed as cholecystitis because, at some time, there had been some pain over the site of the gall-bladder. Two other cases had been diagnosed as pulmonary tuberculosis because of an accompanying bronchitis. In two other cases no diagnosis was made. With one or two exceptions these patients had a leucocyte count of from 10,000 to 12,000, and another who was autopsied had a count of 12,000.

Dr. Charles G. Stockton of Buffalo believed the paper to be a very important one because it emphasized a fact that had not been generally recognized; these patients might have a long-continued fever, intermittent in character, which did not go on to recovery under ordinary treatment, but responded promptly when an antisyphilitic treatment was given.

Dr. William S. Thayer of Baltimore said that these cases might well be confounded with cases of typhoid fever. He recalled and reported such a case.

Remissions in Pernicious Fever.—Dr. Walter L. Bierring of Iowa City read this paper. He said that out of a series of twenty-five cases seen during the past few years he had selected a few of the most striking as illustrative of remissions in pernicious anemia. In several instances where fermentative changes in the intestine were a prominent symptom high colonic irrigations with normal salt solution seemed to be connected with remissions or improvement. A certain parallelism was maintained between the changes in clinical signs and blood findings, the blood condition being usually a fair index of the degree of improvement in the patient, and also of the reactive changes in the hemotopoietic organs, especially the bone marrow. Some French writers laid stress on the value of the syndrome "leucopenic-lymphocytoses" and diagnosis and prognosis. The disappearance of the leucopenia and modification of the leucocyte formula suggested improvement. Although the blood underwent a marked improvement in the remission period it still preserved certain abnormal features indicating that a disturbance in the hemogenetic function continued to exist. That pernicious anemia was an expression of a toxemia, probably enterogenetic in origin, was borne out by clinical studies and experimental demonstration. Therefore care of the intestinal tract was a special factor in the treatment. The recent case of Herter attributing etiological significance to specific fermentations in the intestinal tract was very suggestive. While the present lack of etiologic unity prevailed it was evident that the explanation of the remission phenomenon, and the finding of a definite curative measure, were problems still to be solved.

A Clinical Method for the Determination of the Sodium Chloride Content of the Blood and Other Body Fluids.—Dr. Douglas Vanderhoff of Richmond, Va., read this paper. He said that the sodium chloride content of the blood and body fluids might be accurately estimated by an adaptation of Volhard's method of quantitative chloride determination after first precipitating and oxidizing the albumin bodies by nitric acid. The method

required one cubic centimeter of blood, aspirated from a vein, and accurately measured in a volumetric pipette. The clinical application of this method showed a practically constant value for NaCl in a variety of conditions such as nephritis with and without edema, uremia, pneumonia, epilepsy, gastric anacidity, and conditions of cachexia. Variations in the amount of NaCl depended upon the relative proportion of plasma and corpuscular elements in the specimen examined, with the highest values in cases of anemia and the lowest figures in patients with venous stasis due to heart, kidney, or lung affections. In conclusion he said: (1) The proportion of sodium chloride in the plasma of the blood was constant in conditions of health and disease. (2) The term "chloridemia" was unjustified.

Experiments Upon an Ash-Free Diet and Salt Metabolism, with Special Reference to Edema in Diabetes Mellitus.—Drs. Elliot P. Joslin and Harry W. Goodall of Boston presented this communication and drew the following conclusions: (1) The withdrawal of salt from the body did not lead to the production of acid intoxication of the diabetic type, nor did it increase an acidosis already existing. (2) Edema in cases of diabetes mellitus presented marked acidosis and this frequently occurred coincident with restriction of the carbohydrates in the diet. (3) This edema was not due to the simultaneous administration of sodium bicarbonate. (4) The edema was probably caused by the increased production of acids causing injury to the kidney, thereby leading to retention of salt. (5) Patients in diabetic coma almost without exception presented no signs of edema, and also diminished chlorine in the urine if alkalies were given. (6) The careful administration of salt along with sodium bicarbonate was recommended in the prophylactic and actual treatment of diabetic coma.

Pellagra.—Dr. R. H. Bellamy of Wilmington, N. C., made this report. He said that pellagra was a trophoneurotic disease, affecting the cerebrospinal, digestive, and cutaneous systems. Its immediate cause was a fatty oil or extractive that developed in fermenting and decomposing maize. Pellagra occurred in Egypt only where corn was eaten. This disease was not recognized in this country prior to 1907. During that year eighty-eight cases were reported as occurring at Mount Vernon, Alabama. This epidemic was very fatal, sixty-four percent. dying, and the maize eaten by these patients was found to be decomposed and unfit for food. A sporadic case was reported in September, 1907, from Texas. Besides the case Dr. Bellamy reported, there were a half-dozen more which had occurred in his community. There was no doubt but that the disease had been occurring there for many years. There was a fatty degeneration of the liver, kidneys, spleen, and myocardium, atrophy of the muscular coat of the intestine, and sometimes ulceration. There was also atrophy, sclerosis, and pigmentation of the skin. There was pigmentary degeneration of the cells of the brain, cord, liver, spleen, kidneys, and heart. The abdominal viscera were usually atrophied. The chronic form usually began with lassitude, headache, and anorexia, with a tense epigastrium, and possibly with nausea and vomiting. A serous diarrhea soon followed. In ten days to two weeks there developed an erythema, confined to the portions of the body exposed to the sun. The erythema was usually bright red in color, very much like a sunburn, and disappeared on pressure, unless hemorrhagic. Often there occurred vesicles and bullæ, with very little itching and burning compared to the process. Generally in two weeks the erythema subsided and desquamation took place. After three recurrences the patient usually became much emaciated and the diarrhea would increase in severity, and melancholia, increasing to dementia, occurred. There might be edema and foul sweats. Epileptiform convulsions might occur. As a rule there was an albuminuria. The blood changes were unimportant. The disease lasted five years, on an average, but might be prolonged fifteen years. The acute form began with pain in the epigastrium, headache, nausea, and vomiting, and this was followed by a severe diarrhea and stomatitis. The stools were often bloody, and occasionally there was bleeding from the gums and tongue. The patient rapidly became emaciated. There was delirium and a typical typhoidal course, and death usually occurred in ten days or six weeks. He said he had never seen such a case recover. The report of three cases followed.

Prominent Symptoms in the Diagnosis of Gastric and Duodenal Ulcers.—Dr. Christopher Graham of Rochester, Minn., contributed an interesting paper on this topic. He said the accurate differentiation between duodenal ulcers and ulcers of the pyloric end of the stomach offered great difficulties, and was often impossible. He laid emphasis upon four points. First, the periodicity of the attacks of gastric and duodenal ulcers. Following the period of attack came an intermission of days, weeks, or months, appearing often as unaccountably and as suddenly as did the distressing symptoms. These attacks repeated at irregular intervals for years and continued for varying periods, increasing in intensity, perhaps but slowly, the intermission shortening, until finally, the patient might fail to reach at any time the complete ease of previous years. These periods of complaint with the periods of intermission, each covering days or months, were so characteristic that, excluding other details, this one feature was often quite sufficient to warrant a probable diagnosis. Second, the number of years through which these attacks and intermissions or remissions had run before surgical relief had been advised, or perhaps accepted. As one's experience lengthened he was inclined to the belief that error was much oftener to be laid at the door of conservative surgery than at the door of aggressive surgery, and for that reason the sufferer failed to get the early relief which was secured only through surgery. In a series of 258 duodenal cases there were but few with histories of less than one year, and in these the symptoms were clear and often urgent. In their histories the repetition of spells with intermissions or remissions, together with long years of trouble, had been clear cut in 90 per cent. of cases. Third, the characteristics of pain, its great diagnostic significance and its place in differential diagnosis. Pain in gastric ulcer was the most constant symptom and perhaps the most characteristic in its manifestations. Not the kind of pain, or location of the pain, but the time of pain was the distinguishing feature. Usually two to five house after a hearty meal the burning, gnawing feeling began, increasing in intensity until vomiting or irrigation had removed the offending material. Food eased the pain, and the heartier the meal the longer the relief. This was especially true in duodenal ulcer. Gradually, however, this relief lessened, until late in the history and after the patient had been long a "surgical" case, food eased but little. The pain came in definite periods of attack; it came daily or two or three times a day during this period; often it came in from two to five hours after a meal and was therefore premeal as often as aftermeal. It was epigastric, radiating seldom to other areas and was relieved in part, if not wholly, by food, drink, alkalies, vomiting, or irrigation. Fourth, the ready control of all symptoms during the period of attack by the measures that control pain, such as food, alkalies, irrigation, vomiting, etc.

Compensatory Diarrheas.—Dr. Heinrich Stern of New York presented this paper. He said that compensatory diarrhea might supervene in manifold conditions and at various stages of a progressive affection. In exceptional instances only would compensatory diarrhea be encountered as a terminal symptom. It was always symptomatic of arrest or perversion of the function of the skin, lungs, kidneys, of the organs of internal secretion. Its immediate effect tended to systemic correction or compensation

in the majority of instances and was, therefore, of a salutary nature. As a matter of fact most compensatory diarrheas had a corrective tendency as far as the bowels were concerned, but they did not call forth a general compensatory effect. By compensatory diarrhea he meant a phenomenon of varying degree and duration, apt to ensue and to return with more or less frequency in the course of systemic deterioration, and characterized by the diarrheal discharge of incompletely or perversely catabolized substances, or by that of catabolic products normally excreted by other emunctories. He generally recognized three general types of compensatory diarrheas, viz., those which were concomitant with deficient or perverse catabolic processes; those which were the consequences of functional or structural disease of certain excretory organs; and those occurring during the period of physiological systemic decline. Dr. Stern put forth this general prognostic axiom, that as long as a diarrheal process continued to compensate efficiently for loss of function of the skin, lungs, kidneys, and the organs of internal secretion, the patient was in a satisfactory osmotic equilibrium and there was little immediate danger so far as life itself was concerned, and the pathological or artificial suppression of the diarrheal discharges might give occasion to very grave symptoms and even cause death, in case the functionally deficient organs had not regained their activity meanwhile. A true compensatory diarrhea should not be interfered with unless there was sufficient evidence that the localized intestinal irritation and hyperemia unduly prolonged the increased peristalsis. Inasmuch as a compensatory diarrhea was symptomatic of the insufficiency of excretory function in general, it indicated the points toward which treatment should be directed. Such treatment should tend to the stimulation of the catabolic processes and the regeneration of the eliminative qualities of the skin, lungs, and kidneys.

Acute Insufficiency of the Suprarenals.—Dr. R. S. Lavenson of Philadelphia read this paper. He said that hemorrhage of the adrenals had been generally recognized as a common pathological finding in still-born infants or those dying shortly after birth; but in none of the countries outside of France had acute insufficiency of the adrenals become a factor in medical diagnosis in advanced life as well as in infants. That a symptom complex dependent upon acute insufficiency of the adrenals did occur was well exemplified by the case which he reported in full. The following classification he believed would serve as a basis for clinical consideration: (1) Cases of sudden onset with epigastric pain and tenderness, vomiting, profound prostration, feebleness and rapidity of pulse, coldness of extremities, lumbar tenderness and at times diarrhea, and abdominal distention, followed within a few days by death. (2) The asthenic type in which the predominant feature was a profound asthenia ending within a few days in death. (3) The nervous type, in which the predominant symptoms had been either convulsions, coma, delirium, or a typhoid state. (4) Cases of sudden death. At autopsy nothing except a destructive lesion of the adrenals, usually hemorrhage, had been found. (5) Cases occurring in association with a purpuric eruption or hemorrhages into the abdominal viscera. Of all of the symptoms the most constant and one of the most characteristic was a greater or less degree of asthenia.

Trichiniasis, with Special Reference to Eosinophilia and Diagnosis.—Drs. S. Marx White and Chelsea C. Pratt of Minneapolis presented this paper, which was read by Dr. White. The family consisted of thirteen individuals. Nine of these ate raw infected pork and became ill. Four did not eat the pork and developed no symptoms. A boy, seven years old, died twenty-one days after the infection occurred. Abstracts of the individual histories and physical examinations were presented. They discussed the special points in diagnosis of trichiniasis as brought out in these cases, together with those reported in a former series. The gastrointestinal symptoms usually began in about two days, sometimes earlier, and consisted in diarrhea, more rarely constipation, sometimes accompanied by nausea, vomiting, and cardialgia. The fever might be high and persistent. The myositis was well known. Edema of the face usually began about six days after the infection and was most characteristic about the eyelids, and the slight reddish hue was very suggestive of this disease. They believed this to be one of the most important early suggestive signs. It might persist for from ten days to two weeks or even a month or more. Edema of the extremities or of the trunk was not noted as early as in the face. Its development was considerably later. Eosinophilia was usually well developed when the cases were first seen; in one of their cases it was noted first on the ninth day almost coincident with the onset of muscular symptoms. The polymorphonuclear count varied widely and was highest as a rule in the most severe cases. Mixed infection might be responsible for the increase in number of the polymorphonuclear neutrophiles in all cases. Some of the cases showed an increase in the lymphocytes in the later periods of the disease. The increase in eosinophiles was quite constant, both as regards percentage and absolute number per cubic millimeter. Glandular swelling was noted in only three of their cases, and appeared to be directly associated with the myositis. Alopecia was noted as a late symptom, but did not occur in the children. They called attention to the disease in order to emphasize again the principal points in diagnosis and make its recognition by the general practitioner more frequent. The typical symptoms were: (1) Early and sometimes persistent diarrhea, with or without gastric symptoms, often accompanied by headache and backache. Constipation might replace the diarrhea. (2) Fever might be high and persistent. It was usually moderate and continuous. (3) Careful examination of the body after the eighth day would give evidence of myositis. (4) Edema of the face might begin as early as the sixth day. Its location and appearance were very characteristic. Sweating occurred, but it had no particular significance. (5) Eosinophilia was present except possibly in cases of overwhelming infection, when they must rely upon evidences of severe myositis, unquestionable history of infection with living parasites, or excision of portions of the muscle for a diagnosis.

Modifications in the Clinical Course of Typhoid Fever Under the Influence of Menstruation and the Successive Menstrual Epochs, with Remarks on Treatment.—Dr. Alfred Stengel of Philadelphia presented this paper. He said the symptomatology of typhoid fever was regarded too exclusively from the point of view of the infection. The infectious process, and not the individual, occupied the center of attraction. So far as treatment was concerned, and this applied more to tuberculosis than to typhoid fever, a stereotyped course and machine-made methods were prescribed and, if the progress was unfavorable, the blame was attributed to exceptionally severe infection while at most a vague general suspicion of lack of resistance or unusual susceptibility was admitted. That antecedent pathological conditions, whose results might be to an extent controllable, and even physiological conditions, might influence the course of severe infections, as well as other diseases, did not enter enough into consideration. One saw this in the general disregard of the effect of pregnancy on the course of pulmonary tuberculosis and cancer. So far as typhoid fever was concerned he said that one might very profitably investigate and report the untoward influences of an old nephritis, or precedent nervous disease and of the tobacco and alcohol habit. He wished to address the section, however, on the influence of a purely normal function which, under the peculiar conditions of the infection, became capable of exercising unusual effects that modified the course of the disease. These modifications in the symptomatology had their prin-

cipal importance in the fact that they were likely to lead to misinterpretations. Writers made little mention of any relation between menstruation and the disease, or the reverse, except to call attention to the fact that the onset of menstruation might be delayed by the occurrence of typhoid fever, and that the succeeding period or periods might fail to occur during the continuance of the infection, and that various other minor disturbances might be met with. For some time Dr. Stengel had recognized a modification of the course of typhoid by the menstrual period. In young women the event of typhoid fever was often unusually severe, and was more decided when the menses failed to appear; in some cases very severe symptoms occurred though the flow was normally established or excessive. The onset in these cases was more abrupt than was usual in the disease, and nervous symptoms commonly attended. Attempts to control the fever by cold water often increased the difficulties and added enormously to the patient's suffering. Dr. Stengel then referred to a few striking cases.

Tuberculin Therapy.—Dr. H. Bascom Weaver of Asheville, N. C., read this paper. He believed the causes of failure of the tuberculin therapy in its first epoch, and the negative results that followed could be accounted for in two ways; the remedy, with few exceptions, was employed in a faulty manner, and the pathological findings were falsely interpreted by the profession. Too much tuberculin was given in too short a time, producing thereby a condition of excessive intoxication, and the organism was overwhelmed with toxins. In view of disastrous results there was little wonder at the revulsion of feeling against the remedy. The mode of action of tuberculin was not fully understood. The efficiency of tuberculin as a curative, as well as a diagnostic, agent had been proven. Trudeau stated that after sixteen years of treatment with the remedy he obtained permanent results in 18 to 25 per cent. of cases. Dr. Weaver believed that moderate reactions of 99-100° of fever, with slight physical symptoms, were conservative and did the patient good. The type of cases most desirable and that, in his experience, had yielded almost invariably good results, were (1) the incipient and moderately advanced classes, who were most afebrile, with a temperature ranging at times not over 100° and whose nutrition was good. (2) Uncomplicated first and second class with fever, although bacilli were found in the sputum. (3) Fibroid cases without febrile reactions. (4) Cases where fever was due solely to the toxin of bacilli and would not abate under rest and hygienic treatment; small tentative doses might do good. The following were the contraindications: (1) All third stage cases with mixed infection. (2) Second-stage cases with bad nutrition and mixed infection. (3) Hemoptysis. When hemorrhage occurred, it was a signal to stop the use of tuberculin temporarily until all signs of danger from hemorrhage had gone. (4) Heart disease. (5) Where the frequency and weakness of the pulse were present without any recognizable heart lesion. (6) Weak and greatly emaciated patients with a feeble and fast heart action. (7) All complications of internal organs, and nervous diseases. Alcohol and all intemperance must be sedulously avoided. The most important feature in tuberculin therapy, and one on which success or failure depended, was the question of dosage. The main principle was to so regulate the dose and interval that the maximum dose might be reached with as little disturbance as possible. The interval should be lengthened gradually. The treatment should last for from six months to two years. He said that at no time and under no circumstances did they consider tuberculin treatment superior to the dietetic, hygienic, and open-air treatment. It was only an adjunct.

Friday, June 5— Fourth Day.

Serum Treatment of Epidemic Cerebrospinal Meningitis.—Dr. Louis Williams Ladd of Cleveland read this paper. He said that the serum was first used systematically by him in a series of cases beginning early in April, 1907, at Castalia, Ohio, where an epidemic of this disease had created such havoc that half the population of the village of six hundred inhabitants had fled in terror. Between the months of January and April, eighteen cases of meningitis developed. Of these eighteen cases, twelve died and six recovered, a mortality of 66.7 per cent. and a recovery of 33.3 per cent. Serum was used in three cases. All of these recovered. Of the fifteen cases in which the serum was not used, twelve died and three recovered, or a mortality of 80 per cent. and a recovery of 20 per cent. Altogether the serum had been employed by him in thirty-two cases. Of these, one was still in the acute stage of the disease and could not be considered in the report. In thirty of the thirty-one cases the diagnosis was confirmed by finding the characteristic Gram negative diplococci in coverslip preparations, and in almost all cases the cultures were positive. That these were not mild cases but of marked severity was evidenced by the fact that when the serum was administered, seventeen of the cases were comatose, three unconscious and wildly delirious, and twelve cases were semi-comatose, or conscious with great irritability. Abstracts of the histories of each case were given. Eleven of the thirty-one cases died and twenty recovered, or a mortality of 35.5 per cent. and a recovery of 64.5 per cent. Twenty-four cases were treated ninety-six or less hours after the onset. Of these sixteen recovered and eight died, a mortality of 33.6 per cent. and a recovery of 66.7 per cent. Eighteen cases were seen seventy-two hours or less after the onset of symptoms. Fourteen of these recovered and four died, a mortality of 22.2 and recovery of 77.7 per cent. Thirteen cases were seen forty-eight hours or less after the onset of symptoms. Nine of these recovered and four died, a mortality of 30.7 per cent. and a recovery of 69.3 per cent. Five cases were seen twenty-eight hours or less after onset of symptoms. All of them recovered, or a percentage of 100 per cent. Eleven of the thirty-one cases developed in children under five years of age. Six of these recovered and five terminated fatally, a mortality of 45.5 per cent., and recovery of 54.5 per cent. The average duration of the disease in the remaining cases seen twenty-eight hours or less after the onset of symptoms, when treated with the serum, was twelve days; above twenty-eight hours and including forty-eight hours, nineteen days; above forty-eight hours and including seventy-two hours, forty-nine days. The temperature terminated by crisis in eleven cases and by lysis in nine cases. Examination of the spinal fluid in all cases showed the polymorphonuclear leucocytes to be the predominant cell with varying numbers of endothelial cells present.

The Serum Treatment of Meningitis.—Dr. Frank J. Slader and Lewellys F. Barker of Baltimore presented this paper. Since January 1 they had had at the Johns Hopkins Hospital 21 cases, compared to 33 cases in the previous nineteen years. Of the 33 cases treated simply by lumbar punctures in the previous years of the hospital, 21 died and 12 recovered, a mortality of 64 per cent. The mortality for the individual years varied from 43 per cent. to 100 per cent. With this they compared a mortality of 14 per cent. for the 21 cases treated with the antimeningitis serum in the past five months. Three of the 21 cases had died. One of the three was a fulminating case in the class of cases regarded by Flexner as beyond the reach of treatment. The second case had a complicating bronchopneumonia of both lungs upon admission, and died in forty-eight hours. The third case was a boy, twenty-nine months old, who received his first injection of serum on the fourteenth day of the disease when he was unconscious, having convulsions, and practically *in extremis*. He died of a respiratory paralysis in seventy-two hours, and even then two injections of serum had succeeded in clearing the spinal fluid of organisms and giving sterile

cultures. Twelve of the twenty-one cases were children under twelve years. Of these but one died, giving a mortality of 8 per cent. Seventy per cent. of the cases not treated by serum had complications, mainly bronchopneumonia; whereas, eight of the 21 serum cases (38 per cent.) suffered as follows: Otitis media, 3; pneumonia, 2; both otitis media and pneumonia, 1; arthritis, 1; acute myocarditis, 1. From this small experience they briefly summarized their impressions as follows: (1) All cases of meningitis in which the meningococcoccus was suspected should receive lumbar punctures and serum injection as early as possible. (2) The serum did no harm in cases not of meningococcal type. It might do good. (3) The course of the disease was changed by the serum. The long-drawn-out, chronic cases were not seen, and the terrible sequelæ, often worse than death, were rare. (4) As to the character of the serum, the rapidity with which the signs and symptoms disappeared suggested an antitoxic property; the positive chemiotaxis for polymorphonuclear leucocytes, and the promoted phagocytosis were the most definite and constant features; finally, the reduction in the number of diplococci, the change in their staining properties, and the loss of viability spoke for a bactericidal power, although it might be explained by the phagocytosis.

Pathology, Diagnosis and Treatment of So-Called Hodgkin's Disease.—Dr. Hugo A. Freund of Detroit read this paper. He said that it was Dr. Dorothy M. Reed who described accurately in 1902 the picture of this disease. It consisted simply of a fibrous increase of the reticulum of the lymph glands, a proliferation of the endothelium, the swollen cells lying in the fibrils; there was an increase in the number of lymphocytes. There were large, epithelioid, giant cells different from the giant cells occurring in tuberculosis and in most cases a number of mono- and polynuclear eosinophiles. The clinical picture that a case of Hodgkin's disease presented did not differ from the picture seen in a patient suffering from tuberculous adenitis or lymphosarcoma. The onset might be acute with diffuse soft swellings appearing rapidly along the lymphatic chains. In chronic cases a few moderately soft, discrete, movable painless swellings were felt first in the superficial cervical lymphatics on one or both sides of the neck. More rarely axillary nodes were first involved.

The Diagnostic Value of the Cutaneous and Conjunctival Tuberculin Reactions.—Dr. William Engelback and Dr. J. W. Shankland of St. Louis presented his communication and offered the following conclusions: I. The specificity of these reactions had as yet not been demonstrated, as proven by (1) experimental work on animals: (2) the presence of a positive reaction in nontuberculous conditions; (*a*) local conditions of the eye, trachoma, follicular conjunctivitis, etc.; (*b*) general conditions; clinically normal individuals, other diseases not tubercular (typhoid) controlled clinically and by autopsy; (3) the presence of a negative reaction in tuberculous cases; (*a*) miliary tuberculosis, tuberculous meningitis, and advanced pulmonary tuberculosis, etc.; (*b*) incipient and second stage tuberculosis controlled clinically and by autopsy; (4) the production of this reaction by other toxins, typhoid, etc., in tuberculous cases. II. The activity or extent of the lesion bore no definite relation to the degree or kind of reaction, for (1) one or both of these reactions had occurred in clinically normal individuals in an inconstant manner; (2) there was a marked variation of the occurrence of these reactions in different stages of clinical tuberculosis; and (3) there had been more definite control than the clinical findings of the relationship of the state of the lesion with the degree and kind of reaction. III. The conjunctival reaction was not free from danger for (1) nontuberculous lesions of the eye had been aggravated by it; (2) tuberculous lesions of the eye had been stimulated into activity by this reaction, and (3) general or constitutional symptoms had been produced by this instillation.

(*To be continued.*)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of the State of California.

San Francisco, April 7, 1908.

ANATOMY.

1. Describe the relation of intra and extracranial veins, locating five principal emissary veins.
2. What segments of the spinal cord supply nerves to the abdominal viscera?
3. What muscles attach to the greater and lesser tuberosities of the humerus and what tendon passes between these tuberosities?
4. Describe the topographical anatomy of the elbow.
5. (a) What bones can be palpated along the inner border of the foot? (b) What ligament does the keystone of the longitudinal arch rest upon?
6. Indicate what vertebræ mark the level of the following: (a) umbilicus, (b) end of spinal cord, (c) inferior angles of the scapulæ, (d) central tendon of the diaphragm, (e) inferior border of the pleuræ.
7. Describe the arrangement of the superficial inguinal lymphatic glands and indicate from what structures they receive lymphatic vessels.
8. What arteries supply the following structures and what arteries are they branches of: (a) thyroid gland, (b) mammary gland, (c) uterus, (d) testicle, (e) great toe?
9. What nerves innervate the following: (a) muscles of mastication, (b) muscles of expression, (c) sterno-cleido-mastoid, (d) muscles of the lingual region, (e) muscles of anterior femoral region, (f) skin on posterior surface of the thigh, (g) skin on inner surface of the arm, (h) skin over subcutaneous surface of the tibia, (i) tonsil, (j) meatus auditorius externus.
10. What are the relations and position of the pancreas?

HISTOLOGY.

1. Describe the histological structures and their relation to each other in a cross-section of the wall of the duodenum.
2. Describe the histological structure of the testes.
3. Describe the histological structure of a typical lymphatic gland.
4. Name the histological structures found in the eyelid.
5. Draw a diagram of a cross-section of a nerve trunk showing histological structures.
6. Describe the histological structure of the pancreas.
7. Describe the histological structure of the wall of the ureters.
8. Identify two specimens.
9. Identify two specimens.
10. Identify two specimens.

PHYSIOLOGY.

1. Discuss briefly the subject of animal heat.
2. Describe in detail the digestion of carbohydrates.
3. (a) Explain the production of the apex beat of the heart. (b) Give the cardiac nerve supply.
4. (a) In what regions of the chest may bronchial breathing be normally heard? (b) What is meant by Cheyne-Stokes respiration?
5. What is the physiological reason that the head, upper extremities, and abdomen are relatively larger in the new-born than in the adult?
6. (a) Give the specific gravity, chemical reaction, and the normal constituents of human urine. (b) Average quantity in 24 hours.
7. Give the distribution and function of the fourth cranial nerve.
8. Distinguish between cerebral and spinal paralyses in (a) Muscle tonus. (b) Nutrition of muscles. (c) Electrical reactions of muscles.
9. Where are the following centers: (a) Parturition, (b) auditory, (c) respiratory, (d) visual, (e) micturition.
10. Define: (a) Amnion, (b) corpus luteum, (c) myopia, (d) leucin, (e) eupnea, (f) erythrocyte, (g) hemolysin, (h) neuron, (i) dialysis, (j) lipase.

CHEMISTRY AND TOXICOLOGY.

1. Define (a) elements, (b) compounds, (c) synthesis, (d) analysis.
2. (a) Name and give formulæ of the compounds of nitrogen and hydrogen. (b) What two important elements found in the blood?
3. (a) In what is human milk richer than cows' milk? (b) In what poorer? (c) State the difference between egg albumin and serum albumin.
4. (a) Of what significance are hemin crystals? (b) What is the composition of hemoglobin?

5. (a) Injury to what principal organs would cause glycosuria? (b) Describe the chemistry of the stomach.
6. (a) What are carbohydrates? (b) What is the fat splitting ferment of the pancreatic juice? (c) Name five classes of proteids.
7. (a) Describe a quantitative test for sugar in the urine. (b) Give test for bile pigment in the urine. (c) What is the normal amount of urea excreted by the male in 24 hours?
8. Give classification of poisons with example of each.
9. (a) Describe Marsh's test for arsenic. (b) Is the quantity of saliva increased or decreased by mineral acids?
10. Symptoms: Intense burning pains from mouth to stomach, nausea, vomiting, diarrhea with bloody stools and swelling of the abdomen, lips and tongue white and shriveled, death in two days from collapse, crystalline substance found in the stomach. White soluble in water and gives black precipitate with H_2S. Name the poison and state what should have been the antidote.

BACTERIOLOGY.

1. Describe briefly and clearly the manufacture of serum agar. (a) State the sources of serum that may be used for this purpose. (b) Name three organisms to whose growth it is an essential.
2. Given a bacterial invasion, state exactly and in order the steps taken to prepare an homologous vaccine, including the standardization of same.
3. State the technique of a bacterial examination of milk. (a) What pathogenic organisms may be found? (b) How would you estimate the number per c.c.
4. What is tuberculin? (a) Name three varieties. (b) Describe Calmette's reaction.
5. Describe the organism of erysipelas. (a) How would you differentiate it from members of the same group?
6. Describe the gonococcus. (a) What organisms may be mistaken for the gonococcus? (b) Differentiate each.
7. Differentiate between pathogenic and nonpathogenic organisms. (a) Give four examples of each.
8. Describe the bacillus of tetanus. (a) Give its common habitat. (b) Name three toxins due to it.
9. Examination of two slides.
10. Examination of two slides.

PATHOLOGY.

1. In what disease conditions do we find acetonuria? Name the chemical bodies allied to acetone.
2. What conditions may produce a recrudescent fever in typhoid?
3. In tuberculous peritonitis, what are the sources of infection? What may be the postmortem appearance?
4. Describe the cerebrospinal fluid in epidemic meningitis; what are the portals of infection; and what is the gross pathology?
5. What are the causes of endarteritis; describe the successive microscopic stages; what changes in the brain may result from arteriosclerosis?
6. Name in the order of frequency the different lesions that may result from a gonococcus infection of the female genitourinary tract.
7. What are the typical anatomical findings, post mortem, in puerperal eclampsia?
8. Discuss the theories of the etiology of cancer.
9. Microscopic specimens.
10. Gross pathological specimens.

GENERAL DIAGNOSIS.

1. Differentiate cerebral hemorrhage, embolism, and thrombosis.
2. Describe bone lesions of syphilis.
3. Describe talipes equinus.
4. Describe uncinariasis.
5. Differentiate pyelitis and pyelonephritis.
6. Differentiate variola, varicella, rötheln, and scarlet fever.
7. Differentiate dislocation of the head of the femur from fracture of its neck.
8. Discuss thoracic aneurysm.
9. Differentiate inguinal hernia and enlarged inguinal gland.
10. Describe psoriasis.

OBSTETRICS.

1. (a) Describe the changes that take place in the mucous lining of the uterus preparing it for the reception of the fertilized ovum. (b) If it becomes attached what further changes take place? (c) If it passes without becoming attached what further changes occur?
2. At what period of pregnancy is an abortion or miscarriage most dangerous, and explain fully why.
3. Describe the conditions most likely to result in laceration of the cervix, and what remedies would you use, or what treatment would you employ to reduce the danger as much as possible?
4. Describe the clinical symptoms that would lead you to suspect tubal pregnancy during the early months of gestation.
5. Name five diseases that may be transmitted to the fetus *in utero*.
6. Describe fully how you would conduct a face presentation.
7. In breech presentations: (a) Are they more dangerous to the mother? If so, why? (b) Are they more dangerous to the child? If so, why? (c) Describe how you would conduct them to decrease the danger to either as much as possible.
8. Name ten drugs the mother should be instructed to avoid during lactation, and state fully how they endanger either the mother or child.
9. Describe fully the difference in the conditions calling for the use of oxytocics, and those calling for forceps.
10. Describe the conditions which would lead you to fear impending rupture of the uterus, and what would you do to prevent it?

GYNECOLOGY.

1. Give five causes of amenorrhea.
2. Give five causes of metrorrhagia.
3. Differentiate briefly between: pyosalpinx, tubal pregnancy, and parovarian cyst.
4. Differentiate briefly between: labial hematoma, labial hernia, labial hydrocele of the round ligament, and labial abscess.
5. Differentiate briefly between: hematosalpinx, hematometra, and hematocolpometra.
6. What is a rectocele, its most common cause and its treatment?
7. Give treatment of retroversion of the uterus in a severe case. Outline the operation.
8. Give a good reason for circumcising a woman and describe the operation.
9. What are the positions of the uterus in the three stages of prolapse?
10. Give diagnosis and treatment of urethral caruncle.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA.

San Francisco, April 7, 1908.

ANATOMY.

1. The *extracranial* veins are found in the superficial fascia above the aponeurosis. They communicate with the *intracranial* venous sinuses of the dura in several ways: (1) By the emissary veins; (2) by the angular and supraorbital veins anastomosing with the ophthalmic vein, which opens into the cavernous sinus; (3) by the diploic veins.
Five principal emissary veins: (1) A vein passing through the mastoid foramen, connecting the lateral sinus with the occipital and posterior auricular veins; (2) a vein passing through the foramen cecum, connecting the superior longitudinal sinus with the mucous membrane of the nose; (3) a vein passing through the parietal foramen, connecting the superior longitudinal sinus with the veins of the scalp; (4) a vein passing through the posterior condyloid foramen, connecting the lateral sinus with the deep veins of the neck; (5) small veins passing through the foramen ovale, connecting the cavernous sinus with the pharyngeal and pterygoid veins.
2. The abdominal viscera receive their nerve supply from the sixth dorsal to the first lumbar segment of the spinal cord.
3. To the greater tuberosity of the humerus are attached: Supraspinatus, infraspinatus, and teres minor muscles. To the lesser tuberosity is attached the subscapularis. Between these tuberosities there passes the long tendon of the biceps.
5. (*a*) The bones that can be palpated along the inner border of the foot are: Os calcis, internal malleolus, scaphoid, internal cuneiform, first metatarsal, sesamoid bones of the great toe.
(*b*) The astragalus is the keystone of the longitudinal arch of the foot, and it rests upon the inferior calcaneoscaphoid ligament.
6. (*a*) The *umbilicus* is opposite the fibrocartilaginous disc between the third and fourth lumbar vertebræ.
(*b*) The *end of the spinal cord* is opposite the lower edge of the body of the first lumbar vertebra.
(*c*) The *inferior angles of the scapulæ* are opposite the spine of the seventh dorsal vertebra.

(*d*) The *central tendon of the diaphragm* is opposite the spine of the eighth dorsal vertebra.

(*e*) The *inferior border of the pleuræ* is opposite the spine of the twelfth dorsal vertebra.

7. The superficial inguinal lymphatic glands are grouped along the lower edge of Poupart's ligament; they are flattened and ovoid in shape, and about half a dozen in number.

They receive lymphatic vessels from: part of the thigh, the buttock, skin of penis and scrotum or vulva, and from the superficial lymphatics of the abdomen below the umbilicus.

8.

	Arterial Supply.	*Branch of.*
(*a*) Thyroid gland....	1. Superior thyroid.	1. External carotid.
	2. Inferior thyroid.	2. Thyroid axis.
	3. Thyroidea ima (sometimes).	3. Innominate, or arch of aorta.
(*b*) Mammary gland....	1. Perforating branches.	1. Internal mammary.
	2. Long thoracic.	2. Axillary.
	3. Anterior intercostals.	3. Internal mammary.
	4. Intercostals.	4. Thoracic aorta.
(*c*) Uterus....	1. Uterine.	1. Internal iliac.
	2. Ovarian.	2. Abdominal aorta.
(*d*) Testicle...	1. Spermatic.	1. Abdominal aorta.
	2. Artery of vas deferens (sometimes).	2. Superior vesical.
(*e*) Great toe..	1. Dorsal digitals.	1. Dorsalis hallucis.
	2. Princeps hallucis.	2. Communicating of dorsalis pedis.

9

	Innervated by—
(*a*) Muscles of mastication.	(*a*) Inferior maxillary division of trigeminus.
(*b*) Muscles of expression.	(*b*) Facial.
(*c*) Sterno-cleido-mastoid..	(*c*) Spinal accessory.
(*d*) Muscles of lingual region.....	(*d*) Hypoglossal.
(*e*) Muscles of anterior femoral region.....	(*e*) Anterior crural.
(*f*) Skin on posterior surface of thigh.....	(*f*) Small sciatic and external cutaneous.
(*g*) Skin on inner surface of arm.....	(*g*) Internal cutaneous and lesser internal cutaneous.
(*h*) Skin over subcutaneous surface of tibia.	(*h*) Internal saphenous.
(*i*) Tonsil.....	(*i*) Glossopharyngeal and vagus.
(*j*) Meatus auditorius externus.....	(*j*) Inferior maxillary division of trigeminus, and vagus.

HISTOLOGY.

4. The histological structures found in the eyelid are: Skin, areolar tissue, orbicularis palpebrarum, palpebral ligament, levator palpebræ, tarsal cartilage, Meibomian glands, lashes, sebaceous follicles, and conjunctiva.

PHYSIOLOGY.

1. The heat of the body varies very little in health; it is maintained at a temperature of about 98° to 99° F.

The heat of the body is *maintained* by the thermotactic centers in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost. Heat is *gained* to the body by (1) the muscles, during contraction; (2) the secreting glands; (3) the brain, during mental activity; and (4) by the ingestion of food and hot liquids.

Heat is *lost* to the body by (1) the skin, through evaporation, radiation, and conduction; (2) the lungs; and (3) the excretions (feces and urine).

2. (*a*) *Bronchial breathing* is normally heard over the trachea, just above the suprasternal notch, also over the primary bronchi.

(*b*) *Cheyne-Stokes respiration* is a condition in which the respirations gradually increase in volume and rapidity until they reach a climax, when they gradually subside, and finally cease for from ten to forty seconds, when the same cycle begins again.

5. The head, upper extremities, and abdomen are relatively larger in the new-born child than in the adult, because: (1) Most of the blood of the umbilical vein goes through the liver before reaching the inferior vena cava; (2) most of the pure blood is distributed by the branches of the arch of the aorta to the head and upper extremities. The better blood supply of these parts causes their better growth and development.

6. (*a*) The specific gravity of normal urine is from about 1015 to 1025; its chemical reaction is acid. The normal constituents of urine are: Water urea, uric acid, urates, hippuric acid, kreatinin, xanthin, hypoxanthin; sulphates, chlorides, and phosphates of sodium and potassium; phosphates of magnesium and calcium; nitrogen and carbon dioxide.

(*b*) The average quantity voided in 24 hours is about fifty ounces.

7. The fourth cranial nerve is distributed to the superior oblique muscle of the eye; it is the motor nerve of this muscle.

8.

	Cerebral Paralysis.	*Spinal Paralysis.*
(*a*) Muscle tonus.	Spastic; may be contractures.	Flaccid.
(*b*) Nutrition of muscle.....	Normal, or slight atrophy.	Marked atrophy.
(*c*) Electrical reaction.....	Normal.	Little or no response to faradic current; partial or complete reaction of degeneration to galvanic current.

9. (*a*) The center for parturition is in the lumbar region of the spinal cord; (*b*) auditory center is in the superior temporosphenoidal convolution of the cerebrum; (*c*) respiratory center is in the floor of the fourth ventricle; (*d*) visual center is in the occipital lobe; (*e*) center for micturition is in the lumbar region of the spinal cord.

10. (*a*) *Amnion* is the innermost of the fetal membranes.

(*b*) *Corpus luteum* is a yellow body found in the ovary at the site where a Graafian follicle has discharged its ovum.

(*c*) *Myopia* is a condition in which the anteroposterior axis of the eye is abnormally long, and parallel rays are focused in front of the retina.

(*d*) *Leucin* is a crystalline substance found in several tissues of the body; in the liver it is converted into urea; it is also found in the urine; its chemical name is amidocaproic acid.

(*e*) *Eupnœa* is easy or normal respiration.

(*f*) *Erythrocyte* is a red or colored blood corpuscle.

(*g*) *Hemolysin* is "a substance produced in the body of one species of animal by the introduction of red blood-corpuscles derived from the body of another species. It is capable of dissolving the red blood-corpuscles of the animal species from which the blood was obtained." (Gould.)

(*h*) *Neuron* is the unit of the nervous system; it consists of a nerve-cell with its processes and terminations.

(*i*) *Dialysis* is the process of separating substances from a mixture by placing the latter in a vessel with porous walls and immersing it in water, when the more diffusible substance passes through the porous wall.

(*j*) *Lipase* is a fat-splitting enzyme, found in the pancreatic juice and elsewhere; it has a reversible action.

CHEMISTRY AND TOXICOLOGY.

1. (*a*) *Elements* are substances which cannot, by any known means, be split up into two or more other kinds of substance.

(*b*) *Compounds* are substances made up of two or more elements chemically united, in definite proportions.

(*c*) *Synthesis* is the formation of compounds from elements or from simpler compounds.

(*d*) *Analysis* is the decomposition of a compound into simpler compounds or into elements.

2. (*a*) Compounds of Nitrogen and Hydrogen: Ammonia, NH_3; Hydrazine, N_2H_4; and Hydrazoic Acid, N_3H.

(*b*) Two important elements found in the blood: Oxygen and carbon.

3. (*a*) Human milk is richer than cow's milk in sugar.

(*b*) Human milk is poorer than cow's milk in proteids.

(*c*) "There are four distinct points of difference between the egg and the serum albumins: (1) Egg albumin is rapidly coagulated by alcohol; serum albumin but slowly. (2) Egg albumin is coagulated by ether; serum albumin is insoluble in ether, but is not actually coagulated. (3) Egg albumin is less soluble than serum albumin in nitric and in hydrochloric acids. (4) If egg albumin is injected into the circulation, or even if very large quantities of it are taken into the stomach, some of it may be excreted, apparently unchanged, in the urine, even in healthy individuals. This is not the case with serum albumin." (Pellew's *Manual of Chemistry.*)

4. (*a*) Hemin crystals are an absolute indication of the presence of blood-pigment.

(*b*) Hemoglobin is composed of the following elements: Carbon, hydrogen, oxygen, nitrogen, sulphur, and iron.

5. (*a*) *Permanent glycosuria* can be produced by injury to the floor of the fourth ventricle of the brain.

Transitory glycosuria has been observed after injury to the liver, the nervous system, and the cervical vertebræ.

6. (*a*) *Carbohydrates* were formerly defined as substances of unknown constitution, composed of carbon, hydrogen, and oxygen, the last two being in the proportion to form water.

(*b*) The fat-splitting ferment of the pancreatic juice is Steapsin.

(*c*) Five classes of proteids. Albumins, Globulins, Coagulated proteids, Derived proteids, and Proteoses.

7. (*a*) Method for the *quantitative estimation of sugar in urine*: *Fehling's method*: The solution is made as follows:

I.	Dissolve cupric sulphate	51.98 gm.
	in water to	500.00 c.c.
II.	Dissolve Rochelle salt	259.9 gm.
	in sodium hydroxide soln. sp. gr. 1.12 to	1,000 c.c.

(Piffard.)

When required for use, one volume of I. is to be mixed with two volumes of II. The copper contained in 10 c.c. of this mixture is precipitated completely, as cuprous oxide, by 0.05 gm. of glucose.

"To determine the quantity of sugar, place 10 c.c. of the mixed soln. in a flask of about 250 c.c. capacity, dilute with H_2O to about 30 c.c., and heat to boiling. On the other hand, the urine to be tested is diluted and thoroughly mixed with four volumes of H_2O if it be poor in sugar, or with nine volumes of H_2O if highly saccharine, and a burette filled with the mixture. When the Fehling soln. boils, add a few gtt. NH_4HO and then 5 c.c. of the urine from the burette, boil again, and continue the alternate addition of diluted urine and boiling of the mixture until the blue color is quite faint. Now add the diluted urine in quantities of 1 c.c. at a time, boiling after each addition until the blue color just disappears. Have ready a small filter, and, having filtered through it a few gtt. of the hot mixture, acidulate the filtrate with acetic acid, and add to it 1 gtt. soln. of potassium ferrocyanide. If a brownish tinge be produced, add another ½ c.c. of dil. urine to the flask, boil, and test with ferrocyanide as before. Continue this proceeding until no brown tinge is produced. The burette reading, taken at this point, gives the number of c.c. of dilute urine containing 0.05 gm. glucose, and this divided by 5 or 10, according as the urine was diluted with 4 or 9 volumes of H_2O, gives the number of c.c. of urine containing 0.05 gm. sugar. The number of c.c. urine passed in twenty-four hours divided by 20 times the number of c.c. containing 0.05 gm. glucose, gives the elimination of glucose in twenty-four hours in grams.

Example: Urine in 24 hours = 2,436 c.c.
Fehling's soln. used = 10 c.c.
Urine diluted with 4 vols. H_2O
Burette reading = 18.5 c.c.

$$\frac{18.5}{5} = 3.7 = \text{c.c. urine containing 0.05 gm. glucose.}$$

$$\frac{2{,}436}{3.7 \times 20} = 32.92 = \text{grams glucose eliminated in 24 hours."}$$

(Witthaus' *Urinalysis.*)

(*b*) *Test for bile pigment in the urine*: Put 3 c.c. HNO_3 in a test tube, add a piece of wood, and heat until the acid is yellow; cool. When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquid, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

(*c*) The normal amount of urea excreted by a male in twenty-four hours is about an ounce to an ounce and a half.

8. Poisons may be classified as: 1. Mineral poisons, as arsenic; 2. Vegetable poisons, as oxalic acid; 3. Animal poisons, as ptomains; 4. Synthetic poisons, as chloral.

9. (*a*) *Marsh's test for Arsenic*: This test depends on the fact that arsenic hydride is formed when nascent hydrogen acts on a compound of arsenic:

$$H_3AsO_3 + 3H_2 = AsH_3 + 3H_2O.$$

A small flask fitted with thistle funnel and a delivery tube, as for the production of hydrogen, is used; pure zinc and hydrochloric acid are introduced, and after a short time the hydrogen is ignited. It is advisable to cover the flask with a cloth before igniting the gas, as an explosion may happen unless the air has all been driven out. If the materials are pure the hydrogen flame gives no deposit upon a piece of cold porcelain brought into it, but commercial zinc usually contains arsenic. When the purity of the gas is proved, a little solution of arsenite may be poured down the thistle funnel, which will produce a more rapid evolution of gas, and the flame will become larger and perceptibly colored. A piece of cold porcelain depressed upon the flame will be covered with a deposit of metallic arsenic. The films of arsenic are metallic looking in the thicker places, brownish near the edges; they are easily volatized by heat, and dissolve in solution of bleaching powder. A portion of the glass tube from which the gas is burnt should be heated to redness; the gas decomposes, and a deposit of arsenic appears on the tube, which may be identified in a similar way, or may be converted into crystals of oxide by cautious sublimation in an open tube. (Fisher's *Elementary Chemistry.*)

(*b*) The quantity of saliva is increased by mineral acids.

10. The symptoms given probably indicate poisoning by corrosive sublimate.

The antidote is white of egg in not too large a quantity, followed by an emetic.

PATHOLOGY.

1. *Acetonuria* is found in the following diseased conditions: Diabetes, prolonged fevers, puerperal eclampsia, pernicious vomiting of pregnancy, after chloroform anesthesia, carcinoma, inanition and wasting diseases, general paresis, melancholia, and epilepsy.

The chemical bodies allied to acetone are: Beta-oxybutyric acid, and diacetic acid.

2. The following conditions may produce a recrudescent fever in typhoid: Errors in diet, nervous excitement, and occasionally malaria.

3. In tuberculous peritonitis, *the sources of infection* are: The blood, the intestines, mesentery, Fallopian tubes, uterus, prostate, and epididymis.

The post-mortem appearances: Numerous tubercles in patches, or over the whole surface of the peritoneum, which is hyperemic; the omentum and mesentery are apt to be involved, and become thickened; there is an exudate, which may be serous, serofibrinous, or hemorrhagic; adhesions are often present, in chronic cases. The tubercles are yellowish or opaque, and may undergo caseation or suppuration.

4. In epidemic meningitis, the cerebrospinal fluid is apt to be turbid, may be bloody, and contains pus and the *Diplococcus intracellularis;* pneumonia diplococci, and other bacteria, chiefly streptococci and the various staphylocci have also been found.

The portal of infection is probably the nose, by inhalation.

Gross pathology: "The skull and dura mater are often abnormally vascular; the cerebral sinuses are much distended with blood. All the membranes of the brain are more or less congested; the arachnoid especially is vascular and opaque from inflammatory exudation—this opacity varies from slight milkiness to thick and dense deposits. The characteristic lesion is the whitish or greenish-yellow fibrinopurulent deposit found at the base of the brain; in many cases, however, it is not limited to the base, but extends up along the sulci to the vertex. This deposit varies somewhat with the duration of the disease; in cases which have lasted a week or two, it is abundant, yellowish or greenish; and the origins of the nerves seem to be buried in and compressed by the exudation. The brain substance itself is more vascular than normal, and there is some inflammatory infiltration of its superficial layers. The ventricles in the more acute cases contain turbid fluid, in the more prolonged they may be much distended by excess of clear cerebrospinal fluid. In the spinal cord the lesions are similar to those found in the brain and its membranes." (Quain's *Dictionary of Medicine.*)

6. As a result of gonococcus infection, a woman may suffer from: Urethritis, endocervicitis, vulvitis, infection of Bartholin's glands, vaginitis, endometritis, salpingitis, ovaritis, peritonitis, sterility, cystitis, proctitis.

7. In puerperal eclampsia, there may be found: The cortex of the kidney is pale and swollen, the epithelium shows cloudy swelling, degeneration, or necrosis; the ureters may be dilated; the liver is of normal size or smaller, and shows fatty degeneration and increase of

connective tissue; hemorrhages and infarcts, due to embolism or thrombosis, may also be present; the spleen shows changes similar to those in the liver.

GENERAL DIAGNOSIS.

1. *"Cerebral hemorrhage* occurs after the age of fifty-five, as a rule, with atheromatous arteries and an hypertrophied heart. The onset is sudden, with coma, during exertion or excitement. The temperature falls in an hour, and then rises, sometimes to 106°. Gradual recovery of consciousness takes place in from three to five days, with permanent hemiplegia.

"Cerebral embolism comes at any age, with heart disease or after childbirth. There is a sudden onset, without loss of consciousness or with slight mental confusion, or with rapid return to consciousness. The temperature does not fall, but may rise as high as 102°. Improvement occurs within twenty-four hours to a marked degree, but after three or four days the symptoms return. Monoplegia, hemiplegia, or aphasia may remain. Jacksonian epilepsy may develop if the lesion is cortical, involving a special center.

"Cerebral thrombosis occurs at any age, but chiefly in syphilitic persons and middle-aged men. There are usually premonitions. The onset is slower, without coma, but with dullness of the mind. The temperature does not fall, but may rise to 100°. The paralysis is similar to that observed in embolism.

GYNECOLOGY.

2. Five causes of metrorrhagia: Cancer of uterus, chronic metritis, fibroids, polypi, inversion of uterus.

5. In atresia of the vaginal orifice, when the menstrual blood collects in the vagina and cervix, the condition is called *Hematocolpometra;* when blood collects in the body of the uterus, it is called *Hematometra;* when blood collects in the tubes, it is called *Hematosalpinx.*

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	
Arizona*	Ancil Martin, Phoenix	Phoenix	July 6
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July 14
California*	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 7
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 14
Delaware	J. H. Wilson, Dover	Dover	Dec. 8
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	July 14
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	Nov. 11
Georgia	E. R. Anthony, Griffin	Atlanta	Oct. 6
Idaho	W. F. Howard, Pocatello	Boise	Oct. 6
Illinois	J. A. Egan, Springfield	Chicago	June —
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	Oct. 27
Iowa	Louis A. Thomas, Des Moines	Des Moines	
Kansas	D. P. Cook, Clay Center	Kansas City	Oct. 13
Kentucky*	J. N. McCormack, Bowling Green	Louisville	July 7
Louisiana	F. A. LaRue, 211 Camp Street, New Orleans	New Orleans	Oct. 1
Maine	Wm. J. Maybury, Saco	Augusta	July 7
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec. 8
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	Oct. 13
Minnesota	W. S. Fullerton, St. Paul	St. Paul	Oct. 6
Mississippi	S. H. McLean, Jackson	Jackson	Oct. 13
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov. 23
Montana*	Wm. C. Riddell, Helena	Helena	Oct. 6
Nebraska	E. J. C. Sward, Oakland	Lincoln	Aug. 5
Nevada	S. L. Lee, Carson City	Carson City	Nov. 2
N. Hampshire*	Henry C. Morrison, State Library Concord	Concord	July 15
New Jersey	J. W. Bennett, Long Branch	Trenton	
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July 13
New York	C.F.Wheelock, Univ.of State of New York, Albany	New York Albany Syracuse Buffalo	June 23
N. Carolina*	G. T. Sikes, Grissom	Winston, Salem	
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 7
Ohio	Geo. H. Matson, Columbus	Columbus	Dec. 8
Oklahoma*	J. C. Mahr, Shawnee	Shawnee	June —
Oregon	B. E. Miller, Portland	Portland	July 7
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg	June 23
Rhode Island	G. T. Swarts, Providence	Providence	July 2
S. Carolina	W. M. Lester, Columbia	Columbia	
S. Dakota	H. E. McNutt, Aberdeen	Deadwood	July 8
Tennessee*	T. J. Happel, Trenton	Memphis Nashville Knoxville	May, '09
Texas	G. B. Foscue, Waco	Waco	
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July 6
Vermont	W. Scott Nay, Underhill	Burlington	July 14
Virginia	R. S. Martin, Stuart	Richmond	June 24
Washington*	C. W. Sharples, Seattle	Seattle	July 7
W. Virginia	H. A. Barbee, Point Pleasant	Charleston	July 14
Wisconsin	J. V. Stevens, Jefferson	Madison	July 14
Wyoming	S. B. Miller, Laramie	Cheyenne	

* No Reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 13, 1908:

	Cases	Deaths
Tuberculosis Pulmonalis	400	180
Diphtheria	353	37
Measles	1031	21
Scarlet Fever	513	27
Smallpox	—	—
Varicella	122	—
Typhoid Fever	35	5
Whooping Cough	25	4
Cerebrospinal Meningitis	7	4
Malarial Fever	—	—
Totals	2486	278

Health Report.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending June 12, 1908:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	May 16–23	1	..
San Francisco	May 16–23	2	..
District of Columbia, Washington	May 16–30	7	..
Illinois, Chicago	May 23–30	1	..
Indiana, Indianapolis	May 24–31	2	..
La Fayette	May 25–June 1	1	..
South Bend	May 23–30	2	..
Terre Haute	May 23–30	1	..
Iowa, Ottumwa	May 23–30	3	..
Kansas, Topeka	May 16–30	8	..
Wichita	May 23–30	3	..
Kentucky, Covington	May 23–30	1	..
Lexington	May 23–30	1	..
Louisiana, New Orleans	May 23–30	11	..
Maryland, Baltimore	May 22–30	1	..
Massachusetts, Lowell	May 22–29	1	..
Michigan, Saginaw	May 16–30	26	..
Missouri, St. Joseph	May 16–23	11	..
Montana, Butte	May 19–26	2	..
Tennessee, Nashville	May 22–30	1	..
Ohio, Dayton	May 23–30	6	..
Texas, San Antonio	May 16–30	9	..
Washington, Spokane	May 16–23	7	..
Tacoma	May 17–24	1	..
Wisconsin, La Crosse	May 24–31	2	..
Virginia, Richmond	May 23–30	1	..

SMALLPOX—FOREIGN.

Brazil, Rio de Janeiro	Apr. 26–May 3	123	62
Canada, Halifax	May 23–30	4	..
Winnipeg	May 23–30	2	..
China, Hongkong	Apr. 18–25	12	10
Egypt, Cairo	May 6–13	6	3
Suez	Apr. 13–May 6	12	..
Ecuador, Guayquil	Apr. 18–May 2	8	..
France, Paris	May 9–16	3	..
Great Britain, Leith	May 9–16	1	..
Southampton	May 9–16	1	..
India, Bombay	Apr. 28–May 5	..	55
Calcutta	Apr. 18–25	..	22
Japan, Kobe	Apr. 24–May 2	1	..
Osaka	Apr. 18–25	44	4
Shimonoseki	May 12	..	Present
Italy, Catania	May 14–21	..	1
Japan, Nagasaki	May 3–10	1	..
Mexico, Aguascalientes	May 17–24	3	..
Mexico City	May 11–18	..	23
Russia, Moscow	May 2–9	32	10
Odessa	May 9–16	1	..
St. Petersburg	May 2–9	31	8
Spain, Denia	May 9–16	2	1
Valencia	May 9–16	28	..
Straits Settlements, Penang	Apr. 18–25	1	..
Turkey, Constantinople	May 10–17	..	4
Smyrna	Mar. 24–Apr. 7	..	3

YELLOW FEVER.

Brazil, Para	May 9–16	2	2
Ecuador, Guayaquil	Apr. 18–May 2	..	9

PLAGUE.

China, Hongkong	Apr. 18–25	29	26
Ecuador, Guayaquil	Apr. 18–May 2	..	38
Formosa	Apr. 18–May 2	167	136
India, General	Mar. 28–Apr. 4	10,665	9,015
Bombay	Apr. 24–May 5	..	391
Calcutta	Apr. 18–25	..	90
Rangoon	Apr. 18–25	..	23
Japan, Osaka	Apr. 18–25	3	4
Mauritius	Feb. 1–29	3	3
Peru, General	Apr. 25–May 2	30	22
Straits Settlements, Singapore	Apr. 18–25	..	1
Trinidad	May 31	..	3
Venezuela, Caracas	May 25	..	1
La Guaira	May 22	2	..
	May 31	..	Present

CHOLERA.

India, Bombay	Apr. 27–May 5	..	1
Calcutta	Apr. 18–25	..	314
Rangoon	Apr. 18–25	..	11
Japan, Yokosuka	May 12	1	..

Medical Record

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Original Articles.

METHOD OF THE SPREAD OF YELLOW FEVER.*

BY COL. W. C. GORGAS, M.D.,
ANCON, CANAL ZONE.
CHIEF SANITARY OFFICER, ISTHMIAN CANAL COMMISSION.

I BELIEVE that, in nature, yellow fever is transmitted from one human being to another only by the bite of a female stegomyia mosquito, which has previously bitten another human being suffering from yellow fever. Since the epoch-making work of the Army Board, of which Reed was president, this has come to be universally accepted, and I do not intend to-night to discuss this phase of the question.

In Havana, Cuba, we had a large city—250,000 people, with a considerable nonimmune population, and fresh nonimmunes coming in at the rate of 20,000 a year, and children being born at the rate of 6,000 a year. The city had been infected continuously for one hundred and thirty years, and seemed to have the infecting material in every nook and corner.

We commenced work against yellow fever, along mosquito lines, in February, 1901, and the last case of yellow fever occurred in the city in September of that year; that is, it took us about eight months to get rid of fever in the city.

The general plan of our mosquito anti-yellow fever work was arranged under three general heads. We endeavored in every possible way (1) to prevent the breeding of stegomyia mosquitos, (2) to destroy the stegomyia mosquitos that had become infected, and (3) to prevent mosquitos becoming infected by protecting and caring for the sick so that they could not be bitten by the insects.

To prevent the breeding of mosquitos we divided the city into districts, put each district under the charge of an inspector, who got around to every house in his district once a month, and saw that all breeding places were destroyed.

To destroy infected mosquitos we fumigated with pyrethrum, or sulphur, every house in which a case of yellow fever was reported, and also fumigated all the houses contiguous to the infected one.

To prevent the infection of fresh mosquitos we moved all the yellow fever patients to screened hospital wards, or, if they preferred, screened the house in which they were sick.

The prompt success with which these measures was met I, at the time, attributed principally to the measures taken to destroy infected mosquitos, and to the measures to prevent fresh mosquitos from becoming infected. And this seemed to be the general belief, also, of most of those engaged in the work.

*Read before the Canal Zone Medical Association, Wednesday, April 15, 1908.

I conceived that necessarily a considerable number of infected mosquitos must escape from every fumigation, and it was always more or less a mystery to me why, with some infected mosquitos in all parts of the city, and nonimmune adults and children coming in at the rate of 25,000 a year, we did not continue to have yellow fever. Dr. Chaille and his followers—Guiteras and others—explained the immunity of natives in an infected locality as due to the fact that they have yellow fever in a mild form while infants and children. It seemed that if this were the case we should be having yellow fever at the rate of 6,000 cases yearly in Havana; that these cases would all be infecting mosquitos, and we had taken no measures whatever toward destroying the mosquitos that had been infected by these 6,000 yellow fever children. I thought that the results we obtained in Havana were due to the destruction of the infected mosquitos and to the preventing fresh mosquitos from becoming infected. If 6,000 children were having the fever every year in Havana I could see that our methods destroyed none of the mosquitos that were infected by these children, nor did they prevent fresh mosquitos from becoming infected by them. I, therefore, did not accept Dr. Chaille's explanation of native immunity, though I could see that it was a fact that the native Havanese was immune to yellow fever.

In 1904 I was sent to the Isthmus of Panama to take charge of the sanitary work here. The principal sanitary work at that time was to get rid of yellow fever. We put the same methods in operation which we had used in Havana. But we were on the Isthmus sixteen months before the last case of yellow fever occurred here. Now, what made the difference? Why did we get rid of yellow fever so much more promptly in Havana than in Panama? So far as yellow fever was concerned it seemed to me that it should have been accomplished certainly as promptly at Panama as it was at Havana. I was very much surprised at our want of prompt results at Panama, and have thought over the matter a great deal, and have satisfied myself that I understand the reason why one was apparently accomplished more quickly than the other—for after all the difference is only apparent, not real. We had been doing sanitary work in Havana for two years and a half before yellow fever disappeared, and while for the first two years this work was not being done on mosquito lines, a most excellent machine was being organized and perfected wherewith to carry through the work when the real cause of yellow fever was discovered.

In February, 1901, in Havana, the machine was all perfected, and everything ready, and all that I had to do was to give the necessary orders. In Panama the machine had to be built up from the bottom, and, for the first year, giving orders was of no more use than whistling.

Take a city such as Panama, in which normally

all the conditions are perfect for the perpetuation of yellow fever. Under these conditions, we will say we have one hundred stegomyias to the square yard. When a case of yellow fever occurs it is always bitten by mosquitos during the infective period, and, therefore, always leaves a number of infected stegomyia mosquitos which can convey the disease to nonimmunes present. This has been the mosquito condition of Panama since the world began. Now, if we reduce those mosquitos to fifty to the square yard. the yellow fever case will still be bitten, but not by so many mosquitos, and therefore there will not be so many infected mosquitos left. We would still have yellow fever if nonimmunes were present, but not so extensively. We reduce them still further to twenty-five. A smaller number of stegomyias bite the yellow fever patient, and we have fewer infected stegomyia mosquitos, but still some, and if nonimmunes are present, we have a slight epidemic. We go on still further with our work and reduce them to fifteen. The same results follow, only the epidemic is still milder as to numbers. We go on with our work and reduce them to 10 per cent. of the original number. The probabilities are that at this stage if we introduce the yellow fever patient the patient is not bitten, we get no infected mosquitos, and yellow fever abruptly disappears.

While it is possible with ten mosquitos to the square yard for one mosquito to become infected and give yellow fever to some other nonimmune in the house, it is not probable that this second yellow fever case will infect a second stegomyia. I am inclined to believe that a certain number of stegomyia mosquitos are necessary for the propagation of yellow fever, and ordinarily in yellow fever countries this number is largely exceeded; that your work goes on reducing the number without showing much results; and that, after awhile, your work reduces the number below this spreading point when yellow fever abruptly ceases. Now keep your mosquitos below this number, which we will call the yellow fever point, and no matter how many nonimmunes or how many cases of yellow fever you introduce, yellow fever cannot spread.

Take Havana in September, 1901. There were still stegomyia mosquitos in the city—the inspectors showed them as being present in considerable numbers every day. There were a large number of nonimmunes—over 50,000 at least—and in the preceding months quite a number of known cases of yellow fever; if Chaille's theory is true, there were a still larger number of Cuban children having yellow fever. Yet yellow fever not only did not spread, but disappeared.

Take Panama in December, 1905. There were stegomyia mosquitos, nonimmunes, and yellow fever sick all present, yet the same results came about—yellow fever not only did not spread, but disappeared. I think the reason is that while stegomyias were present they had fallen below the yellow fever point.

This theory, it seems to me, accords more with the facts as you meet them. The destruction of infected mosquitos and isolation of the sick, if carried out to theoretical perfection, might get rid of yellow fever, if the adult nonimmune population were the only people concerned, but if at the same time we have 6,000 children yearly having yellow fever, who are never reported, and not looked after in any way, the work among the adult nonimmunes would not be enough to affect the epidemic in any way. On the other hand, if the number of stegomyia mosquitos were reduced below the yellow fever point, it would not make any difference how many cases of yellow fever we introduced, or how many nonimmunes we had present, the disease would not spread.

When we came to Panama we had to build up a sanitary organization, and had great difficulty in getting supplies and the necessary authority for doing yellow fever work. But believing that the destruction of infected mosquitos and the prevention of mosquitos becoming infected were the essentials in yellow fever work, we concentrated all our energies on this phase of the work, and carried out this part of the mosquito work during the year 1904 just about as thoroughly as we had in Havana, but with no results whatever. As our nonimmunes increased yellow fever increased, and by the spring of 1905 we were having a good deal of yellow fever. But our organization became gradually perfected, supplies came in, the authority of the sanitary department was increased, and the stegomyia work was pushed, and by September, 1905, the stegomyia had been reduced below the yellow fever point and yellow fever disappeared.

The fumigations in Panama were much more extensive than they had been in Havana. In addition to fumigating the infected houses and all contiguous houses we went over the city three different times during the spring and summer of 1905, fumigating every house within its limits, yet yellow fever continued to increase.

I doubt if it is possible under any sanitary organization to do away with the stegomyia mosquito altogether, but it is very possible, as shown by the results of sanitary work, to reduce them below the yellow fever point. If your sanitary work is so organized that you can feel reasonably sure of keeping your stegomyias below this point, then you need have no fear of letting yellow fever cases come in, because even when they are admitted the disease cannot spread. Get your locality in this condition, and you could then do away with your quarantines, and thus grant great freedom to commerce.

I am inclined to think that now at Panama all that is necessary, as far as yellow fever is concerned, is to keep the stegomyia work so organized that we are sure in Panama and Colon of keeping the stegomyias below the yellow fever point. In combating the disease I would not advocate doing away with the other methods. It is very evident, theoretically, and Reed shows in his work, practical, that you could put half a dozen infected stegomyias in a room, and every nonimmune who slept in that room afterwards would develop yellow fever. You could fumigate that room with sulphur, kill the infected stegomyia mosquitos, and nonimmunes could afterwards sleep there with perfect safety. This is an illustration of what fumigation can do under certain peculiarly favorable conditions.

In the yellow fever wards at Ancon during 1905 all the doctors and nurses were nonimmunes. They were in the wards day and night where there were always some yellow fever cases, yet none of them contracted the disease. These wards were so screened and cared for that no stegomyia mosquitos could get at the patients so as to become infected.

But what I wish to emphasize in this paper is the fact that a certain proportion of stegomyia mosquitos in a locality is necessary for the spread of yellow fever; that if the number of stegomyia mosquitos remain above this yellow fever point we will continue to have yellow fever as long as we have nonimmunes present, no matter how much we fumigate or how carefully we isolate the sick, and

I advance Panama in 1905 as an illustration of this phase of the proposition. I think it is impossible to fumigate and isolate the sick more extensively or carefully than was done in Panama in 1905. If the stegomyias are reduced below the yellow fever point we can introduce yellow fever to any extent and nonimmunes in any number and yellow fever will not spread. In proof of this phase of the proposition I advance Havana in 1901 and Panama in 1905 as illustrations.

This, it seems to me, gives a reasonable explanation for the disappearance of yellow fever from Philadelphia, New York, Boston, and Quebec before we knew of its propagation by mosquitos. Take a city such as Philadelphia. The stegomyia is not found there normally, but, one hundred years ago, when Philadelphia was subject to yellow fever, we had numerous wells and cisterns as receptacles for storing water. Ships were constantly coming in from stegomyia regions and introducing the mosquito. Nearly every summer, no doubt, they were brought in and propagated there. When they had bred sufficiently to be above the yellow fever point over any considerable area, and yellow fever was introduced, we had an epidemic. Nowadays they have a piped water supply and there are very few breeding places. The communication with stegomyia regions is almost entirely by steamer, and few mosquitos are carried by steamers as compared with the old sailing vessels, and now there are no means of propagating mosquitos, so that when a case is introduced, even if there should happen to be a few stegomyias around, they are not in sufficient numbers to be above the yellow fever point, and the disease does not spread.

AN INTRADURAL TUMOR OF THE OPTIC NERVE REMOVED BY THE KRONLEIN METHOD.

By FRANK VAN FLEET, M.D.,

NEW YORK.

[SURGEON TO THE MANHATTAN EYE, EAR, AND THROAT HOSPITAL.

S. B., a girl aged fourteen years, small for her age but apparently healthy. Her family history is good in every particular, so far as can be ascertained.

The patient has always been a healthy girl, and has never had any serious sickness. She began menstruating when twelve years old, and has always had rather severe abdominal pains at these periods, but other than this there has never been anything unusual about them. She never had an injury of any kind that can be recalled; in fact, she has been unusually healthy and fortunate in this respect.

About two months before presenting herself for treatment, or about September, 1907, it was noticed that her left eye was slightly crossed and more prominent than the right. Then the vision in this eye began to fail until it became blind. No pain was associated with the condition, which possibly would not have been noticed but for the unusual prominence of the eye.

I saw the patient for the first time December 5, 1907, and noted the following: There was marked exophthalmus of the left eye. The mortality was not impaired and there did not appear to be any strabismus, which the patient declared was present at first. The pupil was moderately dilated and did not react to light. The cornea and media were clear, the optic nerve was dead white, but the retinal vessels seemed not to be diminished in size; if anything they seemed rather enlarged. The fundus of the eye, toward the macular region and also below the optic nerve, seemed to bulge forward, being seen at these points with plus six diopters, the rest of the fundus being seen with the aperture. The retina also had a peculiar striated appearance over these elevated parts.

The eye seemed to be pushed directly forward, and efforts to push it backward gave to the fingers the impression that there was some solid resisting substance back of it.

Pressure caused no pain. Vision was nil.

The right eye was normal in all respects except that vision was only about two-thirds, without apparent cause.

The patient was admitted to the Manhattan Eye, Ear, and Throat Hospital.

A radiograph by Dr. Edwin G. Zabriskie revealed no difference in the appearance of the two orbits, the picture being clear enough to reveal any difference which might have existed. Examination of the throat, nose, and accessory sinuses at different times, by Dr. Lewis A. Coffin and Dr. Thomas J. Harris, revealed nothing abnormal. The urine was of low specific gravity, 1010, no albumin, no casts, no sugar, no deposit, normal indican.

Blood examination: Erythrocytes, 4,532,000; leucocytes, 7,777.

FIG. 1.—Gross specimen, life size (slightly shrunken in hardening.)

Differential count: Large mononuclear lymphocytes, 12.12 per cent.; small mononuclear lymphocytes, 12.12 per cent.; polynuclear neuthrophiles, 75.75 per cent.

Physical examination by Dr. Herbert W. Wilcox revealed nothing abnormal. On admission to the hospital the patient's temperature was 99.5°, and fell in the morning to 98°; and kept rising and falling about one degree higher in the evening until the time of the operation.

On December 19, 1907, the patient was prepared for the Kronlein operation. An incision was made, starting in the temporal region of the left side, continuing toward the left eye to a point about 5 mm. from the outer canthus, and thence downward and outward to the center of the zygoma, forming a semicircular incision with its convexity toward the eye. This incision was extended downward through the tissue to the periosteum, and the tissues thus incised were dissected back to the extremities of the cutaneous incisions.

The periosteum thus exposed was incised over the outer orbital ridge, and beginning here this covering was separated from the bone forming the outer wall of the orbit down to the apex. A wedge-shaped piece of the exposed bone forming this wall, its base in the orbital ridge and tapering down toward the apex of the orbit, was cut out with a chisel. This piece of bone when its separation was completed, with its outer periosteal covering still in-

tact, was turned outward, thus forming a bone flap. The periosteum of the orbit, which had been separated from the bone, was then divided vertically, the two portions were drawn aside with sutures passed through them, and the cavity of the orbit was exposed.

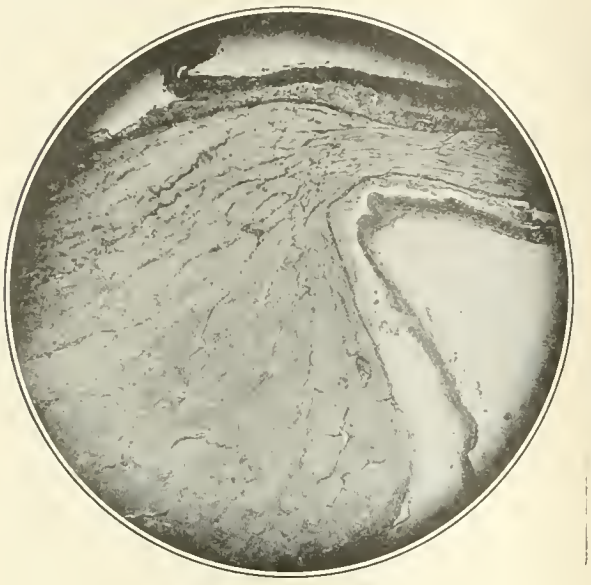

Fig. 2.—Section of growth at end nearest the globe. X10.

The finger passed into the orbital cavity through this opening came in contact with a mass occupying the entire space back of the globe, entirely surrounding the optic nerve, but not adherent to the bony walls or to the globe. With scissors the nerve was divided between the tumor and the eyeball and the mass drawn forward with a sharp tenaculum, the insertion of which into the mass allowed a quantity of fluid to escape, which materially diminished the size of the growth. The mass was then drawn forward and separated from the nerve at the optic foramen as close to the bone as possible, with curved scissors guided by the index finger, and the whole of the growth occupying the orbit was removed.

The orbit was then douched with sterile water, the divided periosteum stitched with catgut, the bone flap replaced, and the outer and inner periosteal edges united in the same way.

The skin and other tissue of the outer flap were replaced and the external wound was closed with silk sutures. A dressing of aseptic gauze and a bandage were applied. The anesthetic used was ether, and the time consumed in the operation was two hours.

After-Treatment.—Because of the expected reaction following so great a traumatism, the dressing was removed the following day. The exophthalmus was greater than before the operation, with edema and swelling of the eyelids of both eyes, the bridge of the nose, and the face generally. There was no complaint of pain or distress on the part of the patient, so the dressing was renewed and reapplied as before.

On December 21, the swelling having increased, iced applications were resorted to, the eye being protected with rubber tissue.

December 23, the swelling of the eyelids and face was greatly increased, the exophthalmus was marked, and the eyelid was unable to cover the eye. The eyeball was fixed and immovable. There was marked chemosis, and the lower part of the cornea was infiltrated. The cutaneous wound was smooth and clean. To protect the cornea the upper lid was drawn down and held in place with strips of zinc-oxide plaster and the iced cloths were continued.

On December 26 the swelling had gradually decreased, but a small ulcer had appeared on the cornea. The cutaneous wound had healed by first intention.

On December 31 the lower portion of the cutaneous wound was slightly swollen and red, and on January 1, 1908, this swelling was incised and a pus cavity emptied, which did not seem to communicate with the orbit. Following this the patient made an easy recovery.

After the operation there was ptosis with complete ophthalmoplegia of this eye, and inability to wrinkle the forehead on this side. The ptosis persisted for nearly four weeks, until January 28, when it had almost entirely disappeared. On this date there was slight movement of the eyeball in all directions excepting inward. There was slight haziness of the cornea, but no conjunctival irritation. The external wound entirely healed. Inability to wrinkle the forehead still continues. The pupil is about 4 mm. in size, and does not respond to light. The fundus can be seen with the ophthalmoscope, and the retinal vessels are present and apparently about normal in size. There can be seen some pigmentation of the fundus, which was not present before the operation.

Vision in the right eye 20/15.

Pathological report by Dr. Edgar S. Thomson.—Macroscopic examination: The specimen is composed of 8 mm. of optic nerve running into the lower part of a pear-shaped neoplasm 24 mm. long and 17 mm. in diameter. The optic nerve is eccentrically situated near the infero-temporal part of the growth. At the opposite end the growth is incomplete, and leads one to fear that intracranial extension may have already taken place. There is a large, cyst-like cavity in the substance of the growth from which the fluid has escaped at the end which lay at the apex of the orbit. Grossly, the substance of the growth is soft and friable.

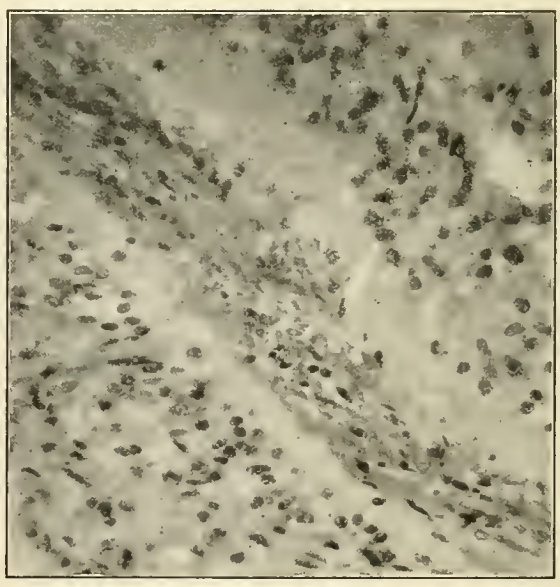

Fig. 3.—Section of growth near middle, showing arrangement of cells around a connective tissue band. X850.

The mass was sectioned somewhat obliquely, so as to divide the optic nerve and growth longitudinally.

Sections were stained by hematoxylin and eosin and by the Van Gieson method. Microscopically the growth is seen to spring from the nerve bundles, and to displace the pial processes more and

more the farther one gets from the globe. At the point of section near the eyeball and for a short distance back the nerve bundles show no change other than atrophy. Soon, however, they begin to enlarge and rapidly become ten times their width, displacing the pial processes irregularly and finally about the middle of the specimen become large, irregular, cellular masses.

There is considerable proliferation in the subdural space, which is usually observed in these cases. The growth itself is composed of irregularly shaped nuclei in large masses of neurogliar fibers. Blood-vessels are fairly numerous, and there is some evidence of endothelial proliferation, but this does not extend far from its origin, and it seems a fair presumption that most of the nuclei are neurogliar, especially as it is not known that proliferation of nerve fibers is possible. In the broken edges of the growth the neuroglia fibers can be plainly seen.

That the growth is locally malignant can hardly be doubted, but its further classification seems difficult. Unfortunately, it was not prepared for the specific neuroglia stain.

It seems best, under the circumstances, to call it an intradural tumor of the optic nerve, as has been done in cases of this character by Parsons, although the term "glioma" would probably not be inaccurate.

April 18, 1908. The patient was seen to-day. The movements of the eyelids are not impaired. The eyeball moves in all directions, but not freely inward, there being some divergence. The pupil is dilated and does not react. The retinal blood-vessels are mostly obliterated. There is extensive pigmentation of the retina. No pain or distress and no evidence of any return of the growth can be seen.

60 East Seventy-seventh Street.

INFLUENZA: ITS DIAGNOSIS FROM A MORPHOLOGICAL STANDPOINT IN STAINED SPECIMENS OF SPUTUM.*

By GEO. W. STILES, B.S., M.D.,

WASHINGTON, D. C.

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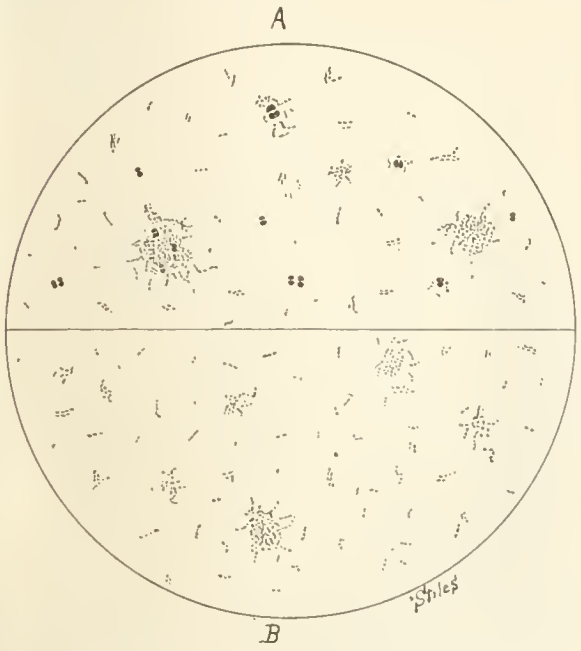
During recent years much literature has been contributed concerning the symptoms, etiology, and treatment of influenza, but too little attention has been given its differential diagnosis from other diseases of a similar character which, at times, offers a very difficult problem for solution. This paper is presented with the hope that it may be of service to the busy practitioner who has but little time or opportunity to consult a microscope and who ordinarily would not have all of the necessary equipment to make a complete bacteriological examination of every specimen of sputum coming under his observation.

No extensive technical methods or unusual modes of procedure were planned in considering this subject, but the idea was simply to make an examination of a number of stained specimens of sputum from suspected cases of influenza in order to determine the reliability of diagnosing the disease from the morphological characters alone of the organism found in the sputum.

The period of investigation extended from February, 1907, to June of the same year, during which time a mild epidemic was sweeping over the city of Washington, manifesting itself in many ways, and often exhibiting unusual symptoms and various degrees of infection.

Technique.—Nearly all the specimens were received in sterile, half-ounce, stoppered shell vials and examined within a few hours after collection. A number of slides were prepared from each sample and stained after various formulæ. A platinum loop was found useful in removing small flocculent particles to the slide, and by means of a square cover-glass in a pair of forceps, or the end of another slide, thin, evenly distributed films were made without any difficulty. After drying in the air and gently fixing by heat, the slides were usually stained with alkaline methylene blue, and dilute solution of carbolfuchsin (about one part to 8 or 10 of water); the latter seemed to be the most satisfactory in my hands. If overstained, the excess of coloring matter was readily removed by washing with dilute alcohol. Proper staining is the important feature of the method to be considered. If overstained the organism occurring in masses, as is often the case, either fails to show distinctly, or does not show at all, and in order to show a distinct, clear cut outline, the staining must be of the proper degree of intensity. Ordinarily the organism stains with difficulty, but this may be overcome by gently applying heat to dilute stains for a few seconds. Pfeiffer's bacterium is Gram negative, hence this stain was used in connection with other stains in making the differential diagnosis.



A. Sputum showing Pfeiffer's Bacillus and Diplococci. B. Pfeiffer's Bacillus from Glycerin-Agar after 48 hours at 37°c. (X1000.)

From a number of the cases exhibiting typical symptoms, and showing practically pure strains of the organism in the sputum, the bacterium was isolated in pure culture by plating on serum agar, or 5 per cent. glycerin agar, and its biological characters studied. This was done in order to make certain that the organism seen in the smear preparations corresponded to that known as the Pfeiffer bacillus, or according to the recent classification of nonmotile rods, Pfeiffer's bacterium, the causative agent of influenza.

Biological Characters of Bacterium Influenza.—Isolated in pure culture February, 1907, from bron-

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chial secretion of a patient exhibiting typical symptoms of the respiratory type of influenza.

Morphology.—A very small, moderately plump rod, varying in dimensions from .2-.35 x .5-1.6 microns. two, or more times smaller than the average tubercle bacillus; occurring singly, or in pairs, end to end, often forming clusters of a dozen or more; occasionally showing distinct irregular chain formation of three to six or more elements. No capsule or spores demonstrated.

Biology.—An aërobic, nonmotile rod; grew best at about 37° C., feebly or not at all at lower temperatures. Growth, however, on all ordinary culture media was very feeble at best.

Staining.—Stained somewhat with difficulty. Gram negative. In my experience a dilute solution of Ziehl-Neelson solution (carbol-fuchsin 1 part, water 8 to 10 parts) seemed to give the most satisfactory results in bringing out the detail structure of the organisms; however, well-stained preparations were made with alkaline methylene blue and in some instances Wright's blood stain gave very satisfactory results in demonstrating the organism in leucocytes. Heat, gently applied, hastened the staining process. When overstained with carbol-fuchsin, washing with dilute alcohol removed the excess of coloring matter, often giving satisfactory results.

Behavior upon Culture Media.—Agar.—Serum agar, or 5 per cent. glycerin agar, offered a favorable medium. Growth was at first very slow; minute, glistening, almost transparent colonies were observed after twenty-four to thirty-six hours' incubation at 37.5° C. They generally remained distinctly separated, one from the other, and never attained very large dimensions. Older colonies became yellowish brown, while younger ones were grayish white in color. Initial cultures were best made upon media containing serum or hemoglobin compounds, however, subsequent transplantations were easily developed upon 5 per cent. glycerin agar. Upon plain agar even older generations grew poorly or not at all.

Peptonized Beef Broth.—In bouillon a faint turbidity slowly developed, gradually becoming clear, leaving a finely granular deposit at the bottom of the tube. No membrane or ring formation was observed. Cultures were kept alive in bouillon at ice-box temperature for over a month. In sputum kept under the same conditions the organism remained innocuous after three weeks.

Potato.—No growth occurred on plain or glycerinized potato.

Alkaline Litmus Milk.—At first unchanged, later the alkalinity slightly increased.

Dunham's Rosolic Acid.—Color increased to cherry red.

Sugar Media.—No gas production. Slight aërobic growth.

Gelatin, 10 per cent.—Fine granular, slowly developing colonies appeared after some days at about 20° C. No liquefaction of the medium occurred.

Indol.—Negative.

Pathogenesis.—When 0.5 c.c. of a forty-eight-hour bouillon culture was inoculated subcutaneously or intraperitoneally into guinea pigs and rabbits, no perceptible changes were observed, aside from slight malaise and drowsiness during the first or second days. Death did not occur within one month after inoculation. Larger doses were not tested.

The appended table of 100 cases deals with the case number, month of collecting the sample, diagnosis, presence of tubercle bacilli, streptococci, diplococci resembling pneumococci, miscellaneous bacteria, probable day of the disease, character of the sputum, and brief remarks on the symptomatology. The plus signs indicate positive diagnosis and the minus signs a negative diagnosis. Double plus signs indicate rich infection.

Symptomatology.—The following discussion of case histories is necessarily somewhat brief, since many of the patients remained under observation of the attending physician for a very limited period of time, and full information from each case was impracticable to obtain. However, in studying the notes thus presented, one will readily recognize resemblances of various commonly known types of the disease including the respiratory, gastrointestinal, nervous, rheumatic, febrile, and their many allied and varying manifestations. Aside from calling attention to a few histories representing the ordinary class of patients, there were a few others studied, which resembled what might be called the bronchial or tuberculous type.

Case XIV.—Patient 29 years old, male, general health good. Illness began suddenly February 17, 1907, with soreness and redness of pharynx, sneezing, general malaise, slight constipation, and anorexia. On February 18 had slight chilly sensation all day increasing in intensity at night. Muscular soreness general. Head slightly sore but no headache; a general tired out feeling. Occasionally cough. Temperature February 18, P. M., 102.4°; February 19, 100.2°. Feeling better on February 19, but still tired, sore, and exhausted. Muscular soreness somewhat improved.

Case XVI.—Mrs. W., aged about 30 years. Symptoms previously diagnosed as chronic tuberculosis. When first observed patient was found prostrate in bed where she had lain for several weeks. Treatment from former physician consisted largely of nourishing food and codliver oil containing creosote. Physical examination of the chest revealed symptoms not unlike those of advanced stages of tuberculosis. She expectorated large quantities of a greenish-yellow, mucopurulent sputum. Previous history negative for tuberculosis. Present attack began with "grippe" some months previous and she had been confined to bed since and seemed to grow worse under treatment. Repeated examination of the sputum for tubercle bacilli always gave negative results while nearly a pure species of Pfeiffer's bacterium was constantly present. These organisms were not only studied morphologically from stained specimens, but they were also isolated and examined in pure culture. Under appropriate treatment for influenza the cough subsided, the patient gained sufficient strength to sit up in bed, and within three weeks was able to be out on the street. Reports two or three months later showed further improvement, the woman at this time being apparently quite well.

Case XXVIII.—Mrs. R., age about 45. Acute symptoms began suddenly as a complication of chronic articular rheumatism. Very severe occipital headache, requiring opiates to relieve the extreme suffering. Marked pains in the limbs and back, nausea and vomiting very persistent during the whole of the first day. Moderate degree of fever with greatly accelerated pulse. Prostration and weakness extremely marked. Practically no cough with very scant bronchial secretion. Influenza symptoms responded quickly to proper therapeutic measures, with recovery after four days.

Case XLIII.—Thin, watery, frothy sputum. Second day of disease. Symptoms were coryza, aching pains general over the body, prostration, bronchitis. Many Pfeiffer's bacteria and diplococci.

Case No.	Month	Diagnosis	P. Bac.	T. Bac.	Streptococci	Diplococci	Misc. Bact.	Day of Disease	Character of of Sputum	Symptoms, Remarks
1	Feb.	+	+	−	+	+	+	?	Thin, watery, grayish white....	Diagnosed by physician as influenza.
2	"	+	+ +	−	−	−	+	?	Thick, tenacious, mucopurulent..	Diagnosed by physician as influenza. Nearly pure culture P. Bac.
3	"	+	+	−	+	−	+	4	Watery, grayish, suspended par- particles.	Diagnosed by physician as influenza. Nearly pure culture P. Bac.
4	"	+	+ +	−	+	−	+	4	Greenish yellow, thin, mucopurulent.	Typical type respiratory influenza.
5	"	+	+	−	+ +	+	+ +	7	Scant, grayish, thick secretion...	Gastrointestinal type.
6	"	+	+ +	−	+	−	+	5–6	Greenish yellow, mucopurulent. .	Diagnosed as influenza.
7	"	+	+ +	−	−	−		2–3	Thin, watery, grayish.....	Diagnosed as influenza.
8	"	+	+ +	−	+	−	+	4–6	Thick, mucopurulent.....	Typical respiratory type.
9	"	−	−	−	+	−	+	5–7	Thick, tenacious, ropy, mucopurulent.	Diagnosed as influenza by physician.
10	"	+	+ +	−	−	−	−	4–6	Thick, ropy, grayish, mucopurulent.	Diagnosed as influenza by physician.
11	"	+	+	−	+ +	+	+	5–7	Yellow, mucopurulent, thick.....	Influenzaandcapillary pneumonia.
12	"	+	+ +	−	−	−	−	3–5	Greenish yellow, mucopurulent...	Diagnosed as influenza.
13	"	+	+ +	−	−	+	−	2	Greenish yellow, mucopurulent...	Typical case respiratory influenza.
14	"	+	+ +	−	−	+	+	3–4	Greenish yellow, mucopurulent...	Typical case respiratory influenza.
15	"	+	+ +	−	−	+	+	2–3	Greenish gray, watery, frothy.....	Typical case resipratory influenza.
16	"	+	+ +	−	−	−	+	?	Copious greenish yellow, mucopurulent.	See history appended.
17	"	?	?	−	−	+	+ +	2	Scant secretion from lungs.....	Probably gastrointestinal type.
18	"	+	+ +	−	−	−	+	2–3	Thin, gray, watery.....	Diagnosed as influenza.
19	"	+	+	−	+	+	+	6	Blood-streaked sputum.....	Diagnosed as influenza.
20	"	+	+	−	−	+	+ +	Conv.	Scant, ropy sputum.....	Convalescent from influenza.
21	Mar.	+	+	−	+	+ +	+	2	Very abundant, greenish yellow..	Diagnosed at G W. U. H. as influenza.
22	"	+	+ +	−	−	−	−	3	Thin, watery, mucopurulent.....	Cultures positive.
23	"	+	+ +	−	−	+ +	+	3–4	Greenish yellow, thick mucopurulent.	Diagnosed as influenza.
24	"	+	+ +	−		−	−	3–4	Greenish yellow, thick mucopurulent.	Diagnosed as influenza.
25	"	+	+	−	−	+	+	2	Greenish, watery, mucopurulent...	Mild attack influenza.
26	"	+	+	−	−	−	+	2	Greenish, watery, mucopurulent .	Influenza.
27	"	+	+ +	−	−	+	+	2	Greenish, watery, mucopurulent .	Influenza.
28	"	+	+	−	+	−	−	3	Scant secretion, ropy.	Gastrointestinal type. Nervous.
29	"	+	+ +	−	+ +	+ +	−	7	Greenish gray, frothy, watery . .	Influenza—diagnosis.
30	"	+	+ +	−	−	−	−	7	Greenish yellow, tenacious, mucopurulent.	Temperature 104-105° F., for 3 days Influenza.
31	"	+	+	−	+	+	+ +	8	Greenish, homogeneous, mucopurulent.	Abscess in each ear third day. Influenza.
32	"	+	+	−	−	−	−	2–3	Thin, watery, grayish	Diagnosed as influenza.
33	"	+	+	−		−		2–4	Thin, watery, yellowish.	Diagnosed as influenza.
34	"	+	+ +	−	−	+	+	3	Thin, watery, greenish yellow...	Nausea, vomiting, headache, pains, prostration.
35	"	+	+ +	−	+	+ +	−	3	Thin, watery, greenish yellow .	Enlarged cervical glands, aches and pains, frontal headache.
36	"	+	+ +	−	−	+	+	2	Thin, watery, greenish yellow.....	Mild influenza—sore threat.
37	"	+	+ +		+	−	+	2	Thin, watery, greenish yellow.....	Mild influenza, sore throat, wry neck.
38	"	+	+ +	−	+ +	+ +	−	2	Thin, watery, greenish yellow.....	Mild influenza, very sore throat, prostration.
39	"	+	+ +	−	−	+	+	3–4	Thick, greenish yellow, frothy...	Symptoms of influenza.
40	"	+	+ +	−		+ +	−	2	Thin, watery, frothy, yellowish....	Coryza, aching pains, prostration, fever, bronchitis.
41	"	+	+	−	+	−	+	3–4	Thick, tenacious, mucopurulent .	Diagnosed influenza.
42	"	+	+ +	−	−	+ +	−	2–3	Thin, watery, yellowish.....	Characteristic aching Grippe symptoms.
43	"	+	+	−	−	−	−	3	Thin, watery, yellowish.....	Mild symptoms influenza.
44	"	+	+	−	−	−	−	3	Thin, watery, yellowish.....	Sore throat, influenza.
45	"	+	+	−	−	−	−	7–9	Thin, watery, yellowish.....	Convalescent from influenza.
46	"	+	+ +	−	−	−	−	2–3	Thin, watery, mucopurulent.....	Diagnosed influenza.
47	"	+	+	−	−	−	−	2	Grayish, watery.....	Diagnosed influenza.
48	"	+	+ +	−	−	−	−	2–3	Thin, watery, yellowish.....	Diagnosed influenza.
49	"	+	+ +	−	−	−	+	2–4	Thin, watery, yellowish.....	Diagnosed influenza.
50	"	?	?	−	−	−	+	3–5	Thick, greenish yellow.....	Diagnosed influenza.
51	"	+	+ +	−	−	−	+	2	Watery, mucopurulent.....	Mild grippe symptoms.
52	"	+	+ +	−	−			3	Watery, mucopurulent.	Constipated, headache, backache, prostration.
53	"	+	+ +	−	−		−	2	Watery, mucopurulent..	Headache, listlessness, general depression.
54	"	+	+ +	−	−	+	+	2–4	Watery, mucopurulent.....	Mild influenza symptoms.
55	"	+	+ +	−	−	+	+ +	4	Thick, mucopurulent.....	Mild attack influenza.
56	"	+	+ +	−	−	+ +	−	3–4	Blood-streaked mucopurulent.....	Chilliness, painful wry neck, fever, bronchitis, pains, cough, sneezing.
57	"	+	+	+	−	−	−	?	Thick, mucopurulent.....	Chronic tuberculosis, acute influenza.
58	"	−	−	−	−	−	+	3–4	Yellowish, mucopurulent.....	Diagnosed as influenza.
59	"	+	+	−	−	−	−	2–3	Thin, watery, grayish flocculi present.	Diagnosed as influenza.
60	"	+	+	−	−	−	−	3–5	Thick, grayish, mucopurulent....	Diagnosed as influenza.
61	"	+	+	−	−	+	−	5–7	Greenish yellow, thick mucopurulent.	Grippe symptoms, complicated with pneumonia.
62	"	−	−	−	−	−	+	2–3	Thin, watery, frothy.....	Diagnosed mild influenza.
63	"	−	−	−	−	−	+	3–5	Thick, grayish yellow, mucopurulent,	Diagnosed mild influenza.
64	"	?	?	−	−	+	+	2–3	Thin, watery, yellowish gray.....	Diagnosed mild influenza.
65	"	+	+	−	−	−	−	2–4	Thin, watery, yellowish gray.....	Diagnosed mild influenza.
66	"	?	?	−	+	−	+	2–3	Thin, watery, greenish yellow.....	Very raw sore throat; mild influenza.
67	"	+	+	−	+ +	−	−	2–4	Thin, watery, greenish yellow.....	Diagnosed mild grippe.
68	"	+	+	−	−	+	+	2–3	Thin, watery, greenish yellow.....	Symptoms mild influenza.
69	"	+	+	−	−	+	−	2–4	Thin, watery, greenish yellow.....	Diagnosed influenza by attending physician.
70	"	?	?	−	−	−	+ +	2–5	Thin, watery, greenish yellow.....	Influenza symptoms.
71	"	+	+	−	−	−	−	2–3	Thin, watery, greenish yellow.....	Grippe symptoms, sore throat.
72	"	+	+	−	−	−	−	3–5	Thick, greenish, mucopurulent....	Prostration, bronchitis, aches and pains, headache.
73	"	+	+	−	−	−	−	2–3	Thick, greenish yellow.....	Symptoms of influenza.
74	"	?	?	−	−	+	+ +	5–7	Thin, watery, grayish	Convalescent from influenza.
75	April	+	+	−	−	−	−	?	Grayish yellow, copious, watery...	Cough 4 mo. standing, dating from attack influenza.

Case No.	Month	Diagnosis	P. Bac.	T. Bac.	Streptococci	Diplococci	Misc. Bact.	Day of Disease	Character of of Sputum	Symptoms, Remarks
76	"	+	+	−	−	−	−	2–4	Greenish yellow, mucopurulent.	Grippe symptoms.
77	"	−	−	−	−		+	?	Grayish watery.	Diagnosed by physician as influenza.
78	"	+	+	−		+	+	?	Thick, greenish yellow	Grippe 5 mo. before, suspected tuberculosis.
79	"	?	?	+		−	+	?	Thin, watery, grayish	Grippe symptoms, suspected tuberculosis.
80	"	?	?	−			+	3–5	Thin, watery, grayish	Diagnosed influenza.
81	"	−	−	−			+	5–7	Thick, mucopurulent	Diagnosed influenza.
82	"	−	−	−			+	?	Thick, mucopurulent	Diagnosed influenza.
83	"	+	+	−			+	3–5	Thin, watery	Diagnosed influenza.
84	"	+	+	−		−	+	2–4	Thin, watery, yellowish.	Influenza symptoms.
85	"	−	−	−			?	?	Thin, watery, yellowish.	Diagnosed influenza.
86	"	−	−	−			+	?	Grayish, mucopurulent	Diagnosed influenza.
87	"	?	?	+		−	+	?	Grayish, mucopurulent	Suspected tuberculosis. Grippe symptoms.
88	"	+	+	−	−		−	3–4	Greenish yellow, mucopurulent.	Diagnosed influenza.
89	"	+	+		−	+	−	2–4	Greenish yellow, mucopurulent	Diagnosed influenza.
90	"	+	+			+	−	?	Thick, tenacious, ropy, greenish yellow.	Symptoms chronic influenza or bronchitis.
91	"	+	+				+	?	Thin, copious, watery, yellowish.	Suspected tuberculosis, cough several months.
92	"	+	+		−	−	+	3–5	Thin, watery, greenish yellow.	Suspected diphtheria cultures negative, symptoms grippe.
93	"	−	−	−	−	−	+	3–4	Thick, catarrhal exudate	Sore throat, headache, bad cold, deranged stomach.
94	"	−	−	−	−		+	3–5	Thick, catarrhal exudate	Coryza, general depression; infant.
95	"	+	+	−			+	2–4	Thin, watery frothy yellowish.	Diagnosed influenza by physician.
96	"	+	+	−	−	−	+	2	Thin, watery frothy yellowish.	Mild grippe symptoms, pains and aches.
97	May	+	+			+	+	2–3	Frothy, mucopurulent.	Diagnosed influenza.
98	"	+	++	−	+	− +	+	2–4	Greenish yellow, mucopurulent	Diagnosed influenza.
99	"	+	++	−	−	− +	+	?	Greenish yellow, copious	Symptoms chronic influenza or tuberculosis.
100	June	+	++	−	−	−	+	5–7	Scant, thick, grayish.	Typical respiratory type influenza.

SUMMARY

80 cases show positive results for presence of influenza bacteria.
11 " " negative " " " " " "
9 " " doubtful " " " " " "
3 " " T. B. present.
20 " " streptococci present.
36 " " diplococci present.
36 " " practically pure species influenza organisms.
24 " " " all P. B. and diplococci.
10 " " streptococci and diplococci in same smear.

Case LII.—Headache, sleepy feeling, sneezing, eyes painful to light, backache, constipation. Sputum examination showed practically a pure culture of Pfeiffer's bacterium.

Case LVI.—Began with chilly sensations, general drowsiness, depression, anorexia, sneezing, cough, aches and pains in arms and back. High fever accompanied by severe prostration. Rusty sputum expectorated for a day or two. Recovery uneventful.

Case LIX.—Began with torticolis, chilly sensations, sneezing, cough, aching arms and back. High fever, great prostration. Mucopurulent, rusty, blood-streaked sputum. Many diplococci and Pfeiffer's bacterium.

Case XCII.—Diagnosed at first as follicular tonsillitis by attending physician. Symptoms began with chilly sensations, general malaise, nausea, severe pains in occipital region and over one orbit. Temperature 102.4°. Stomach greatly deranged, prostration marked, throat reddened, with adherent, grayish white membrane on right side, not confined to the tonsils. First culture appeared suspicious for diphtheria; the second one, however, proved negative. Freshly stained smear preparations showed large numbers of organisms classed as *Bacterium influenzæ*. Small doses of phenacetin and acetanilid relieved the headache. Local applications of hydrogen peroxide and silver nitrate controlled the pharyngeal inflammation and membranous development. Recovery followed within two or three days.

Case XCIX.—A middle-aged plethoric woman, who was greatly annoyed for weeks by a distressing cough which seemed to be localized in one small area of the lung. Ordinary cough remedies had no effect, but under treatment for influenza her symptoms readily subsided. The influenza organism was demonstrated plentifully in the sputum. Tubercle bacilli negative.

In looking over the summary of the table it will be observed that 3 per cent. of the cases showed the presence of the tubercle bacillus, while at least four other cases, Nos. 75, 78, 91, and 99, gave clinical histories not unlike that of tuberculosis, but the specific bacillus was not to be found in the sputum; however, in each case large numbers of influenza organisms were present. This, of course, does not necessarily prove that the patient did not harbor the tubercle bacillus, yet on the other hand it tends to show that at least a few of the cases diagnosed as tuberculosis without careful and repeated sputum examinations, may really be due to the invasion of the influenza bacterium.

Since making the above study a number of other cases resembling influenza have come under my observation and information of undoubted value from the microscopical examination of the sputum has contributed much toward making a correct diagnosis, and in many instances indications of complications were observed before the advent of recognizable symptoms. For instance, a sputum containing large numbers of the influenza bacillus and pneumococci in the beginning of the disease almost invariably showed pneumonia or bronchitic symptoms soon after, generally differing in type from those cases showing only a pure species of influenza organisms. The presence of streptococci or other organisms in the sputum showing a mixed infection gives the physician a valuable clue in planning his course for future treatment.

Summary.—1. In view of the results obtained from this series of cases, I cannot too strongly emphasize the necessity of making routine microscopical examinations of sputum from cases manifesting general respiratory symptoms of disease. No matter what the previous diagnosis may have been from the symptomatology alone, further light on the condition of the patient may be had from a microscopical study of the sputum.

2. Valuable information may be obtained from a brief study of well-stained specimens of sputum from suspected or complicated cases of influenza.

3. A few cases resembling tuberculosis may be due to infection of influenza bacilli alone or to a mixed infection of the two organisms.

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SEVERAL CASES ILLUSTRATING LIVER SYMPTOMS IN CARDIAC DISEASE.*

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THE three cardinal symptoms of heart disease are dyspnea, enlargement and tenderness of the liver, and dropsy. This statement may come as a surprise to those who have not been accustomed to make a distinction between the symptoms of heart

FIG. 1.—Case I. Enlargement and Tenderness of the Liver as a Result of Heart Disease. Sudden Death.

failure proper and the symptoms of more general conditions such as shock, arteriosclerosis, Bright's disease, and so on, in which the heart becomes secondarily involved. Thus there may exist great irregularities of the heart, but if there is no dyspnea,

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no enlargement and tenderness of the liver, and no dropsy, the cardinal symptoms of heart disease are lacking.

Enlargement and tenderness of the liver is an important indication of the general disturbance of the circulation that results from failure of the heart.

Fig. 2.—Case III. Enlargement and Tenderness of the Liver in a Case of Mitral Stenosis, the Peripheral Paralysis Due to the Original Infection that Caused the Heart Lesion.

The venous stagnation results in swelling and tenderness of the liver and the liver affords in this way an important indication of the progress of cardiac disease. The tenderness is often greater in acute cardiac failure than in old cases. An enlargement of the liver during this condition may be considerable and this disturbance of the liver leads in some cases to a slight degree of jaundice. So valuable a symptom is tenderness and enlargement of the liver that, in picking out the heart cases in hasty hospital rounds when first on duty with upwards to a hundred patients to review in a short time, I have made it a practice to palpate the liver before using the stethoscope. In the absence of enlargement and tenderness of the liver, an urgent uncomplicated heart case has hardly ever been found, if the condition has existed several days.

Fig. 3.—Case V. Enlargement and Tenderness of the Liver Due to Broken Compensation. During the Attack.

A few typical cases that I have seen within the last six months are the following:

Case I.—Woman, fifty years old, whom I saw first on January 3, 1908. She had a cardiac history of long standing, but it had become worse lately. Physical examination revealed a very striking double mitral murmur. Her liver was considerably enlarged and tender, though her dropsy was not very great and her dyspnea not urgent. The evidence of venous stasis in the liver was so great that I considered the prognosis very bad. Her symptoms did not increase, but they did not improve, and she died suddenly six days later, on January 9, without any warning.

Case II.—A woman, forty-five years old, had several attacks of rheumatism with cardiac involvement and had suffered previously from great edema of the legs which had left her with a troublesome pressure neuritis that was very painful. She had a systolic murmur over the mitral area and there was a moderate enlargement and tenderness of the liver.

Case III.—A woman, thirty-six years old. Early in life had a very profound infection by diphtheria that had resulted in endocarditis and general neuritis. She gave a history of many years of cardiac suffering and showed the deformities of the extremities due to destruction of peripheral nerves. She had mitral stenosis of a very high degree of development and for the past six months had been going down hill so that on numerous occasions it had been necessary to remove the fluid from her chest to keep her from suffocating. When I first saw her her liver was large and exquisitely tender. By careful medication and hygienic measures the liver was reduced in size and was less painful for three months and the necessity for mechanical removal of fluid was obviated, thus showing the coincidence of the two symptoms. She later developed cerebral embolism and finally died from this cause.

Fig. 4.—Case V. Enlargement and Tenderness of the Liver Due to Broken Compensation. After Recovery.

Case IV.—A woman, seventy-four years old, had had high arterial tension for a number of years resulting finally in cardiac exhaustion. She had marked tenderness of the liver and great irritability of the stomach so that rectal feeding was necessary. On a suitable regimen and carefully selected medication the enlargement and tenderness of the liver disappeared and the functions of the stomach were restored. She has remained well, but under supervision, for six months.

Case V.—A man, forty-three years old, having had rheumatic endocarditis, had developed broken compensation, showed mitral stenosis and insufficiency, aortic stenosis and insufficiency, and tricuspid regurgitation. His liver was enormously congested and tender, and he was slightly jaundiced. He responded to treatment and made a good recovery. The illustrations herewith are from photographs showing him during and after his attack.

Case VI.—A patient, forty years old, with mit-

ral stenosis and insufficiency, showed tenderness of the liver.

Case VII.—A patient of seventy-one years, with fatty degeneration of the heart, showed tenderness of the liver.

Case VIII.—A woman, twenty-nine years old, with aortic stenosis and regurgitation and mitral insufficiency, suffering from profound cardiac cachexia, had enlargement and tenderness of the liver. Her condition did not change much under treatment.

The critical examination of cardiac cases shows that in true cardiac weakness liver symptoms are almost constant, and the mistake must not be made of diagnosing primary liver disease. I have not discussed the gastric symptoms which often go with the condition and which have often been mistaken for stomach disease.

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ADVERSE SUGGESTION.

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Psychotherapy of late years has come gradually more and more to the front, until to-day it is a subject very widely talked of, but chiefly by the non-medical public. Physicians in the past, although apparently in no way doubting the validity of psychological laws, have, as a profession, made very little conscious and, therefore, intelligent use of the therapeutic opportunities they offer. There were notable and brilliant exceptions to this rule of negligence. Such pioneers as Braid of Manchester, Liébeault of Nancy, Azam of Bordeaux, and later Bernheim of Nancy and Charcot of Paris, in spite of the bitterest professional opposition, amounting at times to fanaticism, finally separated hypnotism from mesmerism, animal magnetism, etc., and laid the foundations of psychotherapy. But even now, psychology remains in the minds of the great majority of physicians as an interesting theoretical subject, and suggestion as an agent fit only for the hands of the specialist and of the hypnotist.

On the other hand, charlatanism has an important message for the medical profession. It has long realized the practical side of psychology, has applied its laws, and is even now able to point with pride to clinical results where the medical profession has failed. Mental healing, Christian Science, and other similar healing cults and systems, have suggestibility to thank for the number of cures that stand to their credit. They have accomplished in these cases, by an illegitimate use of suggestion, what the medical profession should have accomplished by its legitimate use. They have consciously and cleverly used (as well as abused) a therapeutic agent of which, as a matter of fact, successful physicians by their cheerful manner and encouraging words have made unconscious, unintelligent, haphazard use, and have likewise unconsciously and inadvertently misused for ages. The natural explanation of the tremendous popularity of the well nigh numberless "ists," "isms" and "paths" of the present day, is that patients find in them what they need but cannot get from orthodox sources. The physician who ignores the psychic element of disease is just as narrow as the Christian scientist who denies its physical existence.

That conscious, intelligent use of suggestion should be within the grasp of every physician, that it is his imperative duty to avail himself of its manifold benefits, and that above all he should avoid its unintelligent, unconscious misuse are facts which cannot be too strongly emphasized.

It needs hardly a moment's serious consideration to establish the gross inconsistency of treating human beings as though their minds and bodies were independent. The psychological law laid down by Professor William James years ago that "no mental modification ever occurs which is not accompanied or followed by a bodily change" is familiar to all. We all know that it is the mind, not the body, that suffers; that the patient is a suffering consciousness, not an insensate biochemical laboratory. That bodily ills cause mental disturbances and that mental disturbances cause bodily ills, are facts too well known to need demonstration. The concept of psychophysiological unity is the basis of enlightened monistic philosophy and it is the *only* concept which agrees with and is supported by the laws of nature. Indeed, I believe it would be hard to find an educated man, especially among physicians, nowadays, who would deny the validity of this basic truth. Yet in practice not a few physicians, in face of these facts, frequently treat the body as though it were independent of the mind, and the suffering patient as though he were a deranged mechanism or an ailing ameba.

A working knowledge of psychology is at least as important to the practical physician as is familiarity with the physiological action of drugs, for suggestibility is a universal characteristic, and the physician need not be a hypnotist nor the patient an hysteric for suggestion to be used to advantage. It is, however, essential that the physician should be conversant with the fundamental characteristics of the subconscious self which Sidis so well describes as the "highway of suggestion." Appreciation of its surpassing sensitiveness to suggestions, of its astonishing credulousness, of its tenacious memory, and above all, of its close association with all the organic functions, is one of the essentials of an efficient and intelligent use of suggestion. It is clear that to gain an appreciation of this sensitive and puissant subconsciousness and a knowledge of the ways and means of influencing it, one must acquire the fundamental principles of psychology.

In order to avoid confusion as to the meaning of "suggestion" and "suggestibility" I here quote Prof. Aug. Forel's definitions of these terms, which seem to me particularly clear and comprehensive and in accordance with which I use the words. "By suggestion one means the production of a dynamic change in the nervous system of a person, or of such functions which depend on his nervous system, by another person by means of calling forth representations (be they conceived or unconceived) that such a change is taking place, has taken place, or will take place."...."Suggestibility is the individual susceptibility toward suggestion."

Every-day life offers ample proof of how suggestible we all are. When the small boy sucks a lemon before the brass band and thereby causes salivation and puts the band out of business, the players offer unconscious tribute to suggestion. One has but to talk of fleas to cause many people to itch uncomfortably. Many individuals can be made to blush furiously, simply by being told that they are going to blush. The power of suggestion is again shown in the often remarkably complete therapeutic effect that a hypodermic injection of sterile water has, when unknown to the patient it is substituted for morphine. These familiar examples

of the rôle that suggestion plays in every-day life could be multiplied almost indefinitely were further proof necessary of the universal presence of suggestibility.

Let any physician meet one of his acquaintance who is in robust health; let him remark with sympathy upon his pallor, his tired and ill appearance, and then note the depressing effect; an effect which may influence every thought and action throughout the day. Let the same physician meet one who is really ailing; let him this time dwell with enthusiasm on the latter's youthful appearance, good color, and healthy look, and then note again the change in expression, the smile of satisfaction, the different step. Although these illustrations may seem trivial at the first glance, they, nevertheless, contain an indication of a power which may work strongly for good or strongly for evil, according to circumstances. Does the physician, in the instances just described, really make one patient ill and the other well, by mere words and manner? By no means. He does, however, in the first instance, produce a mild mental disorder accompanied by depression, during which all the bodily functions may be disturbed, and the individual even be rendered more susceptible to the inroad of disease. In the second instance he arouses in the patient feelings of self-confidence, encouragement, and hope, his bodily functions improve and he is thus actually strengthened in his fight against disease. Organic diseases cannot be cured by suggestion, but they can be helped by it; and the great number of diseases due to functional disturbances without organic change are usually capable of cure, largely through suggestion. In so far as truth will permit, patients should be filled with hope and encouragement, and they will then sleep better, digest better, think better, and get well more quickly. The truth and suggestion are not at variance; but the truth dressed in black may be an adverse suggestion of destructive force, whereas the same truth presented in more attractive guise may carry with it the very hope and cheer of which the patient stands most in need.

That suggestion is frequently employed quite unconsciously by most physicians in every-day medical life, according to the cheerfulness and hopefulness of their dispositions, is clear without much thought. That it would be employed to far greater advantage, and that important opportunities for its beneficial use would not so often be lost were every physician to equip himself for its intelligent use, is hardly in need of demonstration. But even if one does not realize the responsibility of making the most of a given therapeutic agent, surely there is little doubt that nobody can escape the responsibility of at least avoiding its misuse. As it is clearly impossible to do this without some knowledge of the subject, the study of psychology becomes a duty which no medical man can honestly overlook. I do not advocate that every physician should try to become an expert psychotherapist,—that would be manifestly impossible,—but it is my contention that he should have sufficient knowledge of psychology to take advantage of the manifold opportunities, presented in every-day experience, of using the suggestibility of his patients to their advantage, and that above all, he should be able to avoid counteracting his attempts at treatment (at times of actually neutralizing them), by inadvertent adverse suggestion.

To illustrate my meaning let me quote a few examples of what may be called adverse suggestion. They will, I think, prove not altogether unfamiliar types. In the first place, there is the gloomy individual who, by his supernaturally serious manner as well as by his every word, transmits his pessimism to every one he comes in contact with, but especially to those he intends to heal. The way he makes a physical examination, the way he looks at the tongue, the way he takes the pulse; each action adds its increment of adverse suggestion. The patient who before his visit was perhaps cheerful and confident, is now thrown into a state of cheerless apprehension, or at best is deeply impressed with the seriousness of all illness, and especially of his own malady. It is reasonable to suppose that this type of behavior is due to ignorance of the power of suggestion, rather than to disregard of the patient's weltare, and that a little knowledge of psychology would at once lead to reform.

The mechanical reiteration of some supposedly encouraging phrase such as "very good," or "first rate," used with the accompaniment of knitted brows and dubiously shaking head, is unconvincing and useless by way of suggestion; indeed, often most irritating in its irrelevancy. Manner and expression, as well as words, must be suited to the need of each individual patient, and to do this an elementary knowledge of psychology is as necessary as common sense.

The restless, evidently hurried, and patently overbusy physician who is always late for his appointments, who never sits down quietly by the patient's bed, who is manifestly worried over the flight of time, inevitably impresses the patient, perhaps with his own importance, but certainly with the patient's unimportance,—a suggestion clearly not calculated to fill the patient with the proper sense of comfort and reliance in his physician. There are better ways of economizing time than hurrying! One of our leading clinicians sharply criticised me on one occasion for having seemed hurried during a consultation. He said: "Don't ever make a visit on a patient without drawing up a chair and sitting down; standing and walking about the room are indicative of hurry and lack of interest on your part. That has a bad effect on the patient." Thus he gave me an important lesson in psychotherapy.

Fortunately the physician who thinks aloud while making his diagnosis is not very common, but he affords such an excellent example of the harm that adverse suggestion may do, that I venture to quote a case which has recently come to my notice. A lady who had what she thought was indigestion, sent for her physician. During his examination and the process of making his diagnosis he thought of and gave mumbling voice to, so many disconcerting possibilities and probabilities that when he finally "pronounced the case" to be simple indigestion it had little effect on the patient's conviction (for which he was entirely responsible), that something very serious was the matter. The patient in her distress demanded another opinion, and was finally reassured by another physician, but with the greatest difficulty. Yet such is the remarkable working of the human mind, that this patient, far from criticising her physician, commended him highly for his honesty in saying just what he thought, apparently entirely unconscious of the harm his "honesty" had done her; her confidence still unshaken. What a powerful therapeutic ally this same confidence might have been, had it been used, not abused!

Another way in which adverse suggestions are often inadvertently given, and I am convinced that it is the direct result of over-development of the scientific spirit of investigation, is that of putting the

patient through a maze of mechanical and laboratory procedures as a matter of routine. Organs that he has never before been conscious of possessing are ruthlessly and often quite uselessly dragged before the stern tribunal of the doctor's scientific spirit. The physician is so interested in his truly interesting tests, so anxious to get at the exact truth, that he forgets his patient as an individual. He does not realize that these tests, all of which are strange to the patient, and some of which are at least very disagreeable to him, are redolent of suggestion. They inevitably bring before the patient's mind, to a greater or less degree, the vast pathological possibilities inherent in him. Unchecked by any suggestion to the contrary, his imagination naturally does its full duty, and the last condition of that patient is worse than the first. There is no question as to the value of accurate diagnosis, and every help, whether bacteriological, chemical, or mechanical, should be called to our aid when necessary; but to put every patient through an elaborate system of clinical tests as a matter of routine cannot be too strongly deprecated. It is my conviction that no patient should be put through a single procedure, scientific or otherwise, that is not necessary to the clear understanding of his case, and that then the necessary tests should be made with every care to avoid unfavorable impressions—adverse suggestions. Indeed, in many cases I feel sure that the necessary tests may not only be shorn of their adverse suggestions, but may even be endowed with suggestions distinctly favorable to the patient. To do this a psychological as well as a physiological study of the individual case is absolutely essential. The following example, also taken from my own experience, I think will serve to illustrate my contention. It is, I feel sure, but one of a large number.

Mrs. L., for nearly a year wandered about from place to place in search of relief from what turned out finally to be autointoxication, with the not unusual complication of mental depression. After knocking about during this time from specialist to specialist, she was somewhat, though not much, worse. Various possible diagnoses had been submitted to her, none of them positive, all of them suggestive of dire possibilities. She was then persuaded to try a Western physician, well-known for his scientific and thorough work. The latter's assistant was sent with a bagful of apparatus to the sufferer's hotel; the apparatus was unpacked; it made a formidable display. A blood examination was made; blood pressure was ascertained by two different instruments; previously arranged for specimens of various excretions were accumulated. The better part of an hour was thus consumed, and the patient was duly, in fact, too thoroughly, impressed. Being a very intelligent woman and naturally an interested spectator of these proceedings, she asked the assistant the reason for each examination and what bearing it might have on her case. The assistant gladly, enthusiastically, explained each procedure and all the bearing it might have, not only on her case, but on various other cases. The patient said that when the assistant left, she felt as though none of her organs were above suspicion, and that a whole array of new possibilities had been set before her. She had been told that several days must elapse before the various examinations could be completed and the reports handed in. In the meantime her thoughts were busy, and, in the absence of any favorable suggestions, they were not of a pleasant character. All the deadly diseases associated in her mind with the various organs on trial passed in gloomy review before her. An office visit was arranged for. A physical examination was made; then more urine was examined. Her stomach was pumped out, and another blood pressure test was made. She was told it was all for diagnostic purposes, and not one word of favorable suggestion was used to counteract these depressing procedures. She felt that she was getting worse day by day. Adverse suggestion was doing its work. She grew more emotional; her depression became profound; her nights were more restless; her appetite disappeared; she was in a deplorable condition. More tests were made. Finally the whole verdict was in, it was—"neurasthenia." The patient would have been glad to believe it, but she could not. Adverse suggestion had done its work. Subconscious evidence was too strong. Science had reached the truth, but the patient was not the gainer; she on the contrary had been harmed, made worse. The cheerful assurance of ultimate health given her then had naturally very little effect on the now profound depression. Eliminative treatment had been instituted, with, however, the suggestion, unconsciously given by the physician but keenly appreciated by the patient, that no treatment was of much avail and that only time would effect a cure. She was then sent away to the country to get well. The next few months saw some slight physical improvement, but her mental condition remained about the same. She then fell into the hands of a doctor evidently thoroughly alive to the value of psychotherapy. This man studied her mental state as carefully as he did her physical condition. He treated the autointoxication as any intelligent physician would, but with this great difference,—he went at it with *assurance* and used every other favorable suggestion that could be brought to bear. The result was brilliant. Insomnia, which had been greatly increased by adverse suggestion, entirely disappeared, and long, restful nights succeeded each other. Disturbed functions were reestablished; consequently, appetite and nutrition immediately improved. There was a rapid disappearance of depression and a return of interest in matters other than the patient's bodily condition. Anyone will readily admit the very great gain to the patient in days spent in the hopeful anticipation of returning health, as compared with a life continuously poisoned by the constant thought of impending disaster. In a few weeks she was well.

The contrast presented by this case, between the effect of treatment with adverse suggestion and that of practically the same treatment with favorable suggestion, is, I think, sufficiently striking without further comment. Furthermore, the case is undoubtedly illustrative of a very large class.

Let me quote one other case which demonstrates the value of favorable suggestion: Mrs. H., who for twenty years or more had suffered from obstinate constipation in spite of hygienic, dietetic, and medicinal treatment, happened one day, while waiting, to pick up Dubois' "Psychic Treatment of Nervous Disorders" which was lying on my table. Glancing through the index she found that there was a chapter on constipation, her "bête noire." She read that chapter through. Many cases were described; the cases seemed, most of them, more severe than hers. She went home determined to try his system, and for this purpose she bought a copy of the book in order to follow his directions to the letter. She did exactly as he directs, and discarded her habitual drugs. Except for the first day or two, in which she had no very satisfactory results, she has since then until now, a period of four

months, had a normal movement every single morning, without any medication whatever. The system Dubois describes differs in no essential way, save for the lack of all drugs, from that which Mrs. H. had been following for years. She had risen every morning at a fixed hour, taken a glass of water on arising, had breakfasted at an equally fixed hour, and had gone to the toilet also at a fixed time. Besides, she had eaten quantities of fruits, taken a laxative every night, and had also taken plenty of water during the day. Until reading Dubois' chapter on constipation, a nightly laxative had been absolutely necessary. After reading this chapter, she abandoned all drugs. She began her day one hour earlier, merely in order to follow exactly to the minute the system laid down, but otherwise there was no change. The result speaks for itself, and the cause of this brilliant result is not far to seek;—a wise hygienic system, recommended with absolute assurance, backed up by authoritative mention of many cures, and explained simply, clearly, suggestively; in short, efficient suggestion. This patient since her own cure, has cured two other similar but more severe cases, by means of this same excellent chapter.

It is hardly necessary to quote authorities to prove the importance of suggestion, for it becomes evident as we have seen, merely by intelligent observation of daily experience. However, a list of the names of the foremost psychologists of to-day would serve my purpose as authorities, for the presence of suggestibility in the waking state is accepted by all as one of the fundamental facts of psychology. For example, Bernheim in his "Suggestive Therapeutics" shows that suggestibility obtains not only in hypnosis but in the waking state as well.

There is overwhelmingly strong evidence of the therapeutic power of suggestion in its simplest form, without hypnosis, in Dubois' now well-known book, "Psychic Treatment of Nervous Disorders." That the author creates some unnecessary confusion by giving the name of "rational persuasion" to that which has been defined by the best authorities as suggestion, is of very little moment. His psychotherapy none the less depends absolutely on the laws of suggestion, not only in its method of application but also in its operation and results.

Lately Sidis, by a series of very careful scientific experiments, described in his really remarkable book "The Psychology of Suggestion," has proved beyond peradventure that "man is a suggestible animal, par excellence," and that "the subwaking self surpasses the waking self in sensitiveness normally as well as in hypnosis."

G. von Voss shows his conviction of the extent of normal suggestibility by saying: "Hypnosis is not a pathological condition; it can be produced in almost every normal human being."

Forel states in "Hypnotism and Psychotherapy": "I cannot emphasize sufficiently that suggestibility is an absolutely normal characteristic of the normal human brain." Illustrating the power of unconscious adverse suggestion the same author says: "I am fully aware that I once suggested a gastric ulcer to a patient in whom I suspected this condition, by having a serious countenance and by carefully palpating the region of the stomach, and ordering rest in bed and a milk diet. I suggested the pain by means of a pointed question, and the result of my want of knowledge of suggestion at this time was that the patient was confined to her bed for many months by a suggested illness, which was not really there."

Many other well-known names such as Vogt, Moll, James, and Münsterberg could be added to the list. Authority is not lacking, the facts are clear, and the clinical results evident. Indeed, there is to-day no more excuse for neglecting suggestion than there is for neglecting any other therapeutic agent of recognized activity. In fact, there is less reason for so doing, for unlike drugs and instruments, suggestion when neglected, will not lie quietly in an unused corner of the medicine cabinet, but follows the physician about willy nilly and exerts its power haphazard for good or evil through him on each one of his patients.

The importance of avoiding adverse suggestion is but the logical corollary of the foregoing. Adverse suggestion is manifestly as great a sin against efficiency as is the use of dull instruments or impure drugs.

To avoid the evils of adverse suggestion and to take advantage of all the good inherent in favorable suggestion is clearly the duty of every physician. To accomplish this with complete success, it is necessary that one should always keep vividly before one's mind the following facts:

1. The ultimate object of all medical work, whether clinical, experimental, chemical, or whatnot, is relief of suffering. 2. Suffering is a mental process and stands in relation to bodily ills not only as effect, but also as cause. 3. Every patient is suggestible and is, therefore, a highly individualized psychological as well as a physiological problem, and should be studied and treated as such.

Therefore, it is obviously as necessary that the physician should acquire a knowledge of psychology and of its application to medicine as it is that he should be familiar with physiology, pathology, or materia medica, for they are all intimately correlated component parts of the one great entity—the Healing Art.

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THE RELATION OF PLEURISY TO PULMONARY TUBERCULOSIS.

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The relation of serofibrinous pleurisy to pulmonary tuberculosis has attracted the attention of medical men for many years, and that the relation was thought to be close and important long before the tubercle bacillus was discovered is shown by the following written by Niemeyer[1] in 1867 concerning the prognosis of pleurisy. He says, "When the malady is of a creeping, in-

sidious type, the prospect is much more grave than in the acute type, as even after complete absorption *tuberculosis frequently appears as a sequel.*" Many other writers of that and earlier days mention the same fact more or less positively. As a result of the discoveries made since then in the fields of bacteriology, hematology, cytodiagnosis, etc., it has become more and more apparent that there is between pleurisy and pulmonary tuberculosis an even closer relation than was dreamed of at that time.

This relation we will consider under two heads, namely, pleurisy as a complication of pulmonary tuberculosis, and pleurisy as a forerunner of tuberculosis, that is, as the initial manifestation of tuberculosis. The word initial is used here in a purely clinical sense, without intending in any way to decide whether such pleurisies are really primary or secondary, pathologically. They are considered as initial attacks of tuberculosis simply because no previous manifestation of tuberculosis can be traced and no evidence of it can be found at the time of the pleuritic seizure except the pleurisy itself.

The first class is very familiar to us all and we can pass over it somewhat briefly. A review of 450 cases treated at Stony Wold Sanatorium reveals the fact that 204 cases, or 45 per cent., suffered from pleurisy during their residence at the sanatorium. This includes all degrees of pleurisy from the slightest dry pleurisy to cases with very large effusions. The great majority of the cases, however, were cases of dry pleurisy. Former Surgeon General Banks[2] of the Marine Hospital Service found 279 cases of pleuritic adhesions in 371 complete necropsies of tuberculous patients, a little over 75 per cent. These adhesions varied from a mere thread to a massive adhesion which bound the entire pulmonary surface to the peripheral wall.

In spite of this frequency of pleurisy as a complication, the presence of preexisting tuberculosis gives us a clear and definite indication for treatment and leaves us in no doubt as to the necessity of prolonged care and watchfulness after the pleurisy itself has subsided. It should be noted that the tuberculous disease of the lungs is sometimes apparently aggravated by the complete withdrawal of a large effusion.

Pinquet[3] pointed out this tendency and explained it on the ground that the false membrane covering the pleural surfaces contained large numbers of bacili and that when these surfaces were rubbed together after the withdrawal of the effusion, the bacilli were set free and were carried into the lung tissue, while, on the other hand, the presence of fluid compressed the lung and kept it at rest, prevented the aggravation of pleural inflammation by friction of inflamed surfaces and kept the bacilli from doing greater harm by virtue of certain bacteriacidal elements contained in the effusion.

The recent work of Opie[4] shows that a complete withdrawal of a serous effusion may result in the formation of a purulent pleurisy by removing with the fluid certain antilytic substances which have held the zymotic activity of the cellular elements in abeyance. Complete removal of the fluid in Opie's experiments resulted in the rapid autolysis of certain cellular elements, more or less disintegration of the fibrin by the action of the cellular enzymes, increased inflammation of the pleural surfaces, increase of cellular elements in the fluid and the formation of pus.

His experiments also went to show that complete restoration of the pleural cavity to a normal condition was more rapid if the fluid was not totally removed. Opie says it is not believed that his experiments indicate that aspiration of serum from a serofibrinous case is dangerous and likely to convert it into a purulent case, but that they may "suggest that complete withdrawal of the serum is undesirable."

I feel that usually it is much safer in cases of pleurisy with serous effusion occurring in the presence of pulmonary tuberculosis to draw off only a small part of the fluid if respiration is embarrassed, or to leave it alone for a time if there is not enough fluid to cause dyspnea or other serious symptoms. If spontaneous absorption is too slow, the withdrawal of a small amount of fluid frequently leads to the speedy absorption of the rest.

Our present knowledge of toxins and antitoxins would lead us to believe that the serum of pleurisy contains anti-bodies which are taken up by the system if the serum is reabsorbed and which tend to produce a certain immunity against the tubercle bacillus and its products. This is borne out in experience by the fact that cases of pulmonary tuberculosis in which pleurisy with effusion occurs and in which the fluid is not withdrawn, or at most withdrawn only in part, frequently do remarkably well after the pleurisy subsides, and seem to show clinically, for a time at least, if not permanently, a much greater immunity to the tuberculous process than was shown before the pleurisy.

Before giving any statistics on the occurrence of pleurisy as a forerunner of tuberculosis it may be of interest to mention briefly the methods that may be used to determine the nature of a given case.

The history is of great importance, for if there has been continued exposure to tuberculosis, and still more if there has been a previous suspicion of tuberculous disease in the individual, the probability is great that the pleurisy is of a tuberculous nature, and even if there is some other cause present like the pneumococcus, still such cases should call for anti-tuberculous treatment after the pleuritis is gone. An insidious onset is the most suspicious point in symptomatology, though the occurrence of night sweats in a case with serous effusion would point strongly to tuberculosis.

The tubercle bacillus is, of course, conclusive evidence if found in the effusion, and it is probably best sought for by the method known as inoscopy. This consists briefly in drawing off the effusion with proper precautions to prevent its contamination, allowing it to clot, dissolving the clot by a mixture of hydrochloric acid and pepsin, centrifuging, and staining the sediment for tubercle bacilli. The bacilli are caught in the coagula and after these are dissolved the bacilli are collected into the small compass of the bottom of the centrifugal tube. Tubercle bacilli are very easily decolorized after passing through this process. Considerable care is needed to stain properly. At the Massachusetts General Hospital bacilli were found in 24 of 115 cases, or 20.8 per cent. Zebrowski[5] found tubercle bacilli in 65 per cent. of primary pleurisy and in 83 per cent. of pleurisy secondary to tuberculosis, by sedimentation of large amounts of fluid in which coagulation was prevented by sodium fluoride.

Animal inoculation is a very good way of testing the fluid for tubercle bacilli, but the strictest

antisepsis is imperative to prevent contamination with other organisms, particularly pus cocci which would kill the test animal before the tubercle bacilli had time to cause any characteristic changes. A rather large quantity of serum must also be used or negative results are probable. Several times as many positive results will be obtained by injecting 15 or 20 c.c. than by using 1 or 2 c.c. for the inoculation. Le Damany[6] was able to get 85 per cent. of positive results by inoculation, using from 10 to 50 c.c. and even as high as 300 c.c. of serum.

It has been found in some instances that no bacilli could be found microscopically and yet animal inoculation demonstrated the fluid to be tubercular. Conversely, bacilli may be found microscopically in fairly good numbers and the inoculation prove negative. In the latter case the bacilli are probably dead or at least avirulent.

Another test of the nature of a pleuritis consists in using some of the serum as we use tuberculin. If injected into an animal known to have tuberculosis, a tuberculin reaction should be produced if the serum is from a tuberculous patient.

These methods, inoscopy, inoculation, and the tuberculin reaction are all practically out of the question except in the laboratory. They are all more or less difficult in point of technique, and unless one has used them extensively he cannot hope for very great results. The fact that different observers, who have become expert, have obtained positive results in such large percentages of cases of serofibrinous pleurisies is, however, of very great importance.

The method of cytodiagnosis is a useful one, but, like the others, requires much practice to enable one to get reliable results. It is possible to use it outside of a laboratory, and in this respect it is more generally usable than the preceding methods. Cytodiagnosis is performed as follows: The fluid should be drawn with the usual antiseptic precautions, and when clotted should be stirred with a glass rod and shaken until the clots are thoroughly contracted and the cells are squeezed out of the meshes of the clot. Better still, clotting may be prevented by mixing the serum with half its volume of salt solution. The fluid is then centrifuged for five minutes and the supernatant fluid decanted. The sediment is mixed with the few drops of fluid that remain in the tubes and cover glass smears made from it. These are stained by one of the methods of differential staining and a differential count of the leucocytes is made. Musgrave[7] recommends Wright's blood stain three parts, pure methyl alcohol one part. Differential staining is needed because the nucleus of a degenerated polynuclear cell may swell up and assume the same shape as that of a mononuclear cell, and it is only by the different manner in which the two nuclei stain that they may be distinguished. A large excess of lymphocytes indicates a tuberculous origin, while an excess of polynuclear cells would point to an acute infectious cause.

In pleurisies secondary to pulmonary tuberculosis, the lymphocytes are not found but are replaced by necrotic cells and detritus. This, however, does not matter much because in these cases we have other evidence of the presence of tuberculosis. The specific gravity must be 1015 or more and the percentage of albumin 2 or more to distinguish from a mechanical transudate, as lymphocytes may predominate in a transudate of long standing. They may also predominate when an acute infectious case is subsiding or when the infection is very slight. Working on these lines Musgrave was able to recognize 64 per cent. of 72 cases as tuberculous, and these findings were verified by other means in most of the cases. Carter[8] also succeeded in identifying a large percentage of cases by this method.

Differential blood counts cannot be considered of positive diagnostic value, but a low leucocyte count suggests tuberculous pleurisy, while a high leucocytosis suggests either empyema or pneumonia or a pleurisy due to pneumococci. Micheleau[9] asserts that hyperchloruria indicates that the pleurisy is tuberculous.

Our records at Stony Wold Sanatorium show that 193 cases, or 43 per cent. out of 450 cases reviewed had pleurisy preceding their admission and 10 per cent. gave a history of pleurisy preceding other symptoms of phthisis. Dr. K. Thue[10] records 30 cases of serous pleuritis, 17 of whom showed later that they were tuberculous. Dr. George B. Sears[11] collected 439 cases of pleurisy treated at the Boston City Hospital. These were cases where there had been no cough, hemoptyses, hip disease, or other reason for thinking that they were secondary, that is, to all appearances they were cases of true idiopathic pleurisy, the "pleurisy a frigore" of former writers. It was found that 86 or 20 per cent. had died within 17 years and 23 others probably shared the same fate, although the records of these cases were not perfectly clear. The causes of death are as follows:

	Positive Class.	*Doubtful Class.*
Phthisis	45	13
Pleurisy	5	1
Empyema	1	0
Bronchitis	3	0
Edema lungs	1	0
Pneumonia	6	4
Meningitis	3	2
Other nonpulmonary causes	22	3
	86	23

If we consider only those cases in the first list who died from phthisis we find that 52.3 per cent. of the cases dead within 17 years died of pulmonary tuberculosis, and in addition to these we have 5 who died of pleurisy, 1 of empyema, 3 of bronchitis, 1 of edema of the lungs, and 3 of meningitis, in all of whom the probability is strong that the tubercle bacillus was the direct cause of death. If we compare the number of deaths with the entire number of cases we find that 10 per cent. died of pulmonary tuberculosis, or 13 per cent., if we include the cases of pleurisy, etc., which were probably of tuberculous nature. If we also include, as seems to me fair, the 16 cases dead of tuberculous disease among the 23 whose histories were open to suspicion but which were in all probability correct, we have 17 per cent. of the 439 cases of idiopathic pleurisy that died of tubercular disease within 17 years, or if we view it from another standpoint we see that 69 per cent. of those who died within 17 years died of tuberculosis.

Dr. R. C. Cabot[12] gives rather more favorable figures. Among the 152 cases of apparently primary pleurisy with serous effusion that he was able to trace, 15 per cent. subsequently developed demonstrable tuberculosis and 55 per cent. of the total deaths were due to this disease. Dr. Percy Musgrave classified 72 cases of pleurisy with effusion treated at the Massachusetts General Hospital according to the cytological formula of Widal and Ravaut and found 45 cases, or 65 per

cent., to be of tuberculous nature. Dr. A. G. Barrs[13] reports 57 cases of pleurisy with effusion treated at the Leeds Infirmary, 21 of which died of tuberculosis, and Fiedler[14] reports 92 cases, 28 of which died of tuberculosis within two years, 48 others had more or less definite signs of pulmonary tuberculosis, and only 21 of the 92 cases remained healthy—82.6 per cent. subsequently suffered with pulmonary tuberculosis.

It may be of interest to notice the length of life among those dying of tuberculosis following pleurisy. In the series reported by Sears, counting only the first or positive series, 40 per cent. of the deaths from tuberculosis occurred in the first two years, 31 per cent. between the second and fifth years, that is, 71 per cent. in the first period of five years, 12 per cent. died in the second, and 16 per cent. in the third five years, and only one case lived to the sixteenth year.

That family history is important as an element in diagnosis and also in prognosis appears from the following figures: In Cabot's cases 67 per cent. of those that developed tuberculosis gave a history of predisposition or rather of exposure from occurrence of tuberculosis at an earlier time in the members of the patient's family or in the patient himself, while only 25 per cent. of those who remained well for five years had been so exposed. In Grober's[15] series 45 per cent. of the cases that developed tuberculosis after idiopathic pleurisy had been exposed to infection through the previous occurrence of that disease in other members of their families.

In reviewing the foregoing we see that a very large percentage of cases of apparently primary serofibrinous pleurisy may be demonstrated to be of tuberculous nature by laboratory methods, provided the investigator is sufficiently proficient with the method employed. We find, moreover, that in various series of cases that have been followed for some years after the serofibrinous pleurisy, a large number show tuberculosis, the figures varying from 15 per cent. in Cabot's series to 82.6 per cent. in the series of Fiedler.

While it must not be forgotten that pleurisy with effusion may accompany lobar pneumonia or may be caused by the pneumococcus without pulmonary involvement, and that it may also result from streptococci, staphylococci, and other microorganisms as well as from cancerous disease; and while we must also remember that serous fluid in the pleural cavity may be merely a transudate due to renal or cardiac disease, we must nevertheless be convinced that all these causes together are responsible for only a minority of the cases of so-called idiopathic serofibrinous pleurisy, the majority being cases of tuberculosis of the pleura and to be treated accordingly.

Those of us who have opportunity to gain special experience in tubercular work so frequently see pulmonary tuberculosis developing within a year or two after an attack of serofibrinous pleurisy, recovery from which had apparently been good, that we are ready to accept the conclusion of the figures cited above, namely that the great majority of initial serofibrinous pleurisies are of a tubercular nature.

From this it follows, and I wish to urge this conclusion upon my readers as strongly as possible, that when called upon to treat a case of apparently primary pleurisy with serous effusion, it is the physician's duty to bring to bear upon it as many methods of determining its nature as possible, and that only when there is positive evidence of a cause other than the tubercle bacillus should he discharge the case.

In all serofibrinous pleurisies the absence of a demonstrable positive non-tuberculous cause should be accepted as a presumptive evidence that the case is really one of tubercular pleurisy, and the case should be watched and handled as a case of incipient tuberculosis for a period of not less than two years. I do not wish to be understood that such a case must go to a health resort for such a length of time or that he must necessarily give up work, but I do mean that he should be kept under close observation, that his chest (the whole of it, and that devoid of all clothing) should be examined at intervals of at most two or three months if he appears well, oftener if there is any evidence of impaired health, and that he should be told to regulate his mode of life, his work, his meals, his rest, and his fresh air in accordance with the general rules applicable to tuberculosis in general, and to the particular conditions that may be found at the examination from time to time. If the patient's means will permit I believe that a sojourn of a few months at a health resort under the care of some reliable specialist is well worth while, especially if symptoms of other tuberculous trouble develop.

I wish to call attention particularly to the fact that, although it is not the rule, signs of pulmonary tuberculosis not infrequently are found first at the upper part of the lung opposite to the side on which the pleurisy occurred. For this reason the entire chest must be investigated.

By following this course, while we may perchance exercise control in an occasional case where control is not needed, we will certainly pluck many and many a case from the grasp of the Great Destroyer and prolong many useful lives that would otherwise follow the downward course so common in untreated or tardily treated cases of tuberculosis. This is the more true because, as shown by Cabot's cases, the type of tuberculosis following pleurisy with effusion is usually not very violent, and we may therefore expect very satisfactory results from suitable prolonged supervision and treatment.

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PROPHYLACTIC INJECTIONS OF DEAD STREPTOCOCCI IN SCARLET FEVER.

OF all European countries Russia shows the greatest morbidity as well as mortality so far as scarlet fever is concerned, and it is perhaps this fact that has led the Russian physicians to special activity in devising methods to fight the frightful epidemics that often take place in the villages. The results of their efforts have remained for the most part unknown to the American profession being published chiefly in the Russian journals, yet they have been striking enough in recent years to deserve attention of the entire medical profession. Some years ago Gabritchevsky began to use injections of dead streptococci in the treatment and prevention of the disease, sharing the view of those who saw in that organism the specific cause of the disease. This view was strengthened in his mind by the similarity of the symptoms of the disease in human beings with those of an infectious adenitis of horses caused by the streptococcus.

Accordingly, Gabritchevsky isolated a streptococcus from the heart blood of children dying of scarlatina and then grew it on the usual artificial media. The first experiments with the dead cultures were made by him on himself and on his children, and after these proved to him the harmlessness of the procedure he supplied the vaccines in large quantities to the Russian profession. From that time till April, 1908, 37,000 persons have been treated in accordance with his ideas, over 50,000 injections having been made, for it was soon seen that repeated treatment was much better than a single injection of the dead bacilli. The injection is usually followed by redness, a slight rash, and some swelling at the site of the puncture; the regional lymph nodes often become swollen and painful; the temperature is slightly elevated; the child becomes irritable, weak, and loses its appetite; but all these symptoms disappear in a few days. The preventive value of the injections may be judged by some instances quoted in an article by Danilow in *Russkii Vrach*, of May 17, 1908. In two villages where scarlet fever appeared all the children were immediately vaccinated; in the first village no more cases of the disease occurred among children, but two unvaccinated adults were infected; in the second village the vaccinated children remained healthy, but a boy who came from another place on a visit was taken with the fever. Dreyling tells of vaccinating six children of a peasant's family, the seventh, a little girl, having hidden herself to escape the injection. Four days later she developed scarlet fever. Another unvaccinated child was admitted to the hospital together with an elder sister who was to act as nurse; she had been vaccinated and remained free of the disease though constantly in the scarlatina ward. In another family the elder children were vaccinated, but the parents refused to permit the treatment for themselves and for two babies; in a few days three of the unvaccinated adults came down with the disease; then the youngest children were vaccinated and remained healthy. The general effect of the vaccinations are best seen in the figures of morbidity given by Danilow. Only 1.1 per cent. of all the vaccinated persons were taken sick with scarlet fever; of those vaccinated once 1.21 per cent. were later attacked by the disease, 0.73 per cent. of those vaccinated twice, and 1.09 per cent. of those vaccinated three times being affected. The total mortality from scarlet fever of the vaccinated persons was but 0.123 per cent.; the mortality of those who became sick in spite of the prophylactic injections was 11.1 per cent. During the epidemics many cases of course must have been injected while in the incubation period of the disease and cannot therefore be used to calculate the prophylactic effect of the treatment.

The above results obtained in the last two years and a half deserve attention from the physicians of other lands as well as of Russia. Since the ravages of diphtheria have been successfully diminished by the antitoxin treatment, scarlet fever has remained the one great disease of childhood, dangerous in itself and bringing with it a host of complications that may kill the child soon after the original disease or make him a weakling or an invalid throughout life. Gabritchevsky's method should certainly be tried wherever possible so that its value in the treatment and prophylaxis of scarlet fever may soon be determined.

THE TOLERANCE BY THE TISSUES OF SURGICAL MANIPULATION.

IF one is to judge by the impunity with which surgeons attack the various structures of the body, he can only conclude that the tolerance of the latter to such manipulations is almost unlimited. The literature contains accounts of a large number of cases in which repeated operation in the same part of the body has been necessary for the relief of morbid states. Fortunately, nature has been prodigal in providing functionating structure in excess of the actual or ordinary needs of the organism, so that a certain amount of loss can be borne without disturbing the metabolic equilibrium of the body. Moreover, many of the tissues possess the power of regeneration to a compensatory degree; and, besides, the functions of organs destroyed, in whole or in part, can be, in some measure vicariously assumed by other organs or tissues. The behavior of the kidneys in the presence of conditions such as those here under discussion is dealt with in an interesting manner by Dr. W. Wayne Babcock, who reports in the *Annals of Surgery*, No. 4, 1908, a small group of notable cases in which multiple and successive operations on the kidneys were necessary and carried out. In one of these bilateral nephro-

lithotomy was performed one year after double nephrotomy for bilateral calculous disease; one year later one kidney was drained; a year later later still nephrectomy was performed; another year later the remaining kidney was opened and a number of recurrent calculi removed. In another case, two years after nephrolithotomy on one side, the same operation was performed on the opposite side; one year later bilateral nephrostomy was performed by two operators working simultaneously; and in the following year nephrectomy was performed. In other cases still appendectomy, nephrolithotomy, and secondary nephrotomy; appendectomy, nephrolithotomy, and nephrectomy; nephrolithotomy, nephrostomy, and secondary nephrectomy and ureterectomy; litholapaxy and secondary nephrolithotomy were performed consecutively.

Among the conditions that predispose to the reformation of renal calculi after nephrolithotomy are infection, failure to remove all stones or fragments or other foreign bodies, and the persistence of the factors responsible for the presence of the original calculus. In the experience of Dr. Babcock, bilateral or consecutive operations upon the kidneys are well borne in the absence of infection. Nephrolithotomy, he finds, is frequently followed by reformation of stone in the kidney. Nephrostomy may not only fail to cure, arrest, or prevent pyelonephrosis or relapsing nephrolithiasis, but it may even favor the development of one or other of these conditions. In operating for simple calculous disease of the kidneys, Dr. Babcock advises the avoidance or only temporary use of postoperative drainage, and then with the most rigid aseptic precautions.

REPARATIVE PROCESSES IN ANEMIA AND LEUKEMIA.

The practising physician who has to do with differentiated tissues and organs but seldom observes an example of a reversion on the part of these structures to an earlier, less specialized type so far as their function is concerned. The pathologist, on the other hand, in the innumerable phenomena and results of disease that he observes by the finer methods of the laboratory, frequently meets with instances of such reassumption of type and function on the part of organs or their elements when affected by an extraneous or irregular new factor. Thus Meyer has shown (*Münchener medizinische Wochenschrift*, June 2, 1908) that the liver, the spleen, and frequently the lymph nodes assume a fetal type in grave or pernicious anemias as far as their cellular character is concerned. Erythroblastic cells and newly formed leucocytes appear in them, while the blood-making organ of the adult, the bone marrow, shows likewise a picture of greatly increased activity.

Meyer, together with Heinecke, has interpreted these phenomena as reparative in nature in opposition to another conception of the findings which seeks to interpret them as the primary result of some unknown harmful agent. Von Domarus has greatly strengthened the standpoint maintained by Meyer by producing experimental anemias in animals and showing that the changes in the blood-making organs of intrauterine as well as of extrauterine life were similar in these animals to those observed in patients with pernicious anemia. The view of anemia defended by these authors answers very well to the modern conception of the phenomena of disease as processes of adaptation or compensation under new surroundings. To accept it, however, means to differ completely from some recently practised measures in the treatment of anemias and leukemias. The removal of the spleen in lymphatic leukemia would of course be a highly illogical procedure. The exposure of the bone marrow to the effect of the *x*-rays, too, would simply mean the interference with local reparative processes without sufficient reason to believe that their continuation was harmful to the rest of the organism.

Fracture of the Radius with Injury of the Median Nerve.

Very little has been written concerning median nerve injuries complicating fractures of the lower end of the radius. The fact that tendons and the pronator quadratus separate bone and nerve probably accounts for the rarity of injuries to the latter; furthermore, dislocation of the fragments in fractures of the lower end of the radius is rare and the callus is usually small. But the fact that injury to the nerve is rare makes a knowledge of its possibility none the less important. In the April number of the *Deutsche Zeitschrift für Chirurgie* Blecher has collected all the cases of injury of the median nerve following fractures of the lower end of the radius heretofore reported and adds a case of his own. He distinguishes between primary and secondary nerve injuries, the former caused by pressure of a fragment at the time of fracture, the latter by the callus. The primary variety is less frequent and is usually not diagnosed until at the time of first dressing, or three or four days after the injury, when the patient complains of a feeling of numbness, and complete motor and sensory paralysis is found in the region of the median nerve. Blecher recommends early massage, bathing, and faradization. Recovery occurs in the majority of the cases in from one and a half to two months; if by that time there is no improvement he advises resection and secondary suture of the nerve. When the injury is secondary, symptoms do not appear until from one to two and a half months after the injury and are due to the nerve being stretched or subjected to friction by the callus. When due to the latter the symptoms usually disappear when the hand is put at rest. The symptoms begin with pains in the fingers, paresthesias, and only slight motor and sensory disturbances. As treatment he advises immediate removal of the callus, this operation always being followed by cure of the condition. Though injury of the median is rare in cases of fracture of the lower end of the radius, the early diagnosis is of great importance as the prognosis is best when treatment is begun early. For this reason it is advisable to test the functions of the median nerve when the fracture is first put up. The secondary injuries can be prevented only by good apposition of the fragments, and not always even then.

Antitryptic Power of Human Blood Serum.

The claim of John Beard of Edinburgh that the pancreatic ferments, trypsin and amylopsin, are

curative in cancer, with the lively discussion which followed his announcements, gave an impetus to the study of the relation of enzymes in general to the diseased organisms. Brieger and Trebing have recently investigated the effect of human blood serum upon the digestive power of trypsin (*Berliner klinische Wochenschrift,* June 1, 1908), mixing the two in various proportions and using plates of Löffler's medium for testing the effect produced. Normal blood serum was able to prevent tryptic action in the strength of one part to three or four of the ferment. Thirty-five sera of patients suffering from carcinoma showed great increase in the antitryptic power when compared with the normal figures, proving capable of preventing the action of the ferment in dilutions of one part serum to from six to ten parts of the enzyme. The sera of patients with suspected carcinomatous disease showed a similar increase in the antitryptic property, while the existence of tumors of other types seemed to leave the serum in its normal condition in this respect. Successful operation in cases of cancer seemed to have the significant effect of again reducing the antitryptic power of the serum to its normal limits, but the observations were too few in number to justify any final conclusions. The sera in other diseases gave varying results though no such uniform increase in the antitryptic power could be observed except in a few cases of grave anemia. How far the reactions studied may be utilized in the differential diagnosis of carcinoma can only be decided after similar observations on more abundant material have been made.

Blood Pressure and the Streptococcus Toxins.

It is well known that one of the most important manifestations of toxemia in infectious diseases consists in the progressive fall of the general blood pressure. Huchard indeed takes this fact as the basis for a classification of diseases, calling all infectious conditions hypotensive, all other hypertensive diseases. Experimental work, however, has weakened such division, it being shown that some bacteria, *e.g.* pyocyaneus and staphylococcus, cause increase and not a fall in the blood pressure. Kurt Tautz (*Centralblatt für Bakteriologie,* Band XLVI, Heft 6) examined *Streptococcus pyogenes* with reference to this point. The primary effect of intravenous injections of streptococci cultures was an immediate rise of blood pressure which was followed by a gradual and step-like fall. After a half hour the blood pressure returned to its original height, reaching it not gradually this time but in several quick changes which were accompanied by disturbed respiration and convulsive movements of the animal. Tautz concludes that no latent period is present in the effect of the toxins upon blood pressure, in contradistinction to the existence of such a period when large quantities of living bacilli are introduced into the blood of animals. The results, of course, apply strictly to the species of bacilli used in the experiments, namely the pyogenic streptococci, and further work with other bacteria may be awaited with interest.

Cesarean Sections Under Spinal Anesthesia.

General ether or chloroform anesthesia for cesarean section possesses the disadvantage of often seriously affecting the unborn child and interfering with the regular initiation of respiration, in addition to being dangerous in the presence of severe kidney or lung lesions in the mother. To obviate these dangers Polano has tried lumbar anesthesia for this operation with perfect results in the four cases so far observed (*Münchener medizinische Wochenschrift,* June 2, 1908). The operative interference proved to be completely painless, the uterus contracted firmly after the removal of the child, and the postoperative course was very satisfactory. In every instance the child began breathing and crying immediately after the delivery, thus showing that the interruption of the placental circulation and the mild external stimuli to the skin are sufficient to initiate respiration in the newborn, the more vigorous stimuli of pressure upon the head, of partial asphyxia, etc., present in the normal deliveries not being necessary to start this function. The results obtained by the author lead him to recommend to other gynecologists the trial of spinal anesthesia in cesarean section.

News of the Week.

Medical and Hospital Corps of the United States Navy.—Recent legislation has materially improved the status of the members of these two corps, and new circulars of information are being issued by the Surgeon-General of the Navy. Fifty-four vacancies exist in the Medical Corps, and a large number of men are needed in the Hospital Corps, including druggists for hospital stewards.

Naval Medical Corps.—A candidate for appointment must be a citizen of the United States, twenty-one to thirty years of age, and must present testimonials as to character and professional fitness. Examinations are conducted under three heads: physical, professional, and collateral. The physical examination is thorough and includes tests of vision and color perception. The professional examination covers medical subjects, and the collateral general high school studies. Examinations are held by the Naval Examining Boards at the United States Naval Medical School, Washington, and at the United States Naval Hospital, Mare Island, Cal. The officers of the Medical Corps of the Navy and their respective base pays are as follows: Medical Director, $4,000; Medical Inspector, $3,500; Surgeon, $3,000; Passed Assistant Surgeon, $2,400; Assistant Surgeon, $2,000. Calculated on this annual base pay the salary of officers is increased ten per cent. for every five years of service, though the pay of Medical Director is limited to $5,000, that of Medical Inspector to $4,500, and that of Surgeon to $4,000. At the expiration of three years of service, assistant surgeons are examined for promotion, and if successful become Passed Assistant Surgeons. Provision is also made for the appointment of Acting Assistant Surgeons, who receive an annual pay of $1,400 for shore duty and $1,700 for duty on board ship. After appointment, each candidate will receive a course of instruction at the Naval Medical School, on the completion of which an examination will be given for admission to the regular service as Assistant Surgeon. Physicians desirous of becoming candidates should apply for information to the President of the Naval Examining Board at either of the examining stations mentioned above.

Naval Hospital Corps.—This corps comprises four classes: (1) Hospital apprentices, who must be from 18 to 25 years of age, and who receive a pay of $22 per month; (2) Hospital apprentices, first class, who must be from 21 to 28 years old, and are paid $33; (3) Hospital stewards, from 21

to 30 years, with a pay of $66 to $77 per month; (4) Pharmacists, whose salaries range from $1,200 to $2,250 per year. All applicants must be citizens of the United States and must enlist for a term of four years' service in any part of the world, either ashore or afloat. Examinations are held at all navy yards and navy recruiting stations, whenever an applicant presents a permit, which can be obtained by application to the Surgeon-General of the Navy at Washington. Candidates for admission to the first class are examined in general subjects, and will find a knowledge of nursing of advantage. For the second class the examination covers in addition, subjects in nursing, such as preparation of patients for operations, preparation of food, beds, charts, etc., and other knowledge necessary for nurses in charge of wards, assisting at operations, etc. Members of these classes are eligible after one year for admission to the higher grade after examination. For hospital stewards examinations are held in general education, and in materia medica, pharmacology, chemistry, toxicology, compounding prescriptions, and minor surgery. Vacancies in the grade of pharmacists are filled only from the class of hospital stewards in order of length of service and upon record and fitness as determined by examination.

Campaign Against Tuberculosis.—The subcommittee on education of the Albany Committee on the Prevention of Tuberculosis has obtained permission from a number of the managers of factories in that city to arrange for a series of short talks on tuberculosis to their employees during the noon hour or following the closing hour. Great interest in the matter has been shown and it has been arranged to present a series of simple lessons treating of the nature of the disease, and means of communication, prevention, and cure.

Ball Game in Aid of Hospital.—Laying aside for the moment their professional dignity the lawyers and physicians of Tarrytown, N. Y., joined in a baseball game for the amusement of the townspeople and for the purpose of raising the $3,000 necessary to obtain a $25,000 gift for the Tarrytown Hospital building fund.

Addition to Roosevelt Hospital.—Plans have been filed for a two-story pavilion to be built on the grounds of the Roosevelt Hospital and to be used for the pathological work of the hospital. The building is to be the gift of Dr. James W. McLane, and will fill a need which has long been greatly felt.

Kansas University Medical School.—Commencement exercises were held on June 8, and the degree of M.D. was conferred on eighteen graduates. Professor Findley of the University of Nebraska spoke on "The Heroes of Medicine."

Mercantile Inspection Bill.—Governor Hughes on June 16 signed the bill transferring the inspection of all mercantile establishments in cities of the first class from the local boards of health to the State Labor Department. A new bureau is to be established under the State Commissioner of Labor.

Ambulance in Collision.—While transferring a patient from St. Luke's Hospital to Bellevue on June 15, the St. Luke's ambulance was struck by a street car, and the surgeon, Dr. Johnson, was thrown to the street and seriously injured. The patient was not hurt.

Cornell University Faculty.—The trustees of Cornell University have announced the appointment of Dr. Sutherland Simpson of the University of Edinburgh as professor of physiology, and of Dr. Andrew Hunter of Leeds University, England, to be assistant professor of biochemistry, at Cornell. Prof. Simon H. Gage of the department of histology and embryology, who retires to take up research work, has been made a professor emeritus.

Pasteurized Milk Stations.—In addition to the six stations maintained throughout the year by Mr. Nathan Straus for the distribution of pasteurized milk in New York, eleven summer stations were opened on June 17. These are situated on the recreation piers and in the parks of the city where the service will be most useful. The report for the past eight months shows a steady increase in the demand for the milk.

The Coming Epidemic of Tetanus.—The Chicago Department of Health devotes considerable space in its weekly bulletin to the 4th of July celebration and the annual epidemic of tetanus. It gives the cause of the disease, and the proper treatment of 4th of July wounds. It likewise announces that it will supply tetanus antitoxin for the treatment of all suspicious injuries for the two weeks preceding and succeeding the 4th of July.

Dr. Adolph Meyer of New York City has been elected by the trustees of the Johns Hopkins Hospital and University to the Directorship of the recently founded Henry Phipps Psychiatric Clinic and to the Professorship of Psychiatry.

City League to Guard Public Health.—The Chicago Local Advisory Committee of the American Health League was transformed recently into a permanent society prepared to give aggressive attention to local health problems. Professor C. R. Henderson of the University of Chicago was elected President, and Professor J. P. Goode of the University of Chicago, Secretary and Treasurer. The Executive Committee is composed of Health Commissioner Dr. W. A. Evans, Dr. George W. Webster, President of the State Board of Health, Adolph Nathan, Miss Jane Addams, and C. Loesch. The work of the League will consist in investigating health problems in Chicago and attempting to get correctional and preventive legislation through the city council and State legislature.

Smallpox on Army Transport.—The transport *Sherman* on its arrival at Astoria, Wash., on June 14, reported one case and one death from smallpox. The *Sherman* left Manila on May 15, with 521 enlisted men, and about 150 additional passengers. A strict quarantine will be enforced. It is reported that almost the entire army is protected by vaccination.

Rabies in Washington.—Alarmed by the number of cases of rabies occurring in the District of Columbia, President Roosevelt has ordered the institution of precautionary measures and has issued an order reviving an old muzzling regulation, under which all dogs must be muzzled during the next six months.

The Massachusetts Medical Society held its annual meeting in Boston during the second week of June. The following officers were elected for the ensuing year: *President*, Dr. S. Presbrey, Taunton; *Vice-President*, Dr. D. E. Keefe, Springfield; *Secretary*, Dr. F. W. Goss, Roxbury; *Treasurer*, G. M. Buckingham, Boston; *Librarian*, Dr. D. H. Brigham.

The Maine Homeopathic Medical Society held its forty-second annual meeting on June 9, in Portland. Officers were elected as follows: *President*, Dr. John T. Palmer, Portland; *Vice-Presidents*,

Drs. George H. Rand, Livermore Falls, and William H. Kennison, Madison; *Recording Secretary,* Dr. L. A. Brown, Portland; *Corresponding Secretary,* Dr. Carrie E. Newton, Brewer; *Treasurer,* Dr. William S. Thompson, Augusta.

American Orthopedic Association.—At the twenty-second annual meeting of this society, held in Chicago on June 4 to 6, the following officers were elected: *President,* Dr. Ansel G. Cook, Hartford, Conn.; *Vice-Presidents,* Drs. Albert H. Freiberg, Cincinnati, and Augustus Thorndike, Boston; *Secretary,* Dr. Robert B. Osgood, Boston; *Treasurer,* Dr. Gwillym C. Davis, Philadelphia; *Executive Committee,* Drs. John Ridlon, Chicago, Robert W. Lovett, Boston, and Reginal H. Sayre, New York; *Delegate to the Congress of American Physicians and Surgeons,* Dr. Virgil P. Gibney, New York; *Alternate,* Dr. H. A. Wilson, Philadelphia.

The Canadian Medical Association at its annual meeting in the second week of June, elected the following officers: *President,* Dr. R. J. Blanchard, Winnipeg; *Secretary,* Dr. Elliott, Ottawa; *Treasurer,* Dr. H. P. Small, Ottawa.

Canadian Valley (Okla.) Medical Association.—The physicians of Oklahoma County, Okla., have organized a medical society under this name and have elected the following officers: *President,* Dr. I. J. Wood, Jones City; *Secretary,* Dr. Townsend, Choctaw.

Obituary Notes.—Dr. Enoch Vine Stoddard of Rochester, N. Y., died at his home on June 6, at the age of 67 years. Dr. Stoddard was born in New London, Conn., July 10, 1840, and received his degree in arts from Trinity College, Hartford, in 1860. He began the study of medicine at Yale, but was graduated from the Albany Medical College in 1863, and served as a surgeon in the 65th New York Volunteer Infantry during the next two years. From 1873 to 1890 he was professor of materia medica and therapeutics in the medical department of the University of Buffalo, and since then has been professor emeritus. For many years Dr. Stoddard was president of the New York State Board of Charities and rendered most efficient service in that capacity.

Dr. T. W. McCarthy of Rockville, Mass., died on June 10, after an attack of pneumonia, at the age of 24 years. He was a graduate of the Baltimore Medical College in the class of 1906.

Dr. Nathaniel Borden Aldrich of Fall River, Mass., died after an operation for appendicitis on June 6, at the age of 42 years. Dr. Aldrich was graduated from Harvard Medical College in 1889, and since graduation had practised in Fall River, where he had a large surgical practice.

Dr. William M. Mercer of Pittsfield, Mass., died at his home on June 8, of heart disease, at the age of 65 years. Dr. Mercer was a graduate of Harvard Medical College in the class of 1866, and was a member of the Berkshire District Medical Society and the American Medical Association. For thirty-three years he had served on the Pittsfield school committee, and had held other city offices.

Dr. Harry E. Ballard of Bridgeport, Conn., died on June 11, aged 35 years. Dr. Ballard was graduated from the medical department of the University of Vermont in 1893.

Dr. Samuel Kitchen of Saginaw, Mich., died suddenly on June 9, aged 75 years. He was a graduate of the University of Michigan in the class of 1863, a veteran of the Civil War, and a prominent practitioner and citizen.

LETTERS TO A NEUROLOGIST.

To which are appended brief replies purporting to set forth concisely the nature of the ailments therein described with remarks on their appropriate treatment.

VII. From a Mother Whose Daughter Is Depressed.

Yonkers, N. Y., Feb. 15, 1907.

Dear Doctor:

Some years ago, I took my eldest daughter to the ——— Clinic to see you. You explained the nature of her illness, and told me that she would regain her health in about six months. She got well and has remained well since. I wish now to consult you about my youngest daughter. She is afflicted somewhat as ——— was ten years ago. This girl is twenty-seven years old and, like her sister, a stenographer. She has been a conscientious, hard-working, good girl, faithful to her employers, by whom she has been very much appreciated, and devoted to her parents, whom she has supported. She was of a lively disposition, rather fond of company, and not much given to moods. She scarcely ever insisted upon having her own way when it was in serious opposition to that of any other member of the family. Until toward the end of last summer she was apparently in her usual health. Then she began to develop the symptoms which are now so continuous and overwhelming. At that time none of us had any suspicion that they indicated the beginning of a trouble such as her sister had, but now there is little doubt. I fear, that it is something of the same nature. Although her condition does not seem so serious as did her sister's, I can see that it is growing worse, and I have been begging her to go to see you, hoping that you will be able to tell her what to do to get well. When she went away for a holiday last summer, she was tired, pale, and somewhat depressed. She was gone three weeks, and on her return she complained that the vacation had done her no good and that she could not go back to work. At times in her conversation to me she hinted that she was a failure, but I did not appreciate then what she meant.

She returned to her work and so far as I know she has done it to the satisfaction of her employers. She says, however, that she does it badly. She takes dictation from a member of the firm who is not thoroughly competent in English. Formerly she could interpret his meaning so well that, when the finished letter was handed to him the diction flattered him. Now she says that not only is it impossible to do this, but she makes many mistakes herself, and it takes her twice as long to do her work as it did before. She attempts to explain this incompetency by saying that she is being punished because she looked upon business merely as a makeshift until she got married, not realizing that it should have been made a life work. She is convinced that, if she had gone to it seriously, confidence would not have deserted her and she would not now be undeserving. She has the idea also that she is a social failure, that no one cares for her, that she is not essential to anyone, that her personality is not agreeable to anyone, and that even the other employees in the office are down on her. She remarks that they go out in pairs, that one awaits the other at the elevated station to go home together, that a number plan to spend Saturday afternoon or Sunday together, but no one asks her, or awaits her, or solicits her company or cooperation. In fact she says that

they do not like her, that they avoid her, that they talk depreciatingly about her, and she is sure that they know she is not up to her work.

When she comes home in the evening she throws herself down on the lounge and often has to be coaxed to take her dinner. She will not participate in any way in the little occurrences, and gossip of family life, nor are we able to persuade her to go out to meet people. Sometimes she will go for a walk with her sister, but she will not go to the theater or to church or to any social gathering; everyone must know she is a failure, she says. Alone with her sister or with myself she will talk unendingly of her lost confidence in her social ability, and of her failure in business. Her sister, who sleeps with her, says she awakens very early, and several times she has told her that the thought of doing away with herself has come into her head. She gets up at six o'clock every morning, but lately it takes her so long to dress that she is scarcely ever ready on time, which is so unlike her, as she used to be quick and alert. Moreover, she is losing flesh, and she shows in her appearance and in her actions that she is not well. She talks to me constantly about the uselessness of it, meaning the struggle to go on now that she is a social and business failure. It is absurd to keep going to business, she says, because every day she is getting more incapable, and it is only a matter of a short time when they will ask her to give it up, so it is preferable to leave now. It is such an effort for her to do the work which formerly she did easily, and it takes her so much longer to do it that it exhausts her. Even the thought of it overwhelms her. She says her thoughts are very slow and sometimes they will not come at all. Once or twice recently she has told me that everyone would be much better off if she were dead.

About two years ago she was keeping company with a young man and we believed she would marry him. But last spring when she began to be run down she gave him up because he was uncongenial. At first I thought her depression might have had to do with that, but it seems to have made no impression upon her and she never mentions him. In fact one of the things that is most mysterious to me about this change that has come over her is that she doesn't seem to care for anyone or anything the way she used to do. This troubles her, too, and she blames herself for not feeling the same toward us as she did. She has been going to different doctors all the fall and winter; some say her blood is thin, others say she has nervous prostration. That she is growing worse I don't need a doctor to tell me, but what to do for her I don't know. I have tried to persuade her to go to you before this, but she is afraid that you will find that there is something the matter with her mind.

Whatever you advise I shall try to carry out. If you think it is necessary to see her first, please let me know.

I hope she is not going to be afflicted the way her sister was. Perhaps you will recall that her sister's illness began apparently in worry over the condition of her nose, which she insisted was red and swollen, but which did not seem to us to be very much different from what it always had been. Always an extremely sensitive girl, she got the idea that everybody remarked this change in her personal appearance. In addition to her work as a stenographer, she had been studying music and had an ambition to become a public singer. After you saw her, the depression became so profound that she attempted suicide on several occasions, once by attempting to jump from the window, and at other times by turning on the gas. These acts were always accompanied by great mental excitement and followed by a sullen, moody state. She took no interest in anything, would not dress or bathe herself, and made all sorts of self accusations and queer statements. She had done something which she could neither define nor explain, but for which she must suffer. The swelling of her nose and the eruption on her face was punishment for some act which she had committed but which she could not describe. She begged me to put her in the cellar where no one could see her. At other times she would implore me to deny that she was my daughter. She would say, "You have four other girls and don't need me; make a servant out of me. I am no use to anyone; I should think you would all want me out of the way." When I was at home she would not talk very much, but whenever I went out she would begin with the other girls and talk to them by the hour about all such nonsense as I have just mentioned. We could not get her to do anything or to discuss anything or to look forward to doing anything.

About four months after we saw you, she went out with me one day to walk. We had a little store then and my husband asked me to leave a package at a certain house, the address being given in her presence. When we came near the house she said, "That is the number, that is the house over there." This was the first time she had taken an interest in anything for a long time. After walking some distance, we stopped to look at some pictures in a shop window. One picture, which particularly attracted her attention, was that of a bird, standing near a basket with a baby in it and four little girls around the basket, looking into it. She said to me, "Do you know what that is, mother? That is a stork; he has brought the baby." We then looked at a picture of Niagara and I asked her what she thought of it, and I remember she said it did not impress her very much, but she would like to see it. This was the first time she expressed a wish. One night soon after this my eldest daughter brought some work home and asked this girl if she would help her with it, as she was in a great hurry to get it out. She did not say anything, but the next day she got up early and began to work upon it and from that time she improved steadily, and in a month or so was able to go back to her work. Although she is peculiar and difficult to live with, on account of frequent outbreaks of temper, she has never had anything the matter with her since then. The girl that is sick at present thinks the friction that we have had at home with this girl probably had something to do with causing her own breakdown.

NEW YORK, February 16, 1907.

My Dear Madam:

I shall be very glad to see your daughter any day that you elect to bring her to me. You have given such a clear and explicit account of her illness that I am able to judge of its nature and say to you now what the outcome of it will be, more particularly as you have been thoughtful enough to tell me in some detail of your other daughter, who was treated by me a number of years ago. The disease that your daughter has is of the mind. If I were to say to you that it may properly be called a mild form of insanity, you might be alarmed and terror stricken. You know, however, from experience with your eldest daughter, that one may have a well-marked insanity and

recover. Therefore, you are not so likely to be frightened as one who has had no experience. Moreover, I am sure that you are not one of those foolish persons who have a latent, or well-defined, belief that insanity is a demoniacal possession or something of the nature of a disgrace. Disease is never a thing to be proud of, though it is at times difficult to be assured of this when you hear persons describing and discussing their symptoms at dinner parties and other public places. Disease of the mind is no more an admission of infirmity than disease of the body, and there is no reason why we should be more ashamed of it, or try to conceal it.

The technical name which we physicians give to the disease that afflicts your daughter is manic depressive insanity. I hasten to add that it is a very mild form of the disease, and that it will probably not progress to the degree that she will become mentally deranged, using these words now in the conventional sense.

It is only during the past few years that we have been interpreting aright patients such as your daughter. Many of them are still called cases of depressed neurasthenia, and many of them are believed to have some mysterious sort of dependency upon the specific sex functions. One of the signal contributions made to mental science in the closing years of the nineteenth century was the recognition of a mental disease whose symptoms displayed themselves in one instance by exaltation, excitement, and delirium and in another by depression, negation, and retardation. Formerly we spoke of them as mania and melancholia. Now we know that they are one and the same disease, which displays itself at one time by symptoms of exaltation, at another by depression. Another thing that we have learned about it is that the attack usually eventuates in recovery. In other words, the patient gets well, even though it cannot be said that the disease is wholly eradicated. The most important type of this form of mental disorder is that which your daughter has. She is what some would call a borderland case, but to my mind, she is a typical case slightly developed. She is of the kind that puts the physician on his metal to do something to prevent its development, and she is of the kind of which the institution physician knows little, because he rarely sees them in this stage. You have described the symptoms of the disorder so thoroughly that I shall not dwell upon them, but one feature that you emphasized interests me very much. It is the disparity between her employers' estimate of her work and her own. I have taken the trouble to inquire and they say she does her work very well. They value her services and they maintain they could not easily fill the place she has made for herself with them.

One of the earliest symptoms of the disorder is what might be called a morbid sensitiveness, or suspicion, that they are not doing their work well or satisfactorily. Another is that persons with whom they come in close contact, such as their fellow employees, recognize their unworthiness and hold aloof from them, excluding them from any participation in their amusements or confidences. Often these delusions antedate the lack of initiation and slowness of mental and physical action, which we physicians call psychomotor retardation, for a long time, and it is during this period that such unfortunate sufferers are often misunderstood. They are thought to be suffering from overwork, vapors, anemia, or "a kind of malaria." When in addition to such complaints there develop delusions of profound unworthiness which ramify from self-accusation of indescribable sins, to having bartered their soul, the suspicion is aroused that the matter is very serious. In reality it is in instances such as the two that you have had the misfortune to have had that the recognition of the true nature of the disease is so important.

Fortunately the appropriate treatment of your daughter can be carried out at home. The first thing that I wish to impress upon you is that you must be kind, tactful, frank, truthful, and patient with her. You must realize that she is ill; that the dearth of ideas which oppresses her really exists; and that the absence of spontaneous activity which she displays is genuine.

Unless you have some insight into her condition you are not the best person to help her get well. It is absurd for you to urge her to shake off her apathy, to pull herself together, to tell her that she imagines that she is worse than she really is, that she should amuse herself, etc. She has no more capacity to amuse herself or to be amused, than she has power of resolution, or the capacity to make decisions and abide by them. The mistake is so often made of dragging sufferers like your daughter to a theater, or other alleged place of amusement, of sending them to Atlantic City, of taking them to visit friends or relatives, that I ask you specifically not to do any of them.

I advise you to ask her employers to give her a vacation of two or three months. During this time try to increase her weight from fifteen to twenty pounds. To do this you should keep her in bed about two-thirds of the time, the remainder in the open air. If your house has a veranda put a couch upon it and have her lie there during the day. Surfeit her with milk and eggs, at least two quarts of the former to which a half pint of cream has been added, and a dozen or more of the latter. Don't bother her with solid food. If she asks for it let her have it. Get her to take some exercise each day, say a walk of two or three miles, and before she starts on this walk douse her with cold water, from a dipper, or slap her briskly with the end of a towel taken dripping from cold water. See that she has an adequate action of her bowels each day and if she gets "bilious" give her ten grains of gray powder in the evening followed by an aperient in the morning. You need not hesitate to repeat this in a fortnight. If her movements are inadequate, notwithstanding this, one-half a grain of cascara three times a day should be given. From your letter I infer that she does not suffer from insomnia. This is most fortunate, as sleeplessness is often a most rebellious symptom. Don't try to interest her or amuse her. Help her get well and she will do these for herself. Like the poet, such patients thrive on tranquil solitude and such society as is quiet, wise, and good. You have had an excellent lesson in this respect from your other daughter. Take care of her as solicitously as if she had typhoid fever, and you will soon have her well.

I am writing to Dr. —— of your city to ask him to go in to see her occasionally and encourage you to carry out these simple directions. When she gets well, keep her well. How is this to be accomplished, you ask? We must leave that for some other time.

Yours sincerely,

Vaccination in England.—It is stated that the duties of the public vaccinator are rapidly disappearing in many small English towns. The inhabitants avail themselves of the conscientious objectors' declaration act and therefore escape the vaccination of themselves and their children.

Correspondence.

FARM SANATORIA FOR THE TUBERCULOUS.

To the Editor of the Medical Record:

Sir:—Anent Dr. Huber's "Winning Fight Against Consumption," may I offer a suggestion to our wealthy philanthropists? It is that the next man who wants to leave twenty or thirty millions to charity endow a Tuberculous Insurance Society which shall fight the White Plague by buying farms which shall be equipped as sanatoria where the tuberculous may be treated and at the same time find occupation.

My conception of such a farm sanatorium is that it should be conducted on the plan of a Virginian estate in the days of slavery, *i.e.* raise everything it consumed and employ its own blacksmith, carpenter, wheelright, miller, weaver, etc. In other words, manufacture its own raw material for its own consumption and, as a reward for this work, care for and cure those consumptives who are too poor to pay even moderate insurance fees. These patients would correspond, in social rank, to the former slaves. The next rank, the overseer and yeoman class, would be composed of those who could pay the insurance fees; while those corresponding to the planter class would be the wealthy who could pay for luxuries and thus enable the organization to support more of the indigent.

If there were a number of such farms, the industries could be varied with the location. In the cold northern States poultry raising might be one of the chief occupations; in the west, cattle; in the far south, semitropical fruits; in Virginia and States similarly situated, apples and the small fruits, with vegetables for canning, might constitute a major occupation. The products could be exchanged between the different institutions and patients who did not do well in one could be sent to another. The principle of sick insurance, notably for consumptives, has succeeded so well in Germany that such a plan is no longer an experiment, except in so far as regards the various industries. As all of these are money-making occupations when conducted by individuals, there seems no good reason why they should not succeed even better under the auspices of a corporation.

I have not sought to give details of rates of insurance, etc., which would have to be calculated by a skilled actuary, but only to point out the salient features of a plan whose advantages appear to me obvious. We have such enormous accumulations of riches in our country that the sum of money needed, huge as it appears to a country doctor, is insignificant when compared with the wealth and proved generosity of some of our so-called plutocrats.

Gordonsville, Va. W. G. Christian, M.D.

OUR LONDON LETTER.

(From Our Special Correspondent.)

ROYAL SOCIETY OF MEDICINE—ADMINISTRATION OF SERUM BY THE MOUTH—SUPPORTS OF THE PELVIC VISCERA—GENERAL MEDICAL COUNCIL—OBITUARY.

London, June 5, 1908.

At the Royal Society of Medicine, on the 26th ult., the question of giving tuberculin by the mouth came up. Dr. E. C. Hort said he had given horse serum in 150 cases of various diseases, taking care that it was fresh and sterile. It should be taken immediately after meals. In acute diseases, as phthisis or pneumonia, he found it of little use. In hemorrhagic cases and ulcerations it was of value. In bacterial lesions it seemed to stimulate, repair, and inhibit the activity of the organisms.

Dr. Hector Mackenzie was satisfied that vaccine given by the mouth was a valuable treatment in staphylococci infections. But he was doubtful as to the value of tuberculin. In case of tuberculous glands he had known improvement follow the use of tuberculin by the mouth. He had not been impressed by its use in phthisis and did not regard the opsonic index as a feasible routine control in actual practice.

Dr. A. G. Auld thought the cases were not numerous enough to enable a conclusion to be drawn as to the value of the treatment, and suggested a possible relation between empyema in a case of pneumonia and the use of a pneumococcus serum.

Dr. Rolleston had given horse serum by the mouth, in gastric ulcer, and it stopped hemorrhage and relieved the pain as well as improving herpetic eruption of the mouth.

Dr. Lavis referred to the possibility of giving tuberculin in raw meat juice, if derived from tuberculous animals.

Dr. Vere Pearson spoke of eight cases; in three of genitourinary tuberculosis, two of them having pulmonary affection as well, he had seen some improvement. In a case of spinal caries the pain was relieved. He had two failures with horse serum for hemoptysis. In a case of phthisis with continuous fever for six months, the pyrexia ceased in three weeks under serum by mouth.

Another member spoke of horse serum locally after the mastoid operation.

In the Section of Obstetrics and gynecology Dr. R. H. Paramore challenged the statements of our anatomical textbooks as to the "Supports of the Pelvic Viscera," and said anatomical research would not settle the matter without concurrent investigation of the living processes of the body. He found no difference between condensations of subperitoneal tissue in different places and thought the visceral ligaments of the pelvis did not support the uterus. The lack of elasticity and the impossibility of yielding to pressure from above without stretching or of returning to a previous position after stretching, prevented the visceral connective tissue from fulfilling the requirements of the pelvis. He considered the abdominal and pelvic cavities as really one. In the living body they acted as antagonists to each other, and the outcome of simultaneous contraction was intraabdominal pressure.

Professor Paterson held that the structures comprising the pelvic floor were the chief factors in supporting the viscera, and any laceration or weakening of these structures predisposed to prolapse.

Mr. A. Keith said three structures are usually regarded as normal uterine supports, (1) the musculature of the floor, (2) the visceral ligament of the pelvic fascia, (3) the strong perivascular and perineural sheaths. It is not to the last the support is primarily due; they safeguard the vessels and nerves. A Hodge's pessary supports the uterus by keeping the vagina expanded and rigid, enabling the levator ani to get a hold on it.

Dr. W. E. Fothergill of Manchester maintained his previous teaching that the viscera were supported by the connective tissue intervening between them and the sides of the pelvis, the most important part of that tissue being that which formed the perivascular sheaths.

Dr. Hastings Tweedy of Dublin said Dr. Paramore had given them data which showed strong ligaments crossed the lateral fornices and could support the uterus in a normal position, and that when they were severed the cervix sagged downward, even though all the other uterine ligaments were uninjured. It was clear they kept the cervix tucked upwards and backwards. They suffer no greater strain than the liver ligaments and others similar. The levator ani essentially is the muscle which keeps the vagina from deformity and offers a counter force to the intraabdominal pressure, enabling the anteflexed uterus to lie between these forces with only slight aid from the ligaments. But if the cervix descends it cannot maintain the uterus in anteflexion, nor can it in retroflexion. A tear in the pubococcygeal fibers inevitably results in cystocele and rectocele, with slow descent of the cervix. Dr. Tweedy said he had never seen procedentia due to childbirth unless the cervix was torn, and his operative experience furnished him with further evidence of the importance of these ligaments.

Dr. Briggs of Liverpool argued on anatomical and clinical grounds that the viscera were supported by (a) the levator ani, (b) their dense pelvic fasciæ, (c) the perivascular and loose cellular tissue. The integrity of the supports did not depend on the ligaments as the integrity of a joint did not. Fascial structures were passive and maintained or restored by muscles. The widening of the linea alba during the later part of pregnancy was corrected in strong women after labor by the tonicity and reapproximation of the recti-abdominales. In operations for prolapse the restoration of these muscles and their fasciæ by extensive buried sutures should be the chief aim.

Dr. Alex. Macphail of Glasgow emphasized the distinct attachment of the levator ani to the vaginal wall, close to the cervix, and the close connection there of the pelvic fascia as important, but he thought the discussion showed a wrong tendency to assign support to one set of structures, excluding others. The via media was, he thought, the sound course from an anatomical standpoint.

Dr. M. Jones seemed to hold a similar view, and Dr. Griffiths said the pelvic fascia formed a continuous sheet of varying density and was the chief support, while the levator ani was put into action to resist special strains.

Dr. Inglis Parsons said procidentia had been known to

occur in virgins with an intact pelvic floor. Rupture of the perineum was often followed by prolapse, but not always. The ligaments in some women seemed to be strong enough to keep up the uterus without assistance from the pelvic floor, but when they were weaker this must help. He held that the intraabdominal pressure does not keep up the uterus, but is rather the chief factor in causing prolapsus.

The president (Dr. Spencer) said the section was indebted to the distinguished anatomists who had taken part in the discussion. He thought the supports were of a composite character, including atmospheric pressure, muscles, ligaments and fascia. To speak of intra-abdominal pressure was confusing, for it was really extraabdominal or atmospheric pressure—the "retentive power" of the abdomen of Matthews Duncan.

The work of the General Medical Council has continued, and most of it has been the hearing of cases of alleged misconduct. Anyone who has attended a sitting devoted to discipline must feel how unsuitable a body of this kind is to conduct such an investigation. Something like judicial proceedings might be anticipated, and there is an attempt to conduct the inquiries after the manner of a court of law, but it is rather unsuccessful. One aged practitioner's name was removed from the Register on a charge of covering an unqualified person, who was his son and had signed certificates for a school board for his father, who said he had seen the children. The chief evidence was that of two children, apparently about eight to ten, who were asked leading questions and answered yes. Also a blind man, who spoke of recognizing the voice of the accused. A competent barrister would have laughed at such "evidence." Some other names were removed from the Register, one of them on account of canvassing. This had lasted over several days, and the evidence brought forward was very contradictory, and lawyers on each side took up much of the time. The result is scarcely worth the enormous sum the sitting has cost.

Death has deprived the medical temperance cause of its most brillant leader, Dr. J. J. Ridge, M.O.H. for Enfield, and founder of the local hospital, who died on the 25th ult., aged 61. He was for twenty-one years physician to the Temperance Hospital, having been appointed on its foundation. He was also secretary to the Medical Temperance Society and editor of the journals devoted to the subject, of which he was so zealous an advocate. His position was so prominent in regard to the cause that when an international association to promote it was formed he was naturally appointed its first president by acclamation. Dr. Ridge was a student of St. Thomas's Hospital in 1864-8 and graduated at the London University, simultaneously in arts, science and medicine, taking honors in each. His writings and speeches on medical temperance in all its bearings are numerous and everywhere regarded as authoritative.

Surgeon-General Sir J. A. Hanbury died on Tuesday night at the age of 76. He obtained his first commission in 1853 and retired in 1892 after serving in China, Afghanistan and Egypt. He took part in Lord Roberts' march to Kandahar and was twice mentioned in dispatches in the Afghan campaign of 1878-80. He served in the Egyptian Expedition of 1882 and was again twice mentioned in dispatches, received the order of the Medjidieh and was promoted from the C.B. conferred in 1882 to the K.C.B.

Dr. A. Overton of Huddersfield was found dead in his bathroom on the 31st ult., having apparently died from heart failure. He qualified in 1883-4.

Dr. Dove McCalman, who practised at Oban for about twenty years and was the chief founder of the Cottage Hospital, died there on the 25th ult., in his sixty-fifth year. He was M.D., Glasgow, 1881.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

SMALLPOX—CHOLERA—MISBRANDED FOODSTUFFS—PERSONALS.

MANILA, P. I., May 2, 1908.

MANILA has recently passed through a small outbreak of smallpox, which has been more virulent than would naturally have been expected under the circumstances. A number of Americans who were not protected by vaccination died of the disease, and the mortality among Filipinos has been much higher than is ordinarily the case. In this latter class, the mortality seldom goes above 10 per cent., while in this outbreak it has reached as high as 50 per cent. However, when the conditions of Manila are contrasted with those existing in some of the large cities of China and Japan, the outbreak here is comparatively insignificant. It seems quite possible that the disease among Americans may be due to infection, which is perhaps imported in silks, curios, and other articles, which are constantly brought to the Philippines from China and Japan. The outbreak in Manila, however, again affords most striking proof of the thorough efficacy of vaccination as protection against smallpox. So far, no one has been attacked who was recently vaccinated. Those who have died had either never been vaccinated or claimed to have been vaccinated when they were children, but could present no scars.

The cholera, which, during January again assumed threatening proportions, has fortunately decreased much in both numbers and virulence, and at the close of the quarter it has again almost completely disappeared from the islands. There were a total of 203 cases and 167 deaths in the city of Manila and 806 cases and 628 deaths in the provinces during the quarter. It is believed that real progress has been made during the last few months in the study of the etiology of the disease. It appears probable that cholera has become endemic in the city of Manila, and that the outbreaks in the provinces are usually due to infection which comes from here, and that it frequently happens that Manila becomes reinfected from the provinces. It now appears that the cholera organism probably exists in the sewer system of the city and possibly at times in the water supply, and that the isolated cases which occur in widely separated sections of the city and have apparently no connection with each other, are due to infection conveyed by roaches or other vermin from the sewers and esteros to easily infected food, either by means of their feet or by their intestinal discharges.

From the foregoing it would appear that as soon as new water and sewer systems for the city of Manila are completed, the chances of cholera being entirely eradicated from the islands are very hopeful.

During the first three months of 1908 220 samples of foodstuffs were analyzed, and nineteen were rejected under the provisions of the pure food and drugs act. Forty-five others were misbranded, but were released after having been properly labeled. It appears that the percentage of rejections is rapidly decreasing, and there seems to be every desire in local business circles to comply with the law. The amount of good that has been done up to the present time is simply inestimable. Butters, canned goods, beverages, etc., which have heretofore contained enormous quantities of preservatives, and, no doubt, were responsible for much sickness, are now arriving without any added chemicals, and the manner in which they keep even in this tropical climate is most convincing evidence that the presence of preservatives was unnecessary.

Dr. Richard P. Strong, of the Biological Laboratory, Bureau of Science, who has been absent for nearly a year on an extensive trip to the United States, Great Britain, Germany, and India, has returned to the Philippines, and again taken up his work in the laboratory.

Dr. A. J. McLaughlin, Passed Assistant Surgeon, United States Public Health and Marine Hospital Service, has just arrived in the Philippines, and will probably accept the position of Assistant Director of Health of the islands.

Dr. E. C. Shattuck, who for a number of years has been the physician in charge of Bilibid Prison, has recently resigned from that institution and returned to the United States, where he expects to take up the practice of his profession.

Progress of Medical Science.

Boston Medical and Surgical Journal, June 11, 1908.

Composition of Large Curds in Infants' Stools.—F. B. Talbot presents the results of our extensive series of observations. He states that large curds in infants' stools are composed of some proteid (probably casein or one of its derivatives), which on coagulating entangles the milk fat in its meshes. The amount of fat in the curds depends on the amount of fat in the milk, and as this fat increases, it replaces the proteid in the curd. The presence of large curds which has been taken by some investigators to indicate an increase of gastric HCl, can with as great probability be interpreted as indicating a lack of HCl.

Modes of Infection in Tuberculosis.—S. von Ruck discusses the relative frequency of tuberculous infection and reviews the various opinions extant on the subject. He says that the presence of the bacillus in the dust of

the air and its deposition when inhaled in the air passages remained still to be proven, after the presence in sputum of a corpuscular element had been proven. This danger from dust, however, was definitely determined by Cornet. So far as the danger from droplet infection is concerned v. Ruck does not attach very great importance to it as a mode of infection. The danger is indeed not to be minimized, but such droplets do not remain suspended indefinitely, and most of them gravitate immediately. As regards ingestion of bacilli in food, the author says it is of course possible that food may serve as a medium for infection with the bacillus of human type, but the probability that enough bacilli are introduced by its contamination with infectious dust or droplets in its preparation by consumptives, or that flies are likely to play an important part by transferring tubercle bacilli from sputum to food, would seem slight, and especially so if alimentary infection of the human subject conforms to the experience we have with the lower animals, in which enormous quantities of tubercle bacilli must be fed to produce a positive result. Quite otherwise is the case for primary infection of the digestive tract from the inhalation of infectious dust and its deposit in the pharynx or mouth whence it is swallowed with the mucus and saliva and with food and drink.

New York Medical Journal, June 13, 1908.

The Modified Blood-clot in Mastoid Surgery.—S. McCullagh describes this method in full and reports three personal cases with excellent results. He contends that this method has passed the experimental stage, and makes a plea for its more extended trial and a report of results obtained, especially unfavorable ones, so that the limits of its application may be more clearly defined. There is still room for experiment in this particular, but the writer feels that within a very short time packing of the mastoid wound in uncomplicated cases will be considered as poor surgery as a mere opening of the antrum without removal of all diseased tissue, and as justly so. He strongly urges that one or two failures be not allowed to deter from a repetition of the trial, as there is no reason why results identical with those reported should not be obtained by any surgeon who looks carefully after his technique.

An Analytical Study of Six Hundred Cases of Anesthesia.—H. L. Springer presents the following conclusions: (1) Ether and chloroform are apparently the most satisfactory anesthetics. (2) Ether is safer than chloroform, but under certain circumstances, when chloroform is desired, the risk may be materially lessened by giving oxygen with it. (3) The average patient was ten minutes becoming anesthetized, and it required two and one-half ounces of ether to obtain this condition. (4) The average length of time of the operation was one hour and a quarter, and it required five and one-half ounces for this time, or, in other words, about six ounces were used during the first hour, and about three ounces for the second hour. (5) While most of the evidence at hand points in favor of vomiting being due to a centric disturbance in ether anesthesia, these records show a close relationship between excessive secretion of mucus and vomiting. (6) In the treatment of accidents most dependence may be placed upon ammonia in the form of inhalation and oxygen. (7) The more remote consequences of anesthesia, such as status lymphaticus, acetonuria, acidosis, hepatic toxemia, etc., must not be lost sight of, and general anesthesia should be preceded by a thorough examination of the heart, lungs, and kidneys.

Pruritus Ani.—R. D. Mason discusses this affection with special reference to its cause and treatment by the *x*-ray. In his opinion the disease is caused in the great majority of cases by an unnatural discharge of moisture about the parts. In chronic cases the cause may have disappeared, or if present its removal may not end the trouble, as the skin has become so thickened and thrown into folds that only its destruction or removal will effect a cure. The irritation that causes the catarrhal discharge may be internal or external hemorrhoids, chronic proctitis, ulceration, fistulas, especially the small submucous variety with no external opening, pin worms, hard, dry feces which irritate the parts, the lodging of irritating matter in the so-called rectal pockets, the growth of small polyps, or, in fact, anything that will cause an irritation. The *x*-ray treatment is of especial service in the old chronic cases in which the skin is thickened and eczematous. His method is as follows: With a soft tube he gives an exposure of ten minutes' duration twice a week, until he learns how the skin is going to stand it. If there is no irritation he gives three treatments a week until a brown discoloration appears. All treatment is then stopped until this goes away, when treatment is resumed until it reappears. This is usually enough, but, if possible, he thinks it is well to give an occasional treatment after this as a matter of precaution. The results are most gratifying, but it is too soon to predicate their permanency with absolute certainty.

Journal of the American Medical Association, June 13, 1908.

Indolaceturia.—C. A. Herter finds that indolaceturia, or the presence of indolacetic acid in the urine in appreciable amount, is not a rare occurrence, and is usually associated with pathological conditions in the intestinal tract. It is detected by the rose-red urosein color reaction on the addition to the urine of an equal volume of concentrated hydrochloric acid with, if necessary, one or two drops of a 0.1 per cent. solution of potassium nitrite. It is necessary that the urine should contain a suitable oxidizing agent which is usually furnished by the nitrites formed by the action of nitrifying bacteria in the urine, hence a urine in which the urosein reaction fails in a fresh condition may give it without the addition of a nitrite after standing 24 or 48 hours. Indolaceturic acid to the amount of from 0.001 to 0.01 per cent. in the urine is readily shown by this method: a lesser amount can be detected by making an ethereal extract. Urines containing a large amount of indican develop indigo by oxidation with nitrites so as to obscure the reaction dependent on indolaceturic acid. The indigo that is separated may advantageously be removed from the solution by shaking with chloroform. In a few cases he has seen the mere addition of concentrated hydrochloric acid to the urine of children suffering from severe gastroenteritis, followed by the appearance of an intense greenish-blue or blue color, due to the presence of indigo. In such cases the excess of hydrochloric acid has always been great. The most pronounced cases of indolaceturia observed by Herter have been in urines from patients with diabetes, typhoid fever, or chronic enteritis. He has also observed a strong reaction in some cases of jaundice, and he believes that small quantities of indolaceturic acid are present in chronic digestive disorders. Other observers have noted the urosein reaction in pulmonary phthisis, chlorosis, osteomalacia, nephritis, carcinoma, gastric ulcer, vomiting of pregnancy, and perityphlitis. He thinks it clearly desirable that routine examinations for indolacetic acid should be made, and that a record should be kept of the relationship existing between the intensity of the reaction for indolacetic acid and the intensity of the reaction for indigo blue. Like indol, indolacetic acid is the result of the decomposition of tryptophan in the intestine, and there appears to be a sort of reciprocal relation between them, each being apparently exclusive of the other to a certain extent. The reason for this apparent selective action is not clear, but Herter thinks that the careful study of the symbiotic action of bacteria on this substance may in time reveal it. The excessive ingestion of proteids seems to be connected with the formation of indolaceturic acid, hence its frequency in diabetes. While it is not Herter's intention to discuss the pathological consequences of indolaceturia, he suggests, since it is not paired in the organism like indol, skatol, and phenol, it may have an opportunity to act directly on the nervous system when absorbed in considerable quantities. Its study is, therefore, desirable.

The Larynx and Tabes.—W. Freudenthal gives the results of his examination of the patients at his command in the Montefiore Home. The general conclusions are summed up substantially as follows: 1. The larynx is frequently the seat of serious affections in tabes. 2. Laryngeal crises are so often met with that they are almost of pathognomonic significance. 3. Unilateral and bilateral paralysis of the postici are the affections *par excellence* in tabes, but a unilateral paralysis of the recurrent nerve, often with the vocal cord in a hyperabducted position, as mentioned by Harland, is nothing uncommon. 4. The abductor fibers of the recurrent laryngeal nerve are affected primarily in tabes as well as in multiple sclerosis. 5. The voice in tabetics is often not changed, in spite of extensive lesions. 6. In order to reach a positive diagnosis all these cases have to be observed for a considerable period. 7. In multiple sclerosis there is frequently a subjective dyspnea that cannot be explained by the objective signs.

Kidney Excretion.—Edwin Beer reports seven cases which he thinks demonstrate that a diseased kidney may so affect the excretory activity of the other kidney as to mislead all who rely too much on our present functional tests. This is exclusive of the usually temporary and probably reflex, oliguria or anuria of the second kidney in obstructive conditions of the diseased side, and the degenerative changes or so-called toxic or sympathetic nephritis induced by the disease of the other kidney. In the reported cases he used the phloridzin test which, in normal cases causes glycosuria, and found that the diseased organ so influenced the other that the latter failed to excrete sugar so long as the diseased kidney remained in the body.

After nephrectomy the reaction was normal in three cases and after nephropexy in one. Two of the patients died, and in one the operation failed to relieve the condition on the diseased side, but in all three the insufficiency of the other kidney indicated by the phloridzin test did not exist. These cases point to but one conclusion, *i.e.* that a diseased kidney may so influence the second organ as to make it appear gravely diseased. Somewhat similar observations have been reported by Rovsing and Kapsammer; and Albarran, Koranyi, and C. Wilbrecht have noticed the improvement in function of the second kidney following relief of diseased conditions in the other. From all the facts Beer concludes that there is probably a factor underlying functional tests that has not been sufficiently emphasized in the past. He does not discuss the question whether this influence is toxic or reflex, or both combined, but until it can be estimated, he says, all functional tests of the excretory activity of a kidney are misleading.

Adenoid Infections in Adults.—Alice G. Bryant calls attention to the streptococcic infections of the pharyngeal adenoid tissue in adults, and the importance of "direct examination of the postnasal and nasal regions to settle any debated question when septic conditions are present that cannot be attributed clearly to some one definite region of the body." The advisability of having bacteriological examinations made of these regions in such cases is also suggested. Three cases are reported out of ten which have come under her observation. The ages ranged from 30 to 50 years. In all there was a pronounced streptococcic inflammation of the postnasal adenoid tissue, with mild septic symptoms which disappeared with the clearing away of the broken-down tissues, disinfection, and appropriate general treatment.

Eyestrain and Tuberculosis.—Recognizing the frequency of opportunities for tuberculous infection and its prevalence as shown by post mortems, F. Parke Lewis reasons that some other element than that of infection must influence the mortality from this disease, otherwise the world would become a mortuary from this cause alone. He includes eyestrain among these factors, and claims that it can so derange the nervous functions as to produce gastric and intestinal derangements that can so lower the vitality and diminish resistance as to retard recovery from pulmonary tuberculosis. The essential propositions of his thesis are summed up as follows: "1. The inadequacies of focus or the motility of the eyes may give rise to and be responsible for disturbances of digestion and assimilation. 2. Lowered vitality, especially in the neurotic, predisposes to tuberculous infection, and as superalimentation is of first importance in effecting a cure, an exact and complete examination of the refraction and of the motility of the eyes should constitute an essential part of the examination of every patient suspected of having the disease. 3. If these are the views of the ophthalmologist on this subject they are of such vital importance to a vast number of sufferers that resolutions to that effect should be adopted and the recommendation made to this Association that it is the sense of the members of this section that no examination for tuberculosis can be considered complete until it shall include the refraction and the motility of the eyes."

The Lancet, June 6, 1908.

Antirabic Serum, and the Rabicidal Properties of the Serum of Patients After Undergoing Antirabic Treatment.—The conclusions of an elaborate paper by D. Semple are as follows: (1) By immunizing horses with fixed rabies virus it is possible to prepare a serum having well-marked rabicidal properties. Normal horse serum is devoid of these properties. (2) The rabicidal properties of this serum can be tested by mixing it with fixed virus and subsequently using the mixture to inoculate susceptible animals, such as rabbits, subdurally. (3) The indications for the use of such a serum would seem to be as an adjunct to the ordinary method of treatment in severely bitten and late cases. In severely bitten cases coming early for treatment it might also be injected into the wounds and the tissues in their vicinity. (4) The serum of patients after undergoing a course of antirabic treatment also gives evidence of containing rabicidal substances and the presence of these substances can be demonstrated in a manner similar to that mentioned in Conclusion 2. Normal human serum is devoid of these properties. (5) The rabicidal substances in the serum of a patient after antirabic treatment are a possible index of the amount of immunity conferred and the efficacy of treatment. (6) Prolonged treatment confers a higher degree of immunity, as judged by the rabicidal effects of the serum or fixed virus, than treatment extended over a shorter period of time. (7) The blood of a patient suffering from hydrophobia fails to infect rabbits when inoculated subdurally. (8) The serum of a patient in the early stages of hydrophobia is capable of prolonging the incubation period for fixed virus when mixed *in vitro* and inoculated subdurally in rabbits.

A Case of Indicanuria.—G. N. Montgomery reports one case of interest from (1) the deep color of the urine, (2) the fact that it was colored when passed, and (3) the fact that the patient appeared to be in good health. The history is as follows: Patient is a woman 32 years of age, hospital servant. Her general health is good except that she suffers at times from slight attacks of "petit mal." She says that she often has "trouble with her bowels," having to take pills sometimes to obtain an action. On a certain day, having been constipated for several days, she took a pill of colocynth and hyoscyamus. This was her usual aperient. On the following day the bowels were relieved twice, and she experienced some abdominal discomfort during the day. On this date the patient noticed that the urine was altered in color, and a specimen was brought to me. The color varied in density during the following three days, when it became much lighter, and on the next day it was quite normal. During these days the patient did her work as usual, and felt quite well, except that she felt a little worried about the urine, which was colored when passed. She had never passed urine like it before, and has not done so since. The urine was of a dark blue-green color, with a specific gravity of 1015; it was acid; there was no albumin or sugar. On adding a little chloroform to some urine in a test tube the chloroform became a blue color. When some urine was added to some boiling nitric acid a bluish ring was seen at the junction of the two liquids. There was no history of eating or drinking anything that she had not been accustomed to or of using carbolic acid in any form, or methylene blue.

Suprarenal Hemorrhage in an Infant; Its Relation to Hemophilia.—B. G. Morrison was in attendance at the birth of a full-term male child born after a normal labor. The umbilical cord, a thick one, was tied three times in succession on account of bleeding at the seat of ligation. This was finally checked and the child did well till the ninth day, when it became weak and jaundiced. In a few days more bright red patches appeared on the chin and later on various bodily areas. Fever and slight convulsions came on, and the child died on the twentieth day. Autopsy revealed a dark, slate-colored left adrenal. Opened *in situ*, it collapsed at once and emptied its fluid contents into the abdomen. On examination it appeared to be converted into a blood sac, was very soft, and partly torn in removal. There were no signs of inflammation spreading up from the umbilicus, and the umbilical cord inside the abdomen was small, pale, and evidently not diseased. The brain was not examined. The microscopic report was as follows: "The right suprarenal shows no abnormal appearances. The left suprarenal is much broken up, but there are the remains of hemorrhage in its medullary substance, both in the form of extravasated corpuscles and as granules of pigment. The condition is probably the result of strain, and not of disease." The author says that the case is typical of hemorrhage into the adrenal medulla, and its character was verified by the necropsy. It appears to him that its chief interest and significance depend upon those earlier evidences of failure of the vasotonic function of the medulla which have been described; the signs of a hemophilic weakness, the general atony, the slight preliminary purpura, and increasing lassitude which culminated in the final purpuric explosion, nervous and general collapse. It appears as if there had been present at birth, or possibly before it, in the medulla, some premonitory congestion or slight hemorrhage, followed by a sudden final apoplexy, a condition of things which finds its counterpart at the opposite extreme of life in the cerebrum. How far hemophilia is dependent on adrenal inadequacy remains to be proved, but the present case is suggestive in this connection. There was no family history of hemophilia.

British Medical Journal, June 6, 1908.

Large Thymus; Sudden Death.—D. F. MacIntyre was called to a child, found dead on arrival. It was three months old, nursed well in the evening, but early the next morning died suddenly in a convulsion. Autopsy revealed a large thymus extending nearly the whole length of the sternum and adherent to the pericardium and pleura on both sides. It extended back to the vertebræ and seemed to occupy a large part of the thorax. The heart and lungs were healthy, but displaced by the thymus. Liver and spleen were enlarged, the former noticeably so. Stomach and intestines were normal. The left kidney was somewhat enlarged, as were both adrenals. The thyroid gland was slightly enlarged. The brain was rather soft; the pineal gland was enlarged. Death was doubtless due to pressure by the enlarged thymus on the pneumogastric.

Plastic Resection of the Breast and Its Bearing on the Preliminary Incision of Breast Tumors.—C. H. Whiteford's conclusions are as follows: (1) Every breast tumor should be incised prior to its removal. The surgeon, who, in performing a radical operation for supposed malignant disease of the breast, neglects the elementary precaution of incising the tumor as a means of either confirming or disproving the diagnosis, runs the risk of finding himself in the unenviable position of having performed Halsted's or some equally extensive operation for a simple tumor, such as adenoma or abscess. (2) The exploratory incision should not be made through the skin which overlies the tumor. An incision made into the tumor through the overlying skin, in the event of the tumor proving nonmalignant and needing only local removal, results to a certainty in a scar and probably in a depression. This scar, or scar plus depression, if situated in the upper half of the breast, interferes with the wearing of a low-necked dress. (3) For exploration of, and if innocent for removal of, tumors situated in the upper hemisphere of the breast, the incision and method of Collins Warren should be employed, because, in the event of the tumor proving innocent and needing simply local removal, this method prevents a disfigurement which, to a sensitive patient, is distressing and, surgically, is unnecessary.

Berliner klinische Wochenschrift, June 1, 1908.

Pepsin in the Urine.—Wilenko studied the excretion of pepsin in the urine, using a modification of the method of Jacoby and Solms. In every case he worked with twenty-four hour specimens, and compared the quantities obtained with those secreted by the stomach. The excretion of pepsin by the urine was found to vary from day to day in a healthy person without any apparent connection with the diet. In examining patients with diseases of the stomach it was found that the pepsin of urine depended in the quantity of excretion not upon the amount secreted by the stomach, but upon the amount taken up by the lymph and blood-vessels. Some of the experiments suggest the existence of a pathological condition, in which the mucous membrane had lost the capacity of secreting pepsin into the cavity of the stomach, but yet retained the capacity to supply the body fluids with it.

Complement-binding Substances in the Urine of Syphilitics.—Blumenthal and Wile have examined fifty urines, forty-one of which belonged to syphilitics, in an attempt to decide whether the substances responsible for Wasserman's specific serum reaction in syphilis were excreted by the urine. The results were controlled by a parallel examination of the blood for the same reaction. Of the forty-one urines of the syphilitics thirty-one gave a positive reaction, analogous results being obtained with the blood of the same patients. In six cases both results were negative. In three cases the serum gave a positive reaction, while the result with the urine was negative; in two cases the serum gave a negative result and the urine a positive one. Of the nine control cases the results were negative for both serum and urine in eight, while in a case of scabies the reaction with the serum was negative and with the urine slightly positive. The reactions with the serum were more marked in the majority of the cases. The authors consider it proved that the substances found in the serum may frequently appear in the urine, but are not ready to say how far such examination of the urine may help in the diagnosis of syphilis, the number of cases not being large enough for a final judgment.

Münchener medizinische Wochenschrift, June 2, 1908.

Spirochetes in Mouse Tumors.—Deetjen found spirochetes in all strains of the tumors of mice studied in the Heidelberg Institute for Cancer Research. The examinations were made for the most part with fresh specimens. The blood was also shown to contain these organisms when special illumination of the microscopic field was used. The spirochetes have motion in fresh preparations, and for some twenty-four hours they retain their corkscrew-like form. After that they assume another form which is much harder to see. The smear preparations are stained red with Giemsa's stain, the organisms being one and a half to five microns long and showing one to five turns. Flagella could be demonstrated in many specimens. In sections the spirochetes were easily shown by the Levaditi method. They were especially abundant in the connective tissue just beyond the tumor. One series did not show the presence of this organism, and the author concludes that it can have nothing to do with the growth of the tumor. No spirochetes were found in six cases of carcinoma in the human beings, nor in the case of a sarcoma of a rat. Deetjen thinks that the spirochetes seen by Gaylord, Borrel, and others may have been identical with the organisms observed by him. While denying direct etiological importance to these structures, he considers that they stand in some close relation to the appearance of the new growths.

Histological Changes in Pernicious Anemia.—Schatiloff has examined the organs from four cases of pernicious anemia, using the most modern stains, such as Giemsa-Romanowsky, May-Grünwald, etc. His results corroborate the findings of Meyer and Heineke. In all four cases the spleen showed myeloid hyperplasia; in one case the lymph nodes showed a similar picture, though of a lesser extent; the livers showed no such changes. Special attention was given to the changes in lymph nodes, and a hyperplasia of the lymphatic tissue was never seen. Indeed, the lymphatic follicles of the spleen appeared diminished, the liver and the bone marrow showing no lymphatic nodules whatever. A pernicious anemia can never, therefore, pass into a leukemia, as has been suggested. Cases interpreted in this way were probably in the aleukemic state of leukemia. In the bone marrow the author frequently found nongranular cells, probably myeloblasts; megaloblasts and megalocytes were also frequently met with.

Deutsche medizinische Wochenschrift, May 28, 1908.

Early Operation in Cholecystitis.—Riedel says that the ideal treatment of acute cholecystitis of the graver type should be analogous to the treatment of appendicitis. The gall-bladder, with the gallstones, should be removed, the operation at this stage being less difficult than later, when adhesions are formed and the condition of the patient is made worse by the chronic disease. Early operation prevents the possibility of perforation of the distended gall-bladder, as well as the dropping of a stone into the common gall-duct. He operated upon thirty-two patients in their first attack, and lost only those patients who suffered with such serious complications as thrombosis of the aorta, double pneumonia, thrombosis of the portal vein, etc. Light cases of cholecystitis should be treated conservatively until the diagnosis is made sure of, and then operation should be advised, as the danger of a severe attack is always present.

Local Anesthesia in Prostatectomy.—Lanz says that the use of a catheter in prostate hypertrophy is contraindicated, for in the long run it always leads to infection of the patient. Transvesical prostatectomy is the best operation for the condition; under lumbar anesthesia it is no more dangerous than catheterization, and leads to a radical cure of the disease. In selected cases the operation may be performed in two stages, and in very old or weak patients the second part, the shelling out of the prostate, may be done without any anesthesia. In three cases of the author the procedure was almost painless. In eight other cases the prostate was removed at one operation.

Professional Gratitude.—There dwells in Bombay a medical man who takes an altogether too liberal view of the claims of gratitude which his patients have upon him. He does not feel satisfied with personally assuring them of his sensibility of their friendly support, but has let his feelings on the subject overflow into the columns of a native paper published in the Gujarati dialect, his effusion curiously enough being headed by a portrait of himself with a stethoscope prominently displayed. We are indebted to a correspondent for a translation of this precious thanksgiving, of which we have space to give only a few extracts. "Dr. —— hereby thanks his thousands of patients for the good feeling they showed and the blessings they poured on him during his last illness of typhoid fever." (Here follow details of the enormous amount of work which brought this illness on him.) "I hereby thank all those of my patients in Bombay as well as in other countries who at that time expressed their good wishes and blessed me. . . . At the same time, during the typhoid illness, a very sad and imaginary rumor that my death had taken place, first propagated by some enemy of mine, spread very rapidly all over India, so that many people from Bombay, as well as outside, owing to the good feelings they had toward me, came to my place to learn the truth, and hearing that the rumor was false, returned, showing their scorn for the spreader of the false rumor and blessing me. And Parsees, as well as people of other communities, had ceremonies performed for my recovery."—*The Lancet.*

Book Reviews.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, England, Honorary Professor of Medicine in the Johns Hopkins University, Baltimore, Formerly Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and of the Institutes of Medicine in McGill University, Montreal, Canada. Assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Volume III. Infectious Diseases (Continued). Diseases of the Respiratory Tract. Illustrated. Philadelphia and New York: Lea Brothers & Company, 1907.

The third volume of this system opens with an interesting chapter by Col. David Bruce on a disease American physicians have no opportunity of studying—Malta or Mediterranean fever. The author believes that in Malta at least nine-tenths of the cases of the disease are due to the use of milk from infected goats, and that there is good prospect of the malady being entirely driven out by proper preventive measures. The succeeding chapter is on another exotic disease, beriberi, and is written by Dr. Maximilian Herzog, whose observations in Japan and the Philippine Islands lead him to the view that the disease is not caused either by any of the dietetic factors alleged in such numbers, nor by the coccus isolated by Okata and Kokubo, though it probably is an infectious malady. Dr. M. Ravenel contributes the three chapters on anthrax, rabies, and glanders which are satisfactory expositions of these subjects, though in discussing the treatment of anthrax the immobilization method, by which results have been obtained comparable to those of radical surgical procedures, might be deemed worthy of mention. Tetanus has been allotted to Dr. James M. Anders, the gonococcus infections—a subject whose importance appears to be steadily growing—to Dr. Rufus I. Cole, and leprosy to Dr. Isadore Dyer. The succeeding five chapters on tuberculosis are without doubt the most important in the volume and deserve the highest praise. The first of these, in the history and etiology, by Dr. Edward R. Baldwin, and the last three in the symptoms, diagnosis, prophylaxis, and treatment by Dr. Lawrason Brown are fitting exponents of the admirable work being done at the Saranac institutions, while Dr. MacCallum's essay on the pathology is also excellent. The chapter on syphilis by Dr. Osler and Dr. John W. Churchman is of course stamped with authority. Part one of the volume closes with a discussion by Dr. Thomas R. Boggs of the infectious diseases of doubtful nature such as febricula, glandular fever, etc. The second part of the volume is devoted to diseases of the respiratory tract, beginning with a chapter on the mechanics of respiration by Dr. Thomas R. Brown. This is followed by one on the nasopharynx, pharynx, and tonsils by Dr. Francis R. Packard and by one on hay fever by Dr. W. P. Dunhar in which that author presents his well-known views on the etiology, and the results in the serum treatment, of this disorder. Dr. H. S. Birkett writes on the larynx, Dr. A. McPhedran on the diseases of the bronchi, Dr. Hobart A. Hare on those of the lungs, and Dr. Frederick T. Lord on the affections of the pleura. Chapters on pneumothorax and the diseases of the mediastinum by Dr. Walter B. James and Dr. Henry A. Christian respectively close the volume, which is well in conformity with the standard of its predecessors.

Christian Science, The Faith and its Founder, by Lyman P. Powell, Rector of St. John's Church, Northampton, Massachusetts. New York and London: G. P. Putnam's Sons, 1907.

For that class of people to whom facts prove nothing and whom evidence does not convince, this singularly fair and honest book will have been written in vain, but to all others its conclusions must surely be invincible. Its writer has not only availed himself of all possible sources of information, but has also taken the trouble personally to verify these sources. He acknowledges the good in Christian Science, but points out to his readers that "the same good is to be found in all other religions and therefore asks for no special emphasis, while the evil is distinctive and needs analysis and publicity to make it evident." This evil the author attacks in three separate indictments. First, that when members of any Christian Church turn to Christian Science, they usually turn away from historic Christianity. Second, that there are in the theory of Christian Science certain structural weaknesses which may be easily overlooked by people unschooled in philosophy, theology, or science. Third, that the answers of the accredited exponents of the movement to the criticisms of outsiders satisfy none save Christian Scientists and such others as read carelessly and think loosely. These several indictments are driven home with the masterly precision of the clear thinker and trained scholar. The medical profession, naturally, finds the psychology of Mrs. Eddy herself less of a problem than do the laity, but Dr. Powell proves himself fully equal to it, and the chapter headed "The Founder of the Faith" is as entertaining as an analytical novel. Although the archetypical neurotic, plus keen business instincts and an iron will, she is also a woman, old and frail, and for all its ruthless dissection the book has no unkindly word for her as such. One could heartily wish that this volume, together with Miss Milmine's articles published by McClure, may be considered a final summing up of this vexed question, for all clear-headed people.

The Diagnosis and Treatment of Pulmonary Tuberculosis. By Francis M. Pottenger, A.M., M.D., Monrovia, California. Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California; Professor of Clinical Medicine, Medical Department, University of Southern California; Chief of Medical Staff of the Helping Station of the Southern California Anti-Tuberculosis League, Los Angeles, Cal.; Fellow of the American Academy of Medicine; Member of the American Climatological Association; Member of the American Therapeutic Society; Corresponding Member of the International Anti-Tuberculosis Association, etc. New York: William Wood & Co., 1908.

In this volume the author essays to give a full discussion of the early and late diagnosis of pulmonary tuberculosis as well as of the treatment in the light of modern studies in immunity. In the section on Early Diagnosis will be found not only a discussion of the clinical signs and symptoms, but the various methods employed in diagnosing the disease, including special methods used by the author. Among the latter is the elastic tube percussion method, which has no doubt in his hands proven useful, but which would, we fear, in the hands of the general practitioner prove of little service as an aid to diagnosis. New instruments and methods are worthy of trial by experts, but what is needed more by the nonspecialist are adequate training and practice with those already in our possession.

The various methods of treatment and their underlying principles are discussed and it is of interest to note that the author has taken a rather decided stand against the prevalent fashion of over-feeding and hypernutrition. He says: "If we were to discover a scientific dietary for people in health, I do not think it would be far from that required in treating tuberculosis." The section on specific treatment deals with the various bacterial products, also the various theories as to the action of tuberculin and the allied substances. Statistics from various sources are given bearing on the different phases of the subject. A brief sketch is devoted to Bier's hyperemic method.

We miss in this work a full discussion of certain subjects of recent interest, such as the conjunctival and cuticle reactions, but the book satisfies many of the demands of popularity in that it is concise and of convenient size.

Injuries of Nerves and Their Treatment. By James Sherren, F.R.C.S. Eng., Assistant Surgeon to the London Hospital; Surgeon to the Poplar Hospital for Accidents; late Erasmus Wilson Lecturer, Royal College of Surgeons. New York: William Wood & Company, 1908.

The author states in his preface that his manual is intended as a guide to the examination and treatment of cases of nerve injury; and, while not claiming that it is an exhaustive account of the subject, he believes that it includes all that is essential to this end. The material used is taken largely from papers previously published in *Brain* (with Dr. Head), and in the *British Medical Journal, Clinical Journal*, and the *Lancet*. The method of production of nerve injuries is first described, then the various symptoms resulting from complete and incomplete division of a nerve, differential diagnosis, treatment, and methods of recovery. The examination of the patient is carefully detailed; the results of Dr. Head's recent investigations on sensation are utilized; and, for muscle testing, Dr. Lewis Jones's book on "Medical Electricity" is frequently referred to. Very little further reference is made in the book and it would seem as though the work of certain American investigators in nerve palsies (Frazier and Spiller, Clark and Taylor, and others) had not been given full credit. The entire work, however, abounds with carefully detailed and reliable diagnostic hints. A possible criticism might be that actual operative technique could have been more fully explained and illustrated.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-ninth Annual Session, Held in Chicago, June 1, 2, 3, 4, and 5, 1908.

(Special Report to the MEDICAL RECORD)

(*Concluded from page* 1056.)

SECTION ON OBSTETRICS AND GYNECOLOGY.

Wednesday, June 3—Second Day.

The Preparation for and After-treatment of Abdominal Section.—Dr. H. T. BYFORD of Chicago presented this paper. Although there was a great disparity of opinion on these points, the author thought that the tendency of the present day was toward simplicity. The amount of preparation depended on the patient. Thus, an emaciated woman, with bleeding from a uterine tumor, who had traveled a long distance to get to the hospital, would require from a few days to a few weeks of preparation, while a strong young woman who entered the hospital for some slight vaginal operation would require almost none. These examples showed the futility of trying to fix upon some one routine treatment which should be applicable to all cases. The same might be said in regard to the after treatment. Each case must be treated on its own merits.

Dr. D. H. CRAIG of Boston agreed that there should be no routine preparatory treatment. As to post-operative nourishment, the patient's own desires should be the guide to the amount of food allowed. He had also followed the same rule in allowing patients to leave the recumbent position. This freedom was allowed, however, only when there was no actual physical reason against it.

Dr. HALL of Cincinnati thought that patients should be put into the best possible physical condition before they were subjected to operation.

The Care of Patients after Abdominal Section—Dr. C. C. FREDERICK of Buffalo believed that it was unwise to allow patients to assume the upright position in less than sixteen to eighteen days after an abdominal operation. His reasons were that the liability to hernia was greatly increased by curtailing the length of time spent in the recumbent position. He thought, too, that most patients were in a state of reduced bodily vigor at this time and that they really needed a rest of two or three weeks. Of course, this did not hold true for robust people operated on for some acute condition.

Dr. H. J. BOLDT of New York did not believe that a routine could be settled upon which would be suitable to all cases. He had been doubtful about letting these patients get up early in their convalescence until he had tried the experiment and had seen the beneficial results which always followed. Hernia, he thought, was not due to early getting up, but rather to the old method of suturing. He was positive that an early return to the upright position and freedom in diet, if they were warranted by the patient's physical condition, would invariably afford an earlier and a better convalescence.

Dr. RIES of Chicago said that he had tested early mobility in over a thousand cases of abdominal section and had not yet seen a hernia result in any case where the abdominal wall had been properly sutured and where union had taken place by first intention. Among other advantages, the most important were that pulmonary complications were almost unheard of, thrombosis and embolism were rare, catheterization of the bladder became unnecessary, evacuation of gas from the stomach and bowels was easier and freer, and the improvement in the appetite and in the general condition was most remarkable.

Dr. AUGUST MARTIN of Greifswald, Germany, thought that patients should be allowed to move about as soon as they liked. He did not object to their sitting up on the third or fourth day, or getting out of bed by the end of the first week. He would not really object to their getting out of bed even earlier than this. However, he did not hurry them, rather allowing them to follow their own inclinations. Post partum cases he did not keep in bed as long as he did formerly. Here, of course, the problem was a quite different one, because of the condition of the uterus. The time which he advised them to stay in bed depended upon whether they were able to do nothing after getting up or had to go back immediately to their domestic duties.

Dr. FREDERICK closed the discussion, still maintaining that there was a class of women who must remain in bed for a considerable time after operation, and that this class should not be confounded with those who were able to get up early.

Ruptured Tubal Pregnancy.—Dr. HUNTER ROBB of Cleveland presented a paper with this title, with the subheading, "When shall we operate?" This speaker believed that early operations were responsible for many deaths. He was convinced that shock was the real condition from which these patients were suffering, and that it was this shock rather than hemorrhage which was responsible for their condition. This, he thought, might be partly proved by the fact that their state became grave more rapidly than it could do if hemorrhage were the cause of it. The physiologists said that a human being could lose 3 per cent. of body weight in blood without any very serious damage, and he questioned very seriously whether more than this was ever lost by the rupture of a tubal pregnancy. It had been his experience that active bleeding had ceased by the time the tube could be gotten at and ligated. The patient, therefore, was not bleeding to death, but was in a condition of shock, and he believed that a wholesome reaction should be allowed to set in, aided in its advent by stimulants, saline infusions, and the application of weights or pressure to the abdomen before an operation was attempted. Otherwise we should be in danger of adding shock to shock. None of his twenty-five patients had been operated upon earlier than twenty-four hours. The time had varied from three to twelve days after rupture, with an average interval of five days. Twenty-nine experiments on dogs had shown that hemorrhage stopped before a fatal termination ensued, even when vessels so large as the uterine and ovarian arteries had been severed. In making this statement he had not lost sight of the fact that dogs stood bleeding better than human beings. The experiments had shown that clotting took place in from fifteen to twenty minutes and that there was no danger of dislodging the clots by the administration of intravenous infusions.

Dr. C. C. FREDERICK of Buffalo had found from personal experience that only 5 per cent. of the cases were accompanied by hemorrhage severe enough to threaten a fatal issue. Therefore, in 95 per cent. of cases the control of the hemorrhage might safely be left to nature's conservative methods; 5 per cent. of the patients would die if left alone, and they would probably die if operation was done. He believed, however, that they should be operated upon on the chance that operative intervention might save them.

Dr. CARSTENS of Detroit said that more people were dying now of appendicitis under conservative treatment than had died ten years ago under less conservative measures. The important point to be determined was whether a tube had actually ruptured, or only aborted. He did not know any way of finding out. If he could tell he would wait in cases of tubal abortion and operate in cases of tubal rupture. He thought that cases were common in which there were successive ruptures and that the shock was due to this increasing loss of blood. He did not believe in washing out all the blood and attempting to ligate the tube. He thought it better to go down through a small incision, clamp the tube and wait.

Dr. MASSEY cited two cases that had ended favorably

without operation. In one of them the subsequent absorption of the blood was aided by electricity.

Dr. Hall of Cincinnati thought that patients *in extremis* were more apt to die if operated upon than if treated expectantly. He had reported such a case of a patient who had been operated upon sixteen days after rupture, in whom perfect recovery resulted.

Dr. Noble of Indianapolis thought there was danger that the general practitioner would misinterpret this paper. He feared it at the same time that he admired it.

Dr. D. Tod Gilliam of Columbus thought that if one were going to operate at all, there was greater danger in a delayed operation than in one performed immediately and quickly, in the Trendelenburg position. He knew of an unoperated case in which death occurred frem hemorrhage.

Dr. Henry Banga of Chicago expressed his belief that the outlook depended upon whether the rupture took place into the broad ligament or cul-de-sac of Douglas (in either of which events hemorrhage would soon stop spontaneously), or whether it took place into the abdominal cavity, where it would not be so checked. In a patient with a history pointing to a ruptured tubal pregnancy, if the uterus was found in the median line, it was probable that bleeding was going on into the peritoneal cavity.

Dr. August Martin of Greifswald did not agree with Dr. Robb. It was a cardinal rule in surgery to secure a bleeding vessel, he said. He had seen at autopsy women who had died of tubal abortion. Statistics that he had been collecting year by year spoke more and more insistently as time went on for early operation, and he thought that of late years the general opinion had been in favor of early operation. It had been his experience that shock was diminished as soon as the bleeding vessel was secured.

Dr. Campbell of St. Joseph had believed for some time that it was not possible for a patient to bleed to death from the rupture of a tubal pregnancy. It had been his custom to wait from twenty-four to forty-eight hours, and out of five cases treated four had rallied from the shock and recovered from the operation. The fifth patient, who refused operation for four days, died of ileus after operation. He thought that in waiting too long there might be danger of peritonitis.

Dr. McDermott of Chicago thought that the blood should be allowed to escape slowly from the abdominal cavity through a small incision in the peritoneum, thus avoiding any rapid change in intraabdominal tension.

Dr. Theinthaus of Milwaukee expressed his belief in immediate operation.

Dr. Henry of Omaha thought that operation should be resorted to immediately and abdominal pressure applied.

Dr. I. S. Stone of Washington favored immediate operation, preceded by saline infusion.

Dr. Robb, in closing the discussion, emphasized the importance of frequent hemoglobin estimations, to determine whether or not the hemorrhage had stopped.

Obstetric, Septic and Anesthetic Toxemias.—Dr. H. G. Wetherill of Denver said that there was a distinct type of postoperative toxemia, caused, among other things, by sepsis, or by late chloroform poisoning. It was quite analagous to the toxemia of pregnancy. Eye symptoms were present, but not so well developed as in the toxemia of pregnancy, because there was not time enough for them to become so marked. Uranalysis showed an acidosis, with a high ammonia coefficient, but no albumin. In many diseases the death picture was so similar that the author wondered whether death was caused, not by the toxins of some disease, but by the accumulation in the system of the products of its own metabolism. The practical lesson to be learned was, not to use chloroform in cases of toxemia with renal or hepatic insufficiency. He thought that the toxemia of pregnancy had many things in common with sepsis, sapremia, and late chloroform poisoning.

Dr. B. Cohen of Buffalo thought that the intestine was the chief cause of the toxemia of pregnancy.

Dr. H. D. Fry of Washington said of the significance of a high ammonia coefficient, that he had been forced to empty the uterus when the coefficient was only 4, and, on the other hand, he had seen patients do well with a coefficient of from 30 to 40. He could not, therefore, agree with the rule of Dr. Williams, of Philadelphia, that the uterus should be emptied when the ammonia coefficient reached 10 per cent.

Dr. Wetherell closed the discussion, saying that he did not believe that Dr. Williams' rule was the last word. Perhaps Dr. Williams might want to modify this rule. He emphasized the importance of an examination of the eyes by a competent oculist.

Diphtheritic Genital Infection.—Dr. Wm. Cuthbertson reported a case of this disease. The woman was delivered in St. Luke's Hospital, Chicago, after several outside physicians had tried and failed. Some days after delivery the temperature rose, and smears from the vagina showed the Klebs-Loeffler bacillus. They could not be demonstrated in the uterus. Ten thousand antitoxin units were administered in divided doses and local treatment employed. Slow recovery took place. Cultures of this organism were fatal to guinea pigs and the organism was obtained in pure culture again from the pigs.

Dr. Keyes of Chicago thought that the acidity of the vagina prevented a woman with faucial diphtheria from contracting a diphtheritic infection of the genital tract.

Dr. A. E. Gallant of New York emphasized the importance of not waiting for the bacteriological report before giving antitoxin. He had found powdered sulphur very effective in killing the bacillus of diphtheria in *situ*.

Dr. Cuthbertson, in closing the discussion, said he would rather give large doses of antitoxin and let the sulphur go, although he supposed that there could be no harm in its local use.

Genital Tuberculosis.—Dr. August Martin of Greifswald, Germany, presented the results of an analysis of his cases. He considered only those in which the tubercle bacillus could be demonstrated in sections. He found that of all serious inflammatory diseases of the pelvic organs coming to operation, 24.6 per cent. were due to tuberculosis. The clinical diagnosis was difficult. In 55 per cent. of his cases there had been menstrual disturbances. Pain and loss of flesh had been variable symptoms. If the Calmette reaction was positive in a pregnant woman with genital tuberculosis, she had enough power of resistance to be able to go on with the pregnancy. If the reaciton was negative, the pregnancy should be terminated. Tuberculous peritonitis was common in young girls and was most often of the exudative type. The diagnosis was relatively easy. The ascites might be diagnosed from that due to carcinoma of the peritoneum by the fact that in tubercular peritonitis the sample aspirated for diagnosis was clear, straw-colored, while in carcinoma it was blood-stained. The treatment was general and local. Ulcers in the vagina were curetted and touched with powerful astringents, as were also ulcers of the endometrium. If the tubes and ovaries were tuberculous, they should be removed, care being taken not to remove any more than was absolutely necessary. Drainage should be used only in mixed infections. The vaginal route should be followed if possible. The after-treatment was important. Guaiacol and creosote had done wonders.

Dr. H. J. Boldt of New York thought that in tuberculosis of the tubes and ovaries two-thirds of the cases could be permanently cured unless the disease had progressed too far in other parts of the body.

Dr. E. E. Montgomery thought that early cases of tuberculous peritonitis were very amenable to treatment.

Dr. H. T. Byford of Chicago thought that tuberculosis should be considered a general rather than a local disease. As such, medicine, not surgery, was the proper treatment for it.

Dr. D. Tod Gilliam of Columbus said that the great majority of cases of genital tuberculosis were descending and he agreed with Dr. Martin that they arose in the gastrointestinal tract. He did not agree with Dr. Byford, however, for he thought that tuberculosis was a local disease from the beginning. Certainly the cure of tuberculous peritonitis by the opening of the abdomen might be credited to surgery.

Dr. C. W. Barrett of Chicago said that from a pathological standpoint we must consider tuberculosis at first a local disease. He thought that it would be a step backward to consider it general.

Dr. Massey protested against curettage, on the general principal that to curette in a microbic infection was to open up new channels for infection.

Dr. Martin closed the discussion by denying that he had done harm to any of his patients by curettage, which he practised only in selected cases and with all possible safeguards against the spread of the infection.

Development of Malignancy in Operation Wounds.—Dr. I. S. Stone of Washington called attention in this paper to certain cases in which carcinoma, sarcoma, and tuberculosis had made rapid strides after operation, and asked whether the spreading of these diseases from cut surfaces could possibly be prevented by antiseptic measures.

Dr. H. J. Boldt of New York said that for years he had had the outer limits of the tissue which he had removed examined microscopically. The report was always negative, and yet recurrences often took place. There must be some predisposition to carcinoma, he thought, in a person suffering from it, for the infection of a surgeon with it from wounds received at operation was an unknown thing.

Dr. H. G. Wetherill of Denver had for five years used a cauterizing clamp, which closed all avenues of infection.

Dr. G. Gellhorn of St. Louis reported a series of thirty-nine cases operated upon in Berlin, with four recurrences, all remote, however, from the site of operation.

Dr. G. B. Massey of Philadelphia counseled care to avoid squeezing tumors during removal, with consequent forcing out of their material upon freshly cut surfaces.

Dr. D. H. Craig of Boston thought that cellular irritation was set up by retractors, etc. For this reason, when he was ready to suture, he always trimmed away with clean, fresh instruments, the edge of the incision.

Dr. Stone closed the discussion by saying that he did not believe that the cautery clamp sealed off more than one-eighth of the cut surface.

Uterus and Stomach: Their Anatomical, Physiological and Pathological Relationships.—Dr. F. J. Taussig of St. Louis thought that a connection between the uterus and stomach by means of the sympathetic system, while probable, was not anatomically demonstrable. Elsner had found acidity of the stomach increased just before the onset of the menstrual flow and diminished during the flow. Thus, it was unnecessary to consider the gastric symptoms which accompanied menstruation as sympathetic. Most cases of hyperemesis gravidarum were not neurotic, but toxic. In retroversion, it was generally a hypoacidity that was present. A few cases with gastric symptoms might be the result of neuroses, but most of them had a definite lesion behind them.

Dr. Carstens of Detroit wished to emphasize the fact that very few of these patients with gastric disturbances were helped by gynecological operations. What they needed was months and months of systematic physical exercise.

Dr. D. H. Craig thought that the more thoroughly patients were examined the fewer would be the neuroses.

Bowel Complications Following Gynecological and Obstetrical Operations.—Dr. C. W. Barrett of Chicago thought that these post-operative complications became fewer as the skill and experience of the operator increased. All unnecessary handling of the intestines was to be avoided, and operations should be completed in as short a time as possible. The causes and treatment of intestinal obstruction were presented in detail. Eserine was recommended for ileus.

Dr. D. H. Craig of Boston thought that meteorism, in the absence of mechanical obstruction, could be avoided after operation by the routine administration of eserine.

Dr. D. Tod Gilliam of Columbus thought that eserine was a valuable drug, but that sometimes dynamic ileus would occur.

Dr. H. P. Jack of Canisteo, N. Y., thought that eserine, given immediately after operation, was invaluable. He said the time consumed by the operator had a very definite effect on the number of cases of bowel complications.

The Expectant Treatment of Ureteral Calculus.—Dr. C. L. Leonard of Philadelphia was of the opinion that the discovery of a calculus in the ureter was not necessarily an indication for its removal. Many calculi would pass by themselves. However, the patient should be most carefully watched, frequent *x*-ray examinations and uranalyses being made. The results of expectant treatment were successful in 60 per cent. of the cases. The discovery of more than one calculus was no contraindication to expectant treatment. The contraindications were, he thought, a large calculus, marked pyuria, rise in temperature and the absence of a bilateral urinary flow. Pus and blood in the urine, in the absence of fever, were not necessarily an indication for operation. Treatment during attacks of colic comprised general anesthesia, if necessary, atropine, and moist heat. Morphine might render slow the descent of the calculus. It was useless to give solvents. The formation of fresh deposits, however, could be prevented by diluting the urine and changing its reaction.

The Injection Treatment of Ureteral and Renal Pelvic Inflammation.—Dr. Edgar Garceau of Boston presented the instrument which he used in this treatment. He used either dilute silver nitrate, or bichloride solution 1-20,000 up to 1-5,000. He had never seen colic result because he had never tried to force the fluid in. Small amounts (10 c.c) should be injected repeatedly. The ureter and pelvis were washed out with boric acid before the antiseptic was applied. The injection should cease as soon as the patient noticed a slight sensation of fullness. Once or twice a week was often enough in most cases. He did not advise the indiscriminate use of this treatment, and these injections should never be used in acute pyelitis. The most suitable cases were those with a considerable pyuria extending over a long period of time. Pyelonephrosis was seldom benefited by this treatment. Chronic ureteritis with thickening was a contraindication to this treatment.

Dr. Young of Baltimore agreed with Dr. Leonard in regard to the expectant treatment of small calculi. He had tried the injection of olive oil above the calculus with success in one case. He showed his dilator for the ureter, similar in principle to the urethral dilator. Local treatment of the renal pelvis he had tried, but it had generally failed. In persistent hematuria the intrapelvic use of adrenalin had been of distinct benefit.

Election of Officers.—At the beginning of the afternoon session the election of the following gentlemen was announced: *Chairman*, Dr. W. P. Manton, of Detroit; *Vice-Chairman*, Dr. H. G. Wetherill, of Denver; *Secretary*, Dr. Jeff Miller, of New Orleans; *Delegate*, Dr. J. H. Carstens, of Detroit; *Alternate*, Dr. Channing W. Barrett, of Chicago.

The Treatment of Fibromyoma Associated with Marked Anemia.—Dr. Benjamin R. Schenck thought that hemorrhage leading to some degree of anemia was

present in from 50 to 60 per cent. of patients with fibroids. But how often the anemia was sufficient to make operation advisable was another matter. There were three important points which one must have in mind in the consideratoin of fibroids—the effect of the anemia, if present, the treatment, and the prognosis. Cardiovascular changes were present, according to Schlegel's series of eighty autopsies, in 40 per cent. of cases with uterine tumors. There were four theories extant to explain the relation between cardiovascular changes and fibroids, no one of which the author considered tenable. In his opinion the anemia was the cause of the cardiovascular phenomena. If this were true, then all fibroids causing increased bleeding at the time of menstruation should be removed. It was the general belief that it was unwise to operate on any patient whose hemoglobin percentage was less than from 40 to 30. Some operators, on the contrary, would not fix any arbitrary point below which it was unsafe to operate. The hemorrhage should be stopped before operation by curettage and packing, or by other means, and the patient built up with tonics. In bad cases he believed ligation of the uterine arteries advisable before the hysterectomy was performed. The operation must be carefully and quickly done. In regard to the prognosis, he thought that grave anemia increased the danger of thrombosis or embolism during convalescence.

Dr. D. H. Craig of Boston reported a case in point, in which the hemoglobin percentage rallied promptly after the operation.

Dr. H. T. Byford had been afraid to operate when the hemoglobin percentage was below 40. When hemorrhage became a symptom, he thought that an operation should be done as soon as the patient could be gotten into condition for it.

Report of a Case of Traumatic Rupture of the Uterus.—Dr. P. H. Swahlen reported a case of rupture of the uterus during labor at full term, with a concomitant rupture of the bladder. Hysterectomy was done, with complete recovery as a result.

Abnormal Secretion from Mammary Glands in Non-pregnant Women.—Dr. George Gellhorn of St. Louis said that a colostrum-like secretion was frequently seen in the breasts of virgins during menstruation. This might even take the place of menstruation and had been known to approach milk very closely in its character. In false pregnancy, colostrum, or even milk, had been secreted. Of five hundred women in their menopause, fourteen had secreting breasts. In 25 per cent. of senile breasts, parenchymatous hypertrophy occurred, which might account for some of the cases of senile secreting breasts. Fourteen cases of mammary secretion in sterile women, all of whom had some gynecological lesion, were noted by one observer. The removal of the ovaries would sometimes start secretion in the breasts of non-pregnant women in the active sexual period. This was not seen if fragments of ovary were left behind. Atrophy of the ovaries had sometimes caused a secretion. A practical knowledge of this subject was necessary to those in medicolegal work.

Dr. Henry of Omaha reported the case of a woman who, after the removal of both tubes and ovaries, had every month a secretion of milk by the breasts, lasting for four or five days. This condition lasted for about a year.

Dr. B. Kohn of New York reported the case of a girl with two supernumerary mammæ which secreted at each menstruation.

Dr. De Lee of Chicago had found it necessary, in the diagnosis of pregnancy, to surround mammary changes with a great many qualifications. He thought that the hypertrophy of the gland tissue and of Montgomery's tubercles was of much more importance than the presence of colostrum.

Dr. Hinchey of St. Louis said that the influence of the ovary on the breast could not account for milk in the male breast, where hermaphrodism could be eliminated.

Dr. Gellhorn closed the discussion, reporting two cases of bleeding from the mammæ in cases of hysteria. These were not cases of vicarious menstruation.

The Menopause.—Dr. Daniel H. Craig of Boston thought that we must combat the idea that diseases which we had treated vainly were going to be cured by the menopause. Symptoms arising during the menopause were due just as much to a definite pathology and needed just as careful treatment as though they had arisen at any other time. The vasomotor disturbances were probably due to changes in the anatomy of the ovary. Erratic menstruation, if carcinoma of the cervix could be excluded, pointed to trouble in the body of the uterus. Pain, generally inguinal, and leucorrhea were almost always signs of cervical disease requiring attention. Practitioners, then, should teach women that the menopause is a physiological period and that symptoms arising during its course should be treated.

Ablatio Placentæ.—Dr. R. W. Holmes defined this as the premature detachment of the normally situated placenta. It was more common than was generally supposed, but was almost always mistaken for placenta prævia. It was probably about one-half as frequent as placenta prævia. The direct cause was violence, the indirect cause multiparity, it being more common in women who had borne children and who were in the second or third decade of the child-bearing period; and the pathological causes were inflammatory changes in the endometrium, nephritis, placentitis, and lesions in the blood-vessels of the uterus. Hemorrhage was the sole pathognomonic symptom. The amount of jeopardy to mother and child should never be judged by the amount of blood appearing in the vagina, for every case had a greater amount of blood remaining behind in the uterus. Serum escaping from the vagina was not to be mistaken for liquor amnii. An accessory tumor was found in about 50 per cent. of the cases. Pain was nearly always present, with nausea, or even loss of consciousness. The treatment should be immediate delivery. The cervix was generally soft and readily dilatable. Manual dilatation was best in these cases. Vaginal cesarean section would be the ideal method of delivery if the field were not so entirely obscured by blood. Abdominal section, in cases with rigid cervices, was good in hospital cases. After labor the uterus and vagina were to be packed with gauze. This hemorrhage was the only one admitting of the use of ergot before the delivery of the placenta. It should be given in small doses.

Dr. De Lee was not entirely satisfied with the term "ablatio." He had suggested and used "abruptio." He had seen an accessory tumor only once.

Dr. S. Strauss of New York thought vaginal cesarean section the method of treatment *par excellence*.

Dr. McKowan of Memphis reported two cases that had occurred in his practice recently.

Dr. Harter of Stronghurst, Ill., and Dr. F. T. Marshall of Chicago each reported a case.

Dr. Holmes closed the discussion, saying that he used the term "ablatio" because he thought that it covered the case better than any other.

Prolapse of the Rectum and Sigmoid Flexure Following Hysterectomy.—Dr. L. T. Hirschman of Detroit reported two cases and described an operation which he had devised for their cure. The sigmoid was pulled up and a fold sewed in its mesentery.

Dr. D. Tod Gilliam of Columbus asked whether the sutures were introduced at right angles or parallel to the vessels of the mesentery. If at right angles, had the circulation been interfered with?

Dr. Hirschmann replied that the sutures had been inserted at right angles to the blood vessels, but that care had been taken not to include the vessels in the sutures.

The Adjustable Canvas Chair as an Aid in the Murphy Treatment of Diffuse Suppurative Peritonitis.—Dr. D. Tod Gilliam described a chair which he had devised, the object of which was to prevent the patient from becoming soiled by his evacuations and to make his position more comfortable. It was like an ordinary steamer chair, in which the canvas had been replaced by rubber. Any position between the upright and the nearly horizontal could be assumed. There was an oblong opening in the rubber, which allowed the excreta to flow away into a vessel. It combined cleanliness, convenience, cheapness and comfort.

Serum Treatment of Carcinoma.—Dr. S. Strauss of New York believed there was some cause at work in the production of carcinoma other than local irritation. His method of treatment was the injection of the serum of an animal (generally the horse), who had a tumor similar to that of the patient. There was generally some reaction after the first or second injection—flushed face, rise in temperature, and restlessness. The dose varied from one-half to fifteen cubic centimeters. He reported the treatment of thirty cases with this serum. The symptoms had been ameliorated, and one case, a recurrent carcinoma of the pylorus, had apparently been cured.

Dr. J. J. Watkins of Chicago thought that the results were encouraging.

Dr. Strauss said he did not wish to be understood as claiming to cure cancer. It was only that he was working on a treatment, the results of which so far had been encouraging. The cure which he reported might have been only a coincidence.

Thursday, June 4—Third Day.

The Corset for Movable Kidney and Associated Visceral Ptoses.—Dr. A. E. Gallant, the reader of this paper, was of the opinion that 99 per cent. of cases of movable kidney could be relieved by properly constructed corsets. The corsets must fulfil two conditions, namely, they shall restore the displaced viscera to their proper positions, and keep them there. The ordinary corset, laced tightly at the waist, would relieve the symptoms of a movable kidney, but the dyspepsia, constipation, etc., associated with the enteroptosis so frequently coexisting, would be increased. The corset which the author recommended must, he said, be made to order from accurate measurements, and must conform to the latest mode—else fashionable women would not wear it. The front steels must overlap the upper part of the symphysis pubis. The corset should be put on while the patient was in a recumbent posture, with the hips elevated, and the legs exactly at right angles to the bed. The abdomen should be massaged upward, and the corset then put on, and fastened in front from the bottom upward. It was then laced up behind. The only difference between this corset and the type ordinarily in use was that the front was enlarged from below upward, V-fashion, to make room for the stomach that had been replaced. The corset pressed the sides in at the waist, and allowed more room in front, so that the waist was not enlarged. A cross section of the waist would thus be almost a circle, instead of, as was the case with the ordinary corset, an oval, with the short diameter in the sagittal plane.

Dr. DeLand of Philadelphia thought that the ordinary corset increased the gastroptosis, and wished to ask whether the *x*-ray would demonstrate the stomach and colon in their proper positions. She had never yet found a corset that would do this, and had had to rely on bandages.

Dr. McLane of St. Louis had tried the Gallant method and had found it of great value, especially after abdominal section with drainage, where this corset was more comfortable than a binder.

Dr. Gallant closed the discussion, showing by means of diagrams why the binder failed in its purpose.

The Suture: Its Place in Surgery.—Dr. Henry O. Marcy thought that the interrupted suture was time-consuming and had no advantages over the continuous suture. In suturing, like structures should be coapted—muscle to muscle, fascia to fascia. Fine running sutures carried out this rule. The over-and-over suture (glover's stitch) was not nearly so good as the parallel suture, with which latter coaptation was more evenly secured, and the suture buried in firm, healthy tissue. The needle he thought as important as the suture. It was best to use a curved Hagedorn needle of medium size so that it could be grasped with the fingers if necessary. All aseptic incisions, closed with buried aseptic sutures of kangaroo tendon, would remain aseptic; and if the work were well done the scar would be almost invisible. In two thousand laparotomies he had had but one hernia. The buried animal suture the reader thought had been his best contribution to surgery, and recommended that the animal material be kangaroo tendon.

Dr. H. P. Jack of Canisteo, N. Y., had never used anything but catgut. He reported a case of aseptic breaking down of a laparotomy wound which had been closed in layers with No. 2 thirty-day chromic gut. Pulse and temperature were normal for two weeks, at the end of which period the wound opened and the intestines escaped. The woman was of a very gouty constitution, and he thought that this might have had something to do with the rapid absorption of the gut.

Dr. D. Tod Gilliam of Columbus had had such evil results with catgut that he had returned to silkworm gut.

Dr. A. E. Gallant of New York had found that double knots were a frequent cause of the accumulation of serum in a sutured wound. The gut was absorbed but the knot remained as an irritant.

Dr. Marcy closed the discussion. In reply to Dr. Jack he said he, too, was of the opinion that the fault lay with the reparative processes rather than with the catgut. In long abdominal incisions he liked to keep the abdominal wall at rest with strips of adhesive plaster.

The Advisability of Prompt Evacuation of the Uterus in Eclampsia.—Dr. Henry D. Fry of Washington said that of all the theories of the etiology of eclampsia that of autointoxication was the most promising. Lesions were found in the liver, kidney and brain, and the outcome of the disease corresponded to the degree to which these lesions had advanced. As a rule they had not advanced beyond the danger line before the first convulsion. He thought the obstetric treatment was infinitely more important than the medical treatment, and that one should take no chances by trying to eliminate a poison while its elaboration was still going on. The uterus should be emptied as soon as possible and only then should efforts be made to get rid of the toxin already absorbed. By this method the mortality would be reduced to its lowest figure. By this treatment fifteen cases of eclampsia and one case of preeclamptic toxemia showed a maternal mortality of one. Twelve of these cases had had no convulsions after delivery, two had had two convulsions, and two had had one. The fatal case was practically moribund at the time of operation. The methods used had been vaginal cesarean section in twelve cases, manual dilatation and forceps in two cases, manual dilatation, incisions of the cervix and forceps in one case, and symphysiotomy and forceps in one case. The writer admitted that the infant mortality was high, but thought it was not any higher than under the expectant method of treatment.

Dr. Laura Branson of Iowa City thought that a great deal of the toxemia was due to the fetus and that this indicated early delivery.

Dr. Sprig of Washington said that in preeclamptic toxemia near term, he had been accustomed to empty the uterus without waiting for a convulsion. He had never felt that a uterus had been emptied too soon, but had often felt that one had been emptied too late.

Dr. H. J. Boldt of New York thought the important question was, How shall we deliver these cases most quick-

ly and safely? In postpartum eclampsia he felt that decapsulation of the kidney should not be dismissed without thought.

Dr. Harris of Chicago emphasized the importance of early evacuation of the uterus.

Dr. B. Kohn of New York thought that women should be educated to place themselves under medical care early in the pregnancy.

Dr. Carstens of Detroit agreed with the previous speaker in regard to the early consultation of women with their physician. There was only one way, he thought, to empty the uterus rapidly. That way was vaginal cesarean section. This operation should be learned by the general practitioner, for it was he who saw these cases first. Thus much valuable time would be saved.

Dr. August Martin of Greifswald, Germany, said that veratrine, morphine, and chloroform would have to be given up as soon as we agreed that eclampsia was a toxemia. He thought it most likely that the toxemia was produced by the ovum, and agreed entirely with the previous speakers who had insisted on the early evacuation of the uterus. Decapsulation of the kidney, he thought, might possibly be tried in appropriate cases, but he did not dare to recommend it. Certain it was that prophylaxis was the most important phase of this whole question. Could we not diagnose the coming danger? He believed that we could, for these were prodromal symptoms of great importance. Some of these were severe headache, loss of appetite, a feeling of lassitude and sleeplessness. The quanity of urine was diminished, and cells showing fatty degeneration were found, and sometimes albumin. Edema of the limbs which does not disappear after rest in bed, as does that caused by the weight of the pregnant uterus, was another important danger signal. Finally the arterial tension increased rapidly and remarkably. Thus, he thought, the development of the toxemia could be recognized long before the appearance of the convulsions. The treatment was to increase the action of the skin by measures other than the administration of drugs. If the condition did not improve, the patient should then be sent to a hospital or sanatorium, where she could be most closely watched. If then the symptoms persisted, the pregnancy should be interfered with. The bougie and the bag required too much time, and he advocated most strongly vaginal cesarean section.

Dr. Chas. Jewett of Brooklyn was substantially in accord with the theory that the toxemia was due to the presence of the child in the uterus, but thought that it was frequently of hepatic origin, and occasionally, was primary in the kidneys. He agreed that evacuation of the uterus was the only treatment.

Dr. Warthen of Louisville thought that eclampsia should be prevented, and that it could be prevented with proper care. He thought eclampsia was the result of an enzyme, originating in the epithelial structure of the chorion by some method that we did not at present understand.

Dr. Fry closed the discussion, saying that it had been his idea to present a paper on a single topic—the advisability of emptying the uterus in eclampsia. He could not believe, with Dr. Carstens, that the general practitioner could do a vaginal cesarean section. Decapsulation, since attention had been diverted from the kidney as the primary cause of eclampsia, had fallen into disrepute. It might, however, come into play in postpartum cases.

The Conservative Surgeon and the Symptomless Uterine Fibroid.—Dr. Thos. B. Eastman of Indianapolis said that a fibromyoma might frequently be in such a condition as to endanger life without this fact being discovered until it was seen at operation, or upon microscopical examination. While it was not possible for a fibroma to degenerate into a carcinoma, still there seemed to be some relation between the two, for cancer of the body of the uterus was eight times more frequent in the presence of fibroids. Necrosis was the most frequent degeneration with which we had to deal, and this, or even carcinoma or sarcoma, might exist without symptoms. Symptomless cystic ovaries, chronically inflamed appendices and gallstones were all removed by the conservative surgeon; why not a symptomless fibroma, when it had been shown that twelve per cent. of fibromata, if allowed to remain, will ultimately show conditions which would threaten life. The idea that fibromata shrink up after the menopause was fallacious, and we know that 64.9 per cent. of the dangerous degenerations occurred after the fortieth year. The idea that the menopause was a natural cure for fibromata was, then, a relic of the dark ages of surgery. He therefore strongly advocated the removal of fibromata before they had a chance to degenerate.

Dr. Andrews of Chicago said that he was opposed to this idea.

Dr. H. J. Boldt of New York said that sarcomata which were supposed to have been the result of degenerated fibromata had probably been sarcomata from the beginning, and not a malignant degeneration of a preexisting fibroma. He believed that the uterus should be removed with a fibroma that was causing symptoms, but was opposed to the removal of the uterus with a symptomless fibroid. He had seen fibromata in patients who had refused operation, retrograde and become smaller.

Dr. Lawrence of Columbus said that the danger from the operation itself was practically *nil,* while the danger of malignancy was 5 per cent. and of necrosis and suppuration also 5 per cent., or even greater, especially where tampons and electricity were used as treatment. Besides these dangers, there were the results of pressure. He therefore agreed that fibromata should all be removed.

Dr. Carstens of Detroit thought that a woman really suffered in the idea that she was the victim of a tumor which might some day cause trouble. He thought that this in itself was a sufficient indication for the early removal of fibromata.

The Non-Surgical Treatment of Uterine Displacements.—Dr. H. J. Boldt said that the practice of minor gynecology had been almost lost sight of in the past few years, because of the advance that has been made in gynecological surgery. It was true that surgery would cure displacements of the uterus far more rapidly and surely than they could be cured by non-surgical means, but there were patients upon whom, for one reason or another, operation was unadvisable, who could be relieved by properly adjusted mechanical support. The displacements that were most frequently amenable to mechanical treatment were posterior displacements, and descensus of the uterus, with or without descensus of the vagina. The posterior displacements the reader divided into retroposition, retroversion, and retroflexion. Retroposition he thought was not likely to cause symptoms. Retroversions were sooner or later accompanied by retroflexions. The majority of retroversions and retroflexions were acquired, and in this type of cases, rather than the congenital cases, which were more apt to be benefited by mechanical treatment. It was the acquired malpositions, too, which were more apt to give rise to symptoms. Retrodisplacements fixed by inflammatory adhesions were not suitable for treatment by pessaries, nor should the pessary be used in the presence of any acute inflammatory condition in the pelvis. In using a pessary the uterus should be replaced bi-manually before the pessary is introduced. If this was impossible, the condition was not suitable to the proposed treatment. In replacing the pregnant retroflexed uterus, the author said that he was in the habit of reducing the displacement while the woman was in the knee-chest position, and then introducing the pessary. The retroflexions most amenable to permanent cure were those of recent postpartum origin. A patient should not be conscious of a pessary and would not be, if the pessary were of the proper size

and shape, and in correct position. The most suitable pessaries were the Albert Smith and the Thomas. A cure, when cure was possible, required from two to five years. From twenty to twenty-five per cent of uncomplicated, mobile, backward displacements of the uterus could be permanently cured by this means. Occasionally it was proper to forcibly break down light adhesions under anesthesia in order to get the uterus into proper position for the application of the pessary. In doing this, it was necessary first to rule out tubal complications. The pessary treatment for acquired pathological anteversions and anteflexions the reader considered practically useless except to relieve the vesical tenesmus. Only one kind of pessary was of any use in this type of case—the Gehrung. The treatment by pessary of congenital anteflexions was useless.

Dr. Hall of Kansas City thought the pessary should never be used in the presence of adhesions, or of pathological conditions in the adnexa. It was often impossible to say whether the uterus was in its proper position or not, before the pessary was applied. He considered it necessary that some sort of guide be passed into the uterus to make the solution of this question easy. The best cure for retrodisplacements, outside of surgery, he considered to be pregnancy—the uterus being allowed afterward to involute in its proper position.

Dr. G. Gellhorn of St. Louis deplored the frequent operative treatment of malpositions of the uterus. He thought that in using the intrauterine guide advised by the last speaker there was always the danger of perforation. He did not believe that the pessary would ever cure retroflexion of long standing.

Dr. A. Goldspohn of Chicago agreed with the essayist in all that he had said, except in the question of cure. He did not believe that permanent cure took place, except in malpositions after labor, where the element of involution was still present.

Dr. Bertha VanHusan of Chicago had treated many cases of prolapse of the uterus with glass globe pessaries with a great deal of success. There must, however, be some muscular perineum left.

SECTION ON ANATOMY AND SURGERY.

Friday, June 5—Fourth Day.

My Present Position on Appendix Questions.—Dr. Robert T. Morris of New York read this paper. He now ligated the stump and carbolized it. He restricted the size of the abdominal incision and tried to do the work in as short a time as possible. He had given up flushing and the use of the gauze wick drain. He said we were now at the dawn of the physiological era of surgery.

Dr. A. J. Ochsner of Chicago said that his attitude toward operation for appendicitis had come to be about as follows: As to the need of immediate operation in nonpurulent cases, sufficient observation had been made to make it safe to say that there should be no question or hesitation. The elimination of the purulent appendix from the general peritoneal cavity till it could be safely operated upon was a life-saving plan, and it should be practised in those cases where immediate operation might be fatal. Certainly this dictum applied to the surgeon of average skill, if not to all, and, properly applied, it had reduced the mortality from 16 per cent. to 2 per cent.

Dr. J. B. Murphy of Chicago spoke of the need of the greatest speed combined with the least traumatism to the tissues. Simple ligation of the stump he practised under certain adverse conditions, but in the ordinary interval operation he would not consider it justifiable—in any event there ought to be a smooth cuff of peritoneal covering placed over the raw surface to prevent adhesions. As to peritonitis in pregnancy, he said the mortality was so surprisingly high that he always advised appendectomy before the end of the second month. In forty-three cases of general peritonitis from perforating appendicitis, he had had forty-one recoveries. The treatment in each case consisted simply in posture, drop method of rectal irrigation, drainage, no flushing, no trauma, no wiping.

Dr. Alexander Ferguson of Chicago said it was difficult to know just what was meant by a "small incision." There was in all these things a large element of personal equation. For example, some of the cases whose bellies and rectums Ochsner washed out seemed to him to need a very small incision to establish a point of least resistance for escape of gas.

Dr. Graham of Rochester, Minn., said that in the absence of both the Mayos he would say that it was customary with them to proceed as follows: Operate at once if within 48 hours of onset of attack. If after 48 hours, in chosen cases the starvation treatment of Ochsner was employed. If abscess had already formed, it was drained through a stab. Then, after all had healed, the appendix was taken out. No search was ever made for it at time of primary operation.

Dr. Eisendrath of Chicago said the dictum was that cases of general peritonitis should be left alone—there was no use of operating when too late, when the general resistance and the index were so low that all was hopeless. Operation in these cases gave just the added shock to carry such patients over the lethal line. All such patients should be put in Fowler's position and be starved until they were tided over. At the Michael Reese Hospital, of the last 34 cases of general diffuse peritonitis, 21 had been saved by this course. Of his own last 12 cases, he had been so fortunate as to save 11 out of 12, but this he feared was coincidence. He thought that a combination of the Ochsner method with Murphy's drop irrigation—for which latter he was perfecting a simple device—seemed to give the best grounds for hope. He thought it certain that many of these patients died of acute dilatation of the stomach. All patients should have advantage of the Fowler operation.

Vesical and Renal Calculi and Vesical Tumors.—Dr. Carl Beck of New York read this paper. He gave many valuable statistics and made the following deductions: Most vesical calculi are originally formed in the kidneys which explains the frequent recurrence of vesical calculus after operation. Therefore a roentgenograph of the renal regions must be taken whenever vesical calculus is found. The cystoscope diagnosticates vesical tumor when skiagraphy may recognize a calculus, this phenomenon being explained by the fact that the tumor is interspersed with calculous elements. This shows the necessity of always combining cystoscopy with skiagraphy.

Dr. Rodman of Philadelphia said that in 1901 he saw some of Ochsner's work. So convinced was he of the soundness of his teaching that he determined to put it into immediate practice. It had done more to straighten out the problem of when to operate than any other single contribution. It was not a substitute for operation. Personally he did not invert the stump, but ligated it, covering carefully with mesoappendix.

Dr. Rogers of Chicago said that often pain was due to the catching of nerves in fibers of connective tissue bands. Leucocytosis was of little value save as an indication of the resisting ability of the patient—the important consideration was the differential count.

Dr. Rolly of North Carolina said that Ochsner's treatment had generally been sorely misunderstood. By some this had been intentional, for it sometimes served as a convenient device of physicians to keep the patient out of the surgeon's hands and allow a so-called "cure by nature." Others honestly thought the Ochsner treatment was actually a substitute for operation rather than the handmaiden of it. Misinterpretation from whatever cause had led to the unnecessary death of thousands of patients who might have been saved by timely operation. The

object of the treatment, its uses as well as its abuses, should be thoroughly understood by all concerned.

Dr. Morris, in closing, said that the Ochsner treatment had not given good results in the hands of New York surgeons. Simple ligation of the stump he regarded as a safe procedure.

Dr. Ochsner in response to calls from the audience replied that he had feared the very outcome to which speakers had referred and had used the method for eight years before publishing it. Since then he had spared no pains to make the indications as clear as day. They had been published frequently and in great detail. He insisted that it had always been advised for inoperable cases only—cases in which death would certainly take place under immediate operation. It reduced the mortality from 16 to 2 per cent. In time drop irrigation of the rectum and Fowler's position might be added to the Ochsner treatment. Pus certainly could be absorbed from the abdominal cavity if present in not too great amount.

Dr. Murphy of Chicago said there was pus and pus—there were very destructive types of pus. Tension was the chief element of danger. He advocated the drop method of saline irrigation of the rectum after all serious operations, whether abdominal or not.

Invagination of Limited Annular Gangrene of the Small Bowel vs. Resection.—Dr. J. E. Summers of Omaha read this paper. He said that annular gangrene of the small intestine one-half to one centimeter wide was not infrequently met with. Stricture might follow repair of gunshot wounds if ordinary invagination was practised. Resection of such wounded gut had in the past been practised, sometimes with artificial anus formation. The essayist had shown by several cases that severely injured gut from whatever cause could be successfully and quickly treated by artificial intussusception, the position being maintained by suture. Devitalized bowel sloughed and lumen was restored.

A New and Rapid Method of Perineal Drainage in Suprapubic Cystotomy.—Dr. Joseph Ransohoff of Cincinnati read this paper. He said that in the suprapubic operation hemorrhage was easily controlled by the free use of formaldehyde-gelatin. It was true that the suprapubic operation had the higher death rate, but this was in part due to the fact that first, it was reserved for the most difficult cases and, second, that it had in the past suffered from inability to be followed by perfect drainage. Drainage from buttonhole or by self-retaining catheter in the urethra had always been unsatisfactory. He showed a trocar and cannula which having a proper curve he had experienced no difficulty in pushing down past the rectum and, on his index finger as a guide, out through the skin of perineum. A tube was easily passed through this and it gave good drainage.

Dr. H. Young of Baltimore said that different varieties of germs determined the reaction of the urine. This was particularly true of proteus. The *x*-ray had been of use in renal and ureteral stones, but of no value in diagnosing vesical calculi. The cystoscope was a necessary adjuvant to the diagnosis of ureteral calculi, for seminal vesiculitis with all the symptoms of renal stone had to be differentiated from it. Time was not the element in mortality, for the suprapubic and perineal work could be done in equal time. He had done many prostatectomies by the suprapubic path. The overwhelming hemorrhage was the chief danger factor of the upper route. By the lower, no packing was necessary; in 200 cases at the Johns Hopkins Hospital there had been no injury to the rectum. He thought that owing to the frequent existence of the rectal pouch the trocar might cause great damage.

Dr. Ransohoff said that this objection to the trocar was purely theoretical.

A Study of Anterior Poliomyelitis, with an Analysis of 647 Cases, from the Children's Hospital, Boston.—Dr. R. W. Lovett of Boston read this paper. He said a very important anatomical point bearing on this disease was that the cells were grouped in bundles running the length of the cord, while the blood supply came in at right angles. Hence a poison which gained entrance through the blood might destroy some motor cells and leave others intact. He referred to statistics—effect of sex and age and climate and to treatment.

Dr. E. H. Ochsner of Chicago said that the first thing to do for these cases was to give a good dose of purgative to get rid of all possible germs in the alimentary canal. There were two points in particular to which attention should be directed, viz.—the reestablishment of muscle equilibrium at the end of operation—it was not strength so much as equilibrium which was the determining factor—learning coordination of movement one point at a time was the second important factor.

Dr. Lovett in closing said that tendon grafting alone followed by prolonged plaster rest was a very poor practice. The after treatment was the most important consideration.

A Function of the Lesser Trochanter.—Dr. V. P. Blair of St. Louis read this paper. He showed a series of remarkable anatomical preparations of the region of the lesser trochanter which showed that (1) the lesser trochanter carried the insertion of the psoas tendon mesialward to a point just outside the axis of rotation, and (2) that the muscle caused to a slight degree internal rotation of the femur.

Preservation of Anatomical Dissections, with Permanent Color of Muscles, Vessels, and Organs, by a New Method.—Dr. Edmond Souchon of New Orleans read this paper. He said the embalming solution was important. It should be composed of arsenic, carbolic acid, formalin, and glycerin, the proportions being the keystone of success. Arteries should be injected with tallow and vermilion, and veins with tallow and ultramarine blue. This takes one to ten days before dissecting. The part should be allowed to drain to get rid of superfluous water. After dissection it is immersed in 1 per cent. solution of carbolic acid until it ceases to color the water; the latter should be changed whenever bloody. The dissection was then to be placed in an empty glass jar and covered. This curing stage should last from four to six weeks. The arteries and veins should next be painted with moist colors, which must be dried thoroughly. The specimen was then placed permanently in a weak solution of alcohol, 20 ounces to the gallon. Specimens which did not develop satisfactorily, which did not stain, or which paled in alcohol, should be placed in a weak solution of carbolic acid until they developed a satisfactory color. They should be removed if the tendons or other white tissues presented a tinge of red gold and should be put permanently in a weak alcoholic solution.

Mucomembranous Enterocolitis. — Nepper defines mucomembranous enterocolitis as a slow, symptom complex characterized by constipation, pain, and formation and coagulation of an abnormal amount of mucous in the colon. The hypersecretion of mucus depends on an excitation of the great sympathetic. Normally, the mucus is reabsorbed in the digestive tract. In enterocolitis this resorption does not take place. Coagulation depends upon the coagulating power of an intestinal product called mucinase. Bile retards this coagulation. In mucomembranous enterocolitis there is a failure of the liver function which permits of coagulation. Intoxications, inflammations, and psychical influences all diminish the secretion of bile by inhibitory influences on the sympathetic system. Biliary secretion being lessened, and peristalsis disturbed, mucinase acts and the syndrome is established.—*Gazette des Hôpitaux.*

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	Cases	Deaths
Tuberculosis Pulmonalis	428	143
Diphtheria	377	30
Measles	841	21
Scarlet Fever	410	25
Smallpox	1	—
Varicella	108	—
Typhoid Fever	38	9
Whooping Cough	48	3
Cerebrospinal Meningitis	7	7
Malarial Fever	—	—
Totals	2,258	238

Health Report.—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, for the week ending June 19, 1908:

SMALLPOX—UNITED STATES.

		Cases.	Deaths.
Alabama, Mobile	May 23–30	1	..
California, Los Angeles	May 23–30	1	..
San Francisco	May 23–30	15	..
Illinois, Chicago	May 30–June 6	1	..
Springfield	May 28–June 4	3	..
Indiana, Indianapolis	May 18–June 7	17	..
Fort Wayne	May 23–June 6	8	..
Terre Haute	May 30–June 6	1	..
Iowa, Ottumwa	May 30–June 6	1	..
Kansas, Kansas City	May 30–June 6	5	..
Kentucky, Covington	May 30–June 6	..	1
Michigan, Grand Rapids	May 30–June 6	1	..
Kalamazoo	May 30–June 6	2	..
Saginaw	May 30–June 6	1	..
Minnesota, Winona	May 30–June 6	4	..
Missouri, Kansas City	May 23–June 6	10	..
St. Joseph	May 23–30	8	..
St. Louis	May 30–June 6	1	..
Nebraska	May 22–29	2	..
New York, Binghamton	June 1–8	1	..
Niagara Falls	May 30–June 6	1	..
Ohio, Cincinnati	May 22–29	7	..
Dayton	May 30–June 6	2	..
Tennessee, Knoxville	May 30–June 6	2	..
Washington, Tacoma	May 23–30	2	..
Wisconsin, La Crosse	May 30–June 6	1	..
Milwaukee	May 23–30	6	..
Racine	May 23–30	2	..

SMALLPOX—FOREIGN.

Arabia, Aden	Apr. 27–May 18	..	10
Brazil, Rio de Janeiro	May 3–10	141	50
Canada, Halifax	May 31–June 6	6	..
Cape Colony, East London	Apr. 18–25	1	1
Ecuador, Guayaquil	May 9–16	..	2
Egypt, Cairo	May 13–20	11	3
France, Paris	May 16–23	3	..
India, Bombay	May 5–12	..	54
Calcutta	Apr. 25–May 2	..	15
Italy—General	May 17–24	41	..
Japan, Osaka	May 2–9	52	29
Java, Batavia	Apr. 25–May 2	3	..
Peru, Lima	May 2–9	2	..
Russia, Batoum	Mar. 1–31	17	..
Moscow	May 9–16	26	11
Riga	May 9–16	5	..
Siberia, Vladivostok	Apr. 28–May 5	1	..
Spain, Valencia	May 16–23	17	3
Turkey, Bagdad	Apr. 25–May 2	29	3
Smyrna	Apr. 14–May 5	..	7

YELLOW FEVER.

Cuba, Santiago	June 11	1	..
Ecuador, Guayaquil	May 9–16	..	2

CHOLERA.

Ceylon, Colombo	May 14–21	1	..
India, Bombay	May 5–12	..	2
Calcutta	Apr. 25–May 2	..	230
Rangoon	Apr. 25–May 2	..	7

PLAGUE.

Chile, Valparaiso	Mar. 21–28	5	3
Ecuador, Guayaquil	May 9–16	..	10
India, Bombay	May 5–12	..	260
Calcutta	Apr. 25–May 2	..	73
Rangoon	Apr. 25–May 2	..	37
Japan, Nara	To May 14	7	..
Osaka	May 17–24	2	2
Peru—General	May 2–9	39	19
Straits Settlements, Singapore	Apr. 25–May 2	..	1
Venezuela, Caracas	June 4–5	3	1
La Guaira	May 30–June 1	8	4

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